REPORT

Contract No. HY/2012/07 Tuen Mun - Chek Lap Kok Link – Southern Connection Viaduct Section:

Impact Monitoring Report for Underwater Noise and Dolphin Acoustic Behavioural Monitoring

December 2014

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8 December 2014

Our ref: 0215660_32_ETL Certification_Underwater Noise Monitoring_v4.docx

By Email

Mr Brian Kam
Environmental Manager
Gammon Construction Limited
28/F Devon House
Taikoo Place
979 King's Road
Hong Kong

Dear Sir,

Contract No. HY/2012/07
Tuen Mun – Chek Lap Kok Link – Southern Connection Viaduct Section
Impact Monitoring Report for Underwater Noise and Dolphin Acoustic Behavioural Monitoring

I refer to *Section 6.4.5* of the *EM&A Manual* (*EIAO Register No.: AEIAR- 146/2009*) requiring the implementation of a *Bored Piling Monitoring Programme*. I am writing to confirm that I have reviewed and hereby certified the *Impact Monitoring Report for Underwater Noise and Dolphin Acoustic Behavioural Monitoring* under the *Bored Piling Monitoring Programme* of the Contract.

Yours faithfully
For ERM-Hong Kong, Ltd

Jovy Tam
Environmental Team Leader
Direct Tel: (852) 2271 3113
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ENVIRON

Ref.: HYDHZMBEEM00_0_2524L.14

9 December 2014

AECOM
Supervising Officer Representative's Office
780 Cheung Tung Road,
Lantau, N.T.
Attention: Mr. Daniel Ip

By Fax (3691 2899) and By Post

Dear Mr. Ip,

Re: Agreement No. CE 48/2011 (EP)
Environmental Project Office for the
HZMB Hong Kong Link Road, HZMB Hong Kong Boundary Crossing Facilities, and Tuen Mun-Chek Lap Kok Link – Investigation

Contract No. HY/2012/07
Tuen Mun – Chek Lap Kok Link
Southern Connection Viaduct Section
Impact Monitoring Report for Underwater Noise and Dolphin Acoustic Behavioural Monitoring

Reference is made to the submission *Impact Monitoring Report for Underwater Noise and Dolphin Acoustic Behavioural Monitoring* certified by the ET Leader (ERM reference: 0215660_32_ETL Certification_Underwater Noise Monitoring_v4.docx dated 8 December 2014) provided to us via e-mail on 8 December 2014.

We are pleased to inform you that we have no adverse comment on the captioned Report.

Thank you for your attention. Please do not hesitate to contact the undersigned or the ENPO Leader Mr. Y. H. Hui should you have any queries.

Yours sincerely,

F C Tsang
Independent Environmental Checker
Tuen Mun – Chek Lap Kok Link

c.c. HyD – Mr. Stephen Chan (By Fax: 3188 6614)
HyD – Mr. Matthew Fung (By Fax: 3188 6614)
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CONTRACT NO. HY/2012/07
Tuen Mun – Chek Lap Kok Link (Southern Connection Viaduct Section) Impact Monitoring Report for Underwater Noise and Dolphin Acoustic Behavioural Monitoring

Prepared by Hong Kong Cetacean Research Project (Professor Bernd Würsig, Dr. Katherine Kim, Dr. Marc Lammers, Dr. Lisa Munger and Dr. Samuel Hung)

1 December 2014

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1. INTRODUCTION

The Tuen Mun-Chek Lap Kok Link (TM-CLKL) comprises a 1.6 km long dual 2-lane viaduct section between the Hong Kong Boundary Crossing Facilities (HKBCF) and the North Lantau Highway and associated roads at Tai Ho. Gammon Construction Limited (hereinafter called the "Contractor") was awarded as the main contractor of "Contract No. HY/2012/07 – Hong Kong-Zhuhai-Macao Bridge Tuen Mun-Chek Lap Kok Link – Southern Connection Viaduct Section".

According to Section 6.4.5. of the TM-CLKL EM&A Manual, a bored piling monitoring programme in relation to Chinese white dolphins (a.k.a Indo-Pacific humpback dolphins, *Sousa chinensis*) shall be conducted during baseline and construction phases. These include underwater noise level measurements to evaluate the details of frequency and intensity spectra of the bored piling noise in relation to dolphin acoustic behaviours, and dolphin acoustic behavioural monitoring to record and note any changes in response of dolphins to the bored piling noise. Such monitoring shall be undertaken by qualified dolphin specialists who have sufficient relevant post-graduate experience and publication in the respective aspects. Approval of the specialists responsible for these bored piling monitoring studies shall be sought from AFCD and EPD, and Drs. Bernd Würsig, Marc Lammers, Lisa Munger and Katherine Kim were selected and approved.

This monitoring assessment of underwater noise and dolphin acoustic behaviour details the methodology, and compares the results obtained for the initial baseline phase (26 September to 25 October 2013) with results obtained during the construction phase (3 March to 28 April 2014) to meet the requirement in the particular specification and EM&A Manual.

2. METHODS AND MATERIALS

2.1. Overall Objective and Scheme

For the underwater noise study, the primary objectives were to measure and characterize: (1) baseline ambient noise levels during the pre-construction phase of development; and (2) industrial noise levels associated with bored piling activities during the construction phase. The results obtained from this study, in conjunction with the concurrent dolphin acoustic behavioural and shore-based theodolite tracking studies, would provide guidance with respect to mitigation for the resident dolphin population.

On the other hand, the primary objective of the dolphin acoustic behavioural study was to investigate their acoustic behaviour and movement in response to bored piling sites during both baseline and construction phases. Overall, a set of parameters such as the presence of dolphin acoustic signaling, durations of periods of acoustic activity, relative occurrence of different kinds of signals per unit time and shifts in the time of day of acoustic activity were quantified. Other factors would also need to be measured concurrently during baseline and construction phases in order to understand whether any observed differences in acoustic behaviour of dolphins may represent a reaction to the bored piling works, or are an artifact of other factors.

To achieve this primary goal, the primary approach was to conduct dedicated acoustic surveys of focal follows of Chinese white dolphins in North Lantau with sound recordings taken from a dipping hydrophone deployed from the research vessel, and their movements near the bored piling site were also monitored during focal follow sessions for both baseline and construction phases. These recordings were used to establish baseline acoustic behaviour of the dolphins (e.g. rate of sound production, types of sounds), and its relation to visually determined dolphin group size, behaviour (e.g. foraging, socializing, traveling, milling) and covariates such as the time of day, Beaufort sea state, and occurrence of nearby vessels. Types, distances, and behaviours of vessels will be determined from the recording vessel using laser rangefinder.

A complementary approach for the acoustic data collection was to deploy two sets of ecological acoustic recorders (EARs) near the bored piling site and at a control site for passive acoustic monitoring during both baseline and construction phases. The EARs are bottom-moored, autonomous acoustic recording systems that are used to monitor ambient sounds on a programmable duty cycle (see detailed specifications of EAR in Lammers et al. 2008). They have a programmable bandwidth up to 40 kHz and can be deployed from days to months at a time. Based on past experience in other areas, the effective detection range of EARs on dolphin signals in Hong Kong waters is estimated to be between 500-1,000 metres.

2.2. Monitoring Location

To characterize the local soundscape, underwater sound data collection was conducted mostly in the northeastern waters of Lantau Island during baseline and impact monitoring phases where bored piling activities occurred in association with TM-CLKL construction. Sound measurements were made at various distances from six bored piling sites along the TM-CLKL alignment, to allow estimation of a simple acoustic propagation model for the region where bored piling activities will occur during the construction phase (Figure 1). The numberings and locations of these six bored piling sites to be monitored during baseline phase were listed as follows (some of the bored piling works from different pier sites were conducted concurrently), and three of these six sites (B1, B2 and B3) were chosen for impact phase monitoring from the start of the bored piling activities:

Pier No.	Northing	Easting	Number of Bored Piles	Schedule of Marine Bored Pile Construction
B1	818342	814940	3	February to May 2014
B2	818306	814987	2	March to June 2014
B3	818261	815028	2	April to August 2014
B5	818152	815081	2	May to July 2014
B6	818094	815091	3	June to August 2014
B7	818035	815093	2	July to August 2014

Moreover, the dolphin acoustic behavioural study was conducted concurrently with the underwater noise study mostly in the northeastern waters of Lantau Island where the bored piling activities occurred. For this study, the research vessel would follow a predefined route for systematic search effort in the Northeast Lantau region to cover the area overlapping with the TM-CLKL alignment (Figure 2), where dolphins potentially would be disturbed by the bored piling

works during the construction phase. The acoustic surveys also covered some part of Northwest Lantau waters as control sites during the baseline period, where dolphins would likely be encountered for acoustic data collection but would not be disturbed by the bored piling activities (e.g. Sha Chau, Lung Kwu Chau, Black Point).

The EARs were deployed at two locations: 1) within 500 m of the bridge alignment (Site C1: N22°18.158', E113°58.109), and 2) a control site between Sha Chau and Lung Kwu Chau (Site C2: N22°22.098', E113°52.914'), a less disturbed site relatively far away from the bridge alignment (Figure 2). The site C1 near the bridge alignment is located 230m, 210m and 200m from bored piling sites B1, B2 and B3 respectively. The scientific permit obtained from AFCD to deploy the EAR within the Sha Chau and Lung Kwu Chau Marine Park (i.e. Site C2) is attached with this report.

2.3. Monitoring Methodology

2.3.1. Underwater noise study using dipping hydrophone

The acoustic data were collected on an underwater sound recording system consisting of a high-sensitivity, high-bandwidth hydrophone (International Transducer Corporation ITC-6050c) and two-channel audio recorder (Sound Devices 702T). The hydrophone was deployed from the stern of the research vessel, a deployment scheme sometimes referred to as a "dipping hydrophone", approximately mid-water column at a depth of 5 m beneath a 2 m spar buoy. The hydrophone cable was faired to streamline water flow around the cable, reducing pseudonoise and eliminating cable vibration. The vessel would "go quiet" (its engine, generator, bilge pump, and depth sounder turned off) and drift for the duration of each recording. The recording system and deployment method generally followed that of another well-established study of underwater sounds in Hong Kong waters (Würsig and Greene 2002).

The ITC-6050c is a wide-band hydrophone with a built-in, low-noise preamplifier for optimum noise performance. Its nominal operating band is 30 Hz to 70 kHz, and its self-noise level is well below Knudsen Sea State 0 up to 20 kHz. The hydrophone signal would be amplified as needed via a postamplifier with user-selectable gains from 0 to 60 dB in 10 dB increments. The audio recorder was configured to sample 16-bit data received on each of its two channels at a rate of 192 kHz, thus allowing analysis of the acoustic data up to 96 kHz. According to Section 6.4.5 of the EM&A Manual, "the acoustic results of the monitoring should be analyzed in terms of both the broadband range (100 Hz to 25.6 kHz) and, also, the dolphin sensitive range (400 Hz to 12.6 kHz)." In compliance with the EM&A Manual requirement, the acoustic data collected from the present

underwater noise study was analyzed between 30 Hz and 40 kHz, avoiding a hydrophone resonance frequency at 50 kHz.

Observers would document the recording date, start and end times, hydrophone and water depths, Beaufort sea state, survey area, and postamplifier gain in each recording. Wind speed, often directly correlated with underwater levels, was measured and documented in the survey team's logs. The wind speed measurements were performed with a handheld Kestrel 1000 anemometer, containing an impeller with precision axle and low-friction bearings, providing 0.1 m/s resolution between 0.6–40.0 m/s and an accuracy (calculated using two standard deviations) of the larger of 3% of the reading, least significant digit, or 0.1 m/s.

2.3.2. Dolphin acoustic behavioural study using dipping hydrophone

During dedicated acoustic surveys, the survey team of 2-3 HKCRP researchers conducted systematic search for dolphins within the study area. The survey protocol to search for dolphins was similar to the line-transect survey methodology adopted in the vessel survey under the AFCD long-term marine mammal monitoring programme (Hung 2012, 2013) as well as various HZMB EM&A dolphin monitoring programmes. For each survey, a 15-m inboard vessel with an open upper deck was used to make observations from the flying bridge area, at a visual height of 4-5 m above water surface. The two observers searched with unaided eyes and 7 x 50 marine binoculars ahead of the vessel (between 270^{o} and 90^{o} in relation to the bow, which is defined as 0^{o}). The survey team recorded effort data including time, position (latitude and longitude), weather conditions (Beaufort sea state and visibility), and distance travelled in each series (a continuous period of search effort) with the assistance of a handheld GPS.

When dolphins were sighted, the survey team ended the search effort, and the research vessel was diverted from its course to slowly approach the animals for group size estimation, assessment of group composition, and behavioural observations in the initial 5-10 minutes. The dipping hydrophone was then deployed 3 to 7 metres below the sea surface by 2-metre long spar buoy from the stern of the research vessel, with vessel engine noise off and the vessel drifting. Broadband dolphin recordings were made with the same set of underwater sound recording system as mentioned in Section 2.6.1 (see previous paragraph for detailed description). According to Section 6.4.5 of the EM&A Manual, "the acoustic results of the monitoring should be analyzed in terms of both the broadband range (100 Hz to 25.6 kHz) and, also, the dolphin sensitive range (400 Hz to 12.6 kHz)." Dolphin acoustic data collected from the recording system was analyzed from 100 Hz and up to 40 kHz, which avoided a hydrophone resonance frequency at 50 kHz. This range would

be sufficient to detect the presence of dolphin acoustic signals and their temporal parameters (e.g. click intervals), which is in compliance with the EM&A Manual requirement.

During the dipping hydrophone deployment, the date, start and end times, hydrophone and water depths, Beaufort sea state, survey area, locations, gain, event, and notes were taken for each recording in five-minute intervals. Within each corresponding five-minute interval, observers also noted variables including the group size, group composition and general behaviour during the 5-minute period (i.e. feeding, socializing, travelling, resting, milling and any aerial activity). The number of vessels that passed within 500 m of the dolphin group was recorded during the same 5-minute interval, with special notes on close approaches by vessels within 100 m of dolphins, including the time of closest approach and any behavioural reaction was noted. Distances of vessels were gathered by hand-held laser rangefinder (*Bushnell* Yardage Pro 800; maximum range of detection for most objects: 720 metres; ranging accuracy ± 2 metres under most circumstances). Also, notes were made on the approximate distance (i.e. 0-250m, 250-500m, >500 m) of the dolphin groups to the hydrophone during the 5-minute interval. Notably, positions of dolphin groups were recorded continuously during the entire focal follow session to examine their movements in detail, especially when they occurred in the vicinity of the TM-CLKL alignment.

2.3.3. Passive acoustic monitoring using EARs

Two sets of EARs were deployed at two sites in North Lantau, one near the bored piling site and another at a control site between Sha Chau and Lung Kwu Chau. The EARs were deployed and recovered by a professional dive team from Oceanway Corporation Limited. EAR deployments occurred once during the baseline phase of the project between 26 September and 25 October 2013 and once during the construction phase between 6 March and 4 April 2014. During each deployment, the EAR serial number, as well as the time and date of deployment were recorded. The GPS position, water depth and type of substrate at the deployment location were also recorded.

The EARs were programmed to record on a 20% duty cycle (1 minute “on” for every 5 minutes). Recordings were made from approximately 20 Hz at the low end to 32 kHz at the high end, which effectively covered a major part of the acoustic channel of Chinese White Dolphins (Sims et al. 2011). Data from the EARs were downloaded onto a computer hard disk at the end of each deployment period.

2.4. Data Analysis

2.4.1. Dipping hydrophone data for underwater noise measurement

For both baseline and construction phases of the study, the acoustic data were analyzed for narrowband spectra, one-third-octave band levels, and broadband levels. The levels were tabulated and summarized with respect to various noise contributors including but not limited to vessels, wind, industrial activity, and biological sounds. Due to the transient nature of vessel noise and the highly variable ambient noise levels encountered throughout the study, the estimation of a single baseline noise level representative of the study area was not feasible. However, ambient noise levels were quantitatively characterized and their potential masking effect on dolphin vocalization was discussed. In addition, for the construction phase of the study, construction-related sounds were measured at different distances from bored piling sites to allow estimation of a simple acoustic propagation model for the region where bored piling activities will occur.

2.4.2. Dipping hydrophone data for dolphin acoustic behaviour

To evaluate if dolphin acoustic behaviour varies between baseline and construction phases, a number of parameters were examined during both phases for comparison. For the calibrated hydrophone data, parameters include the duration of acoustic encounters of dolphins and the rates of their whistling and click production (echolocation and burst pulses) per 5 min recording time bin. The rates of sound production as a function of dolphin group size, behavioural state, location and time of day were also examined.

For the comparison of response variables between baseline and construction phases, each 5 min recording time bin was treated as a sample point, providing a measure of the rate of whistling (whistles/min) and click production (clicks/min). The rate of whistling is quantified for each time period by visually and aurally examining individual recordings and logging the presence of signals using the program Raven Pro 1.5™. Click production (echolocation and burst pulses) was quantified using a custom-written click detector program in MATLAB™ R2011b. For the recording periods when the dolphins were more than 500 m away or when they were on the bow of the research vessel, those were excluded from consideration.

To investigate signal production as a function of dolphin group size, the whistling and clicking rates were binned by group size as follows: 1 individual dolphin, 2-5 dolphins, 6-9 dolphins, and 10+ dolphins. The whistling and clicking rates were also similarly grouped by the behavioural categories of milling, traveling, socializing, feeding and resting. Signal production by time of day was investigated by grouping the number of sightings and rates of whistling and clicking occurring in five two-hour periods of data collection (08:00-9:59, 10:00-11:59, 12:00-13:59, 14:00-15:59 and 16:00-17:59). Finally, to examine sound production by location, the GPS coordinates of the first

recording for each sighting were plotted using Google Earth™, and these were divided into two zones based on proximity to the construction area. The recordings were then grouped by zone.

2.4.3. EARs data for passive acoustic monitoring

The data from EARs were analyzed by visually and aurally examining individual recordings. The presence of clicks and/or whistles was used to establish the presence of dolphins near the EAR. Analysts scanned spectrograms of each file in either a 60-second display window (browsing mode) or a 10-second display window (verification mode). Dolphin sounds were confirmed visually and aurally by playing back at reduced speed (usually to ½ original speed, and in some cases ¼ speed).

The occurrence of dolphin signals was used to examine temporal trends in dolphin presence and activity level, and to provide a baseline for future comparison with the construction phase. The number and duration of dolphin encounters was established for each day. Here an encounter is defined as a period of recordings containing dolphin signals in which the interval between detected signals is less than 30 minutes. For example, two recordings with detections separated by 25 minutes would be treated as part of the same encounter, while two recordings with detections separated 40 minutes would be treated as two separate encounters. In addition, the overall acoustic behaviour (not per individual dolphin) was also established and any changes in temporal patterns (e.g. from mostly calling at night, to mostly during the day, or vice versa), or any increase/reduction and change in the average duration of acoustic presence at the location of EAR deployment are compared between baseline and construction phases.

3. RESULTS AND ANALYSES

3.1. Summary of acoustic monitoring effort

3.1.1 Pre-construction phase

Thirty days of acoustic monitoring surveys were conducted between 26 September and 25 October 2013 for the pre-construction period (i.e. baseline period). During this period, 1,894.7 km of survey effort were conducted to search for dolphins in the North Lantau region. From these 30-days of monitoring surveys, 472 underwater sound samples were collected, with 26 hours and 46 minutes of recordings of ambient sound levels and dolphin vocalizations under various environmental conditions and during different times of the day (Appendix II). Moreover, 70 dolphin groups, numbering 301 animals, were encountered during these surveys (Appendix III), and 122 sound samples were taken from some of these dolphin groups (Appendix IV).

3.1.2 Construction phase

Thirty-one days of acoustic monitoring surveys were conducted between 3 March and 28 April 2014 for the construction period (see Appendix I for detailed monitoring schedule). During this period, 1,960.4 km of survey effort were conducted to search for dolphins in the Northeast Lantau region where the TM-CLKL construction activities occurred. From these 31-days of monitoring surveys, 313 underwater sound samples were collected, with 22 hours and 38 minutes of recordings of ambient sound levels and dolphin vocalizations under various environmental conditions and during different times of the day (Appendix II). Only four dolphin groups, numbering eight animals, were encountered during these construction-phase surveys (Appendix III), and 28 sound samples were taken from some of these dolphin groups (Appendix IV).

3.2. Underwater noise study (dipping hydrophone)

3.2.1 Pre-construction phase results

A total of 472 underwater acoustic recordings were available for the underwater noise study. These sound files were quality-checked to assess their suitability for noise analyses. For example, 32 recordings included mid-recording, user-selectable, gain changes which introduced high-frequency artifacts most noticeable above 10–20 kHz. These recordings were discarded so as not to bias the acoustic results with electronic noise. After data quality checking, 440 recordings remained for subsequent noise analyses.

In compliance with Section 6.4.5 of the EM&A Manual, the acoustic data were analyzed in terms of both a “wideband” frequency range of 30 Hz to 40 kHz and a “dolphin-sensitive” frequency range of 400 Hz to 12.5 kHz. Figure 3 depicts the mean bandlevel for each of the 440 recordings for the “wideband” frequency range (shown in red) and the “dolphin band” (shown in blue). Bandlevels were averaged over the duration of each recording, where recording durations ranged from 1 minute, 58 seconds up to 6 minutes, with most recordings around 3 minutes in duration. As seen in Figure 3, wideband levels were always greater than dolphin-band levels, as expected. Mean bandlevel across all recordings (n = 440) was 116.71 ± 6.29 dB re 1 µPa for the wideband case and 112.27 ± 6.36 dB re 1 µPa for the dolphin band case, where “± x.xx” refers to one standard deviation from the mean and indicates the degree of variability in the measurements. In addition, as anticipated, bandlevels varied greatly as a function of time, as illustrated in Figure 3, but also within individual recordings. This variability was due to the numerous transient noise

sources, primarily transiting ships, present in the waters off Hong Kong. According to observer logs and confirmed in the acoustic records, vessel traffic is the greatest contributor to the local soundscape.

Wind and the subsequent sea surface waves it generates are a common and well-known source of ambient noise in the world's oceans. Wind speed was measured directly at the time of each recording, and the related Beaufort sea state was also logged by field personnel. Wind speed measurements (which ranged from 0 to 7.7 m/s) and Beaufort sea states (0 to 5) generally agreed. However, wind speeds were usually quite low, averaging only 2.61 ± 1.39 m/s, and no correlation was found between wind speed and mean bandlevels, with a Pearson's correlation coefficient of 0.05 (see Figure 4). The lack of correlation can be attributed to a number of factors: low wind speeds, deviation from wind-generated ambient noise models due to the shallow waters, and masking by other noise sources. The latter is especially relevant given the high shipping density in the region and the fact that wind and shipping noise compete in similar frequency bands (i.e., order tens to hundreds of Hz).

The potential effect of tides on ambient sound levels was also investigated. Tidal height, and by proxy, tidal current, can contribute to background noise levels in the form of, e.g., rolling gravel or similar on the seafloor, but often takes the form of "pseudo-noise", i.e., flow noise, which contaminates underwater measurements. Figure 5 shows predicted tidal heights and measured bandlevels throughout the study. No significant correlation was found between tidal height and mean bandlevels (Pearson's correlation coefficient of 0.10). The recording system, by design, employed a spar buoy and faired hydrophone cable to mitigate cable tension and flow noise, so no tidal effects were expected.

Of the 440 recordings utilized in the ambient noise study, 122 recordings contained dolphin vocalizations. The mean bandlevels for these recordings containing dolphin vocalizations are shown in Figure 6. Average bandlevel across these recordings was 118.44 ± 5.88 dB re 1 µPa and 114.94 ± 5.26 dB re 1 µPa for the wideband frequency range (red) and dolphin band (blue), respectively. By comparison, recordings without dolphin vocalizations (n = 318) had average bandlevels of 116.04 ± 6.33 dB re 1 µPa and 111.24 ± 6.46 dB re 1 µPa for wide and dolphin frequency bands, respectively. Mean bandlevel was calculated across the entire recording and the bandwidth as indicated, regardless of the duration and frequency extent of detected dolphin vocalizations. Consequently, bandlevels for the recordings containing dolphin vocalizations may not be representative of received levels of individual dolphin vocalizations, and likely contain other

sound sources such as vessels, and, therefore, should be interpreted with caution. However, the large sample sizes and over 3 dB difference in average bandlevels with and without dolphin vocalizations, notably manifest in the dolphin band, suggest that dolphin vocalizations can contribute significantly to the soundscape.

Field personnel documented actively operating industrial activity that might contribute sound energy received by the recording system. Figure 7 shows mean bandlevels for recordings annotated with such industrial sound sources (n = 97), specifically, fishing activity (depicted as triangles), dredging (depicted as squares), and other general industrial activity (depicted as stars). As in previous figures, red represents analyses over the wideband frequency range and blue the dolphin-sensitive band. Figure 7 shows broadband received levels and provides only a very rough indication of broadband source levels of various industrial activities. Received levels are a function of source-to-receiver range, and distances to sound sources shown in Figure 7 ranged from a gillnet fishing vessel operating 99 m from the hydrophone to dredging operations 1153 m away. Furthermore, the mean bandlevel was calculated across the entire recording, and thus, measured sound levels represent other concurrent sound sources, such as the many vessels documented during these recordings and/or potential dolphin vocalizations. Vessels were present in all of Figure 7's recordings of industrial activity, and, out of those 97 recordings, dolphin vocalizations were detected in ten of them, notably nine of which involved fishing activity. Estimating source levels of aforementioned industrial activity or of specific vessels is beyond the scope of this study. However, Figure 7 does show received sound levels containing concurrent industrial activity and unequivocally illustrates the high rate of occurrence of such activity.

The soundscape's time variability is demonstrated in Figure 8 in which mean bandlevels for all 440 recordings are shown as a function of time of day, represented by 12 two-hour periods. Red and blue represent the wideband frequency range and "dolphin-sensitive" band, respectively, and, as expected, wideband bandlevels are always higher than dolphin-band bandlevels. During the study's October timeframe, sunrise occurred at ~0600 HKT and sunset at ~1800 HKT. Figure 8 shows increased sound levels between sunrise and sunset. Sample sizes are indicated by the numbers above each bar in the histogram. A bias might be present due to the relatively small sample sizes outside daytime hours (n = 82, as compared to the sample size in daytime hours (n = 358)), but increased sound levels during daytime hours may also be attributed to increased vessel traffic, fishing, construction, and other anthropogenic activity more likely to occur during the day.

During the impact phase of this study, sounds associated with bored piling activity were

measured and subsequently modeled for comparison to baseline phase ambient noise measurements. For the baseline phase, sound levels were measured at different distances from proposed bored piling pier locations on 3 October , 8 October, 11 October, 15 October, and 21 October 2013. The resultant mean bandlevels are given in Table 1 for bandlevel calculations over the wideband frequency range and over the dolphin-sensitive band (approximately 114 dB re 1 µPa and 108 dB re 1 µPa, respectively). As one might expect, devoid of any nearby sound sources different from those encountered elsewhere in the study area during the baseline phase in the absence of any bored piling activity, mean bandlevels and their variability were similar to other measurements in the environment (refer to Figure 3) and were the same value (within a standard deviation) regardless of source-to-receiver range. If construction-related sounds exceed ambient noise levels during the impact phase of the study, one will expect to see a monotonic decrease in sound levels on the order of 10logR to 20logR, where R is the range between the sound source and recording hydrophone.

3.2.2 Construction phase results

A total of 313 underwater acoustic recordings, collected between 3 March and 28 April 2014, were available for the construction phase, underwater noise analyses. These sound files were quality-checked to assess their suitability for noise analyses. For example, 22 recordings included mid-recording, user-selectable, gain changes that introduced high-frequency artifacts most noticeable above 10–20 kHz. These recordings were discarded so as not to bias the acoustic results with electronic noise. After data quality checking, 291 recordings remained for subsequent noise analyses.

In compliance with Section 6.4.5 of the EM&A Manual, the acoustic data were analyzed in terms of both a “wideband” frequency range of 30 Hz to 40 kHz and a “dolphin-sensitive” frequency range of 400 Hz to 12.5 kHz. Figure 9 depicts the mean bandlevel for each of the 291 recordings for the “wideband” frequency range (shown in red) and the “dolphin band” (shown in blue). Bandlevels were averaged over the duration of each recording, where recording durations ranged from 1 minute, 30 seconds up to 7 minutes, with most recordings around 5 minutes in duration. As seen in Figure 9, wideband levels were always greater than dolphin-band levels, as expected. Mean bandlevel across all recordings (n = 291) was 122.80 ± 8.55 dB re 1 µPa for the wideband case and 117.10 ± 8.67 dB re 1 µPa for the dolphin band case. These average bandlevels were ~5–6 dB greater than those measured during the baseline phase of the study (116.71 ± 6.29 dB re 1 µPa and 112.27 ± 6.36 dB re 1 µPa, respectively). In addition, as anticipated, bandlevels varied greatly as a function of time, as illustrated in Figure 9, but also within individual recordings. This variability was due to the numerous transient noise sources, primarily transiting ships, present

in the waters off Hong Kong. According to observer logs and confirmed in the acoustic records, vessel traffic is the greatest contributor to the local soundscape.

Wind and the subsequent sea surface waves it generates are a common and well-known source of ambient noise in the world's oceans. Wind speed was measured directly at the time of each recording, and the related Beaufort sea state was also logged by field personnel. Wind speed measurements (which ranged from 0.2 to 9.5 m/s) and Beaufort sea states (1 to 5) generally agreed. However, as in the study's baseline phase, wind speeds were usually quite low, averaging only 2.83 ± 1.79 m/s, and no correlation was found between wind speed and mean bandlevels, with a Pearson's correlation coefficient of 0.12 (see Figure 10). The lack of correlation can be attributed to a number of factors: low wind speeds, deviation from wind-generated ambient noise models due to the shallow waters, and masking by other noise sources. The latter is especially relevant given the high shipping density in the region and the fact that wind and shipping noise compete in similar frequency bands (i.e. order tens to hundreds of Hz).

The potential effect of tides on ambient sound levels was also investigated, as they were in the study's baseline phase. Tidal height, and by proxy, tidal current, can contribute to background noise levels in the form of, e.g., rolling gravel or similar on the seafloor, but often takes the form of "pseudo-noise", i.e., flow noise, which contaminates underwater measurements. Figure 11 shows predicted tidal heights and measured bandlevels throughout the study. Tidal information was obtained from the Hong Kong Observatory's Chek Lap Kok Station (www.hko.gov.hk/tide/eCLKtide.htm). As in the baseline phase, no significant correlation was found between tidal height and mean bandlevels (Pearson's correlation coefficient of 0.07). The recording system, by design, employed a spar buoy and faired hydrophone cable to mitigate cable tension and flow noise, so no tidal effects were expected.

The soundscape's time variability is demonstrated in Figure 12 in which mean bandlevels for all 291 recordings are shown as a function of time of day, represented by 12 two-hour periods. Red and blue represent the wideband frequency range and "dolphin-sensitive" band, respectively, and, as expected, wideband bandlevels are always higher than dolphin-band bandlevels. During the study's March through April timeframe, sunrise occurred around roughly 06:00 and sunset around roughly 18:30. Figure 12 shows increased sound levels between sunrise and sunset. Sample sizes are indicated by the numbers located above each bar in the histogram. A bias might be present due to the relatively small sample sizes outside daytime hours (n = 26 compared to n = 265, for 18:30–06:00 inclusive), but increased sound levels during daytime hours may also be

attributed to increased vessel traffic, construction, and other anthropogenic activity more likely to occur during the day. For example, the substantially higher sound level during the 18:00–20:00 time period is attributable to two recordings on 20 March 2014 at 18:00:30–18:05:30 and 18:10:30–18:14:26, during which mean received sound levels were estimated to be 142.0 and 145.3 dB re 1 µPa, respectively. During this time, the scientific support vessel to which the hydrophone was tethered drifted at a distance of 524–552 m and 344–389 m, respectively, from a construction platform and nearby construction boat "M012". In both cases, piling for the working platform was underway. Concurrently, two sampans, two transportation boats, one high-speed ferry, and one speed boat transited through the immediate area. The closest-point-of-approach (CPA) for the speed boat was 213 m, the sampans 279 m and 431 m, the transportation boats <418 m and <566 m, and the high-speed ferry ~638 m.

A primary objective of this study was to measure and empirically model sounds associated with bored piling activity and to compare those results with the study's baseline phase ambient noise measurements. Table 1 summarizes the ambient sound levels measured at varying distances from bored piling pier locations over five days of the baseline phase of the study. The mean bandlevels given in Table 1 are approximately 114 dB re 1 µPa and 108 dB re 1 µPa for the wideband frequency range and for the dolphin-sensitive band, respectively. Throughout the construction phase of this study (over 31 days), sounds levels were measured at different distances from bored piling pier locations B1, B2, and B3, and concurrent construction-related activity associated with bored piling was noted in log files. Typical sequence construction-related bored piling activities included pre-drilling, casing, soil grabbing, welding, reversed circulation drilling (RCD), air lifting, caging, and concreting. Brief explanations of these activities are as follows:

- *Predrilling*
  Predrilling involves site investigation work to determine the founding level prior to construction of the bored pile.

- *Casing*
  A metal case of designed diameter is vertically sunk by a vibratory hammer at the bored pile location, and excavation (see *soil grabbing* below) is carried out inside the casing.

- *Soil grabbing*
  Marine deposits and alluvial clay inside the casing is removed by a mechanical grab until the grab reaches the rock strata.

- *Welding*
  Piles are welded together for approaching the target depth.

- *Reverse Circulation Drill (RCD)*
  Upon reaching the rock strata, the RCD is used to form the rock socket.

- *Airlifting*
  Airlifting is a process of cleaning the pile base by flushing with water, which is desisted and recycled in the airlifting process.

- *Caging*
  Steel reinforcement, an integral part of the bored pile structure, is fabricated off-site and vertically lowered into the pile bore by crawler crane.

- *Concreting*
  Concrete is poured by underwater tremie method to form the bored pile structure.

Although differentiated in Table 2, locations B1, B2, and B3 were anticipated to yield similar received sound levels due to their close proximity to each other (59.2 m between B1 and B2, 60.9 m between B2 and B3) and, thus, similar acoustic propagation environments. Furthermore, although not anticipated prior to the field study, different bored piling activities at locations B1, B2, and B3 were often underway at the same time, prohibiting isolation of one bored piling sound source from another. The hypothesized similarity among the three pier locations is supported by comparing the sound levels for B1, B2, and B3 in Table 2. Considering piers B1, B2, and B3 collectively, the sample size for each construction activity ranged from nine to 44 acoustic records. Table 2 lists the mean wideband and dolphin band sound levels measured during each type of bored piling activity, with sample sizes noted parenthetically. Average bandlevels for all measurements represented in Table 2 are 125.02 ± 5.30 dB re 1 µPa and 118.68 ± 5.53 dB re 1 µPa for the wideband frequency range and for the dolphin-sensitive band, respectively. Note that the measurements in Table 2 encompass multiple source-to-receiver distances (and assumes the source in question is the noted bored piling activity) and are not indicative of source levels. They do illustrate, however, the relatively small variation among and within measurements of different bored piling activities, as well as of measurements among pier locations. This assumes the source in question is the noted construction activity at a given pier location; since different bored piling activities were often conducted concurrently at B1, B2 and B3 pier locations, this is a necessary assumption. The measurements in Table 2 also indicate that average bandlevels in the vicinity of the construction site during the study's construction phase were consistently higher than those during the study's baseline phase. In addition, the variability in bandlevels, in terms of standard deviation from the mean value, was also generally greater for the study's construction phase compared to the baseline phase.

The bored piling sound measurements of Table 2 are shown in Figure 13 (for pier B1). Figure 14a (for pier B2) and Figure 14b (for pier B3) as a function of range, or distance between the given bored piling pier location and the hydrophone. SPL as a function of distance for pier B3 was similar to that for B1 and B2. Specifically, the shape of the SPL-versus-range curve was roughly flat, and SPL values ranged from ~120 to ~140 dB re 1 µPa for the three bored piling activities measured at pier B3, namely, soil grabbing, welding, and pre-drilling activities. Table 3 lists the sample sizes for each circle shown in Figures 13, 14a and 14b. For each type of construction activity, opportunistic measurements were made at a variety of ranges from the pier location(s), from tens of meters to hundreds of meters, sufficient for estimating an empirically-derived propagation model. In Figures 13 and 14, the highest received sound level of 148.0 dB re 1 µPa (dolphin band; 155.6 dB re 1 µPa, wideband) was measured at a distance of 50 m from RCD activity. However, the seven remaining acoustic records for RCD activity at or closer in range were substantially lower in sound level: 119.2–131.6 dB re 1 µPa (dolphin band; 123.3–136.8, wideband), suggestive that the 148.0/155.6 dB re 1 µPa measurement was not indicative of RCD activity but was likely due to a different, non-bored-piling-related, concurrent sound source. Indeed, during the recording in question, the CPA of one tug boat was 164 m, and four sampans were observed within 16–63 m of the hydrophone.

Noteworthy is the shape of each colored curve representing a different construction activity. Each curve was fitted to an acoustic propagation model of the form:

$$SPL = C_1 + C_2 \log(R) + C_3 R$$

where SPL is in units of dB re 1 µPa for a given range R in meters between the sound source and recording hydrophone and regression coefficients C_1, C_2, and C_3. The second, logarithmic term in the above equation represents spreading loss for the study site. For this shallow-water environment, it was anticipated that the second term would be a combination of spherical (20logR) and cylindrical spreading (10logR), a result of reflection, absorption, and refraction of sound energy in this waveguide. The third, linear term represents scattering and absorption losses in the seawater and sub-bottom and at seafloor and sea surface interfaces. If the transient bored piling-related noise emanating from the pier locations exceeded current ambient sound levels, one would expect to see a monotonic decrease in sound levels on the order of 10logR to 20logR. However, as one can surmise by the shape of the curves in Figures 13 and 14, the regression never yielded physically meaningful values for C_2 between -20 and -10. In other words, the range dependence of received levels was weak, i.e., the curve fits did not consistently extrapolate back to a louder-than-ambient source level, which suggests that bored piling noise was quiet relative to ambient noise levels.

To eliminate the possibility of daily variability on the soundscape affecting the empirical model, regression fits were also performed for data collected on a daily basis; nevertheless, estimated C_2 values remained outside acceptable values. This suggests that bored piling sounds did not exceed ambient noise levels. Instead, the acoustic records obtained concurrent with bored piling activities were likely dominated by other sound sources, e.g., transiting vessels. Observer logs noted the presence of numerous vessels throughout the recordings: ferries, container ships, fishing boats, tug boats, police vessels, and so on, as well as occasional construction-related vessels. Attempts to parse the acoustic data to isolate construction sounds of interest proved futile due to the large number of transient sound sources whose presence in the audio files often did not correspond to the timing of visual observations of vessels. In addition, concurrent sound energy from nearby construction-related noise (some related to bored piling efforts, others not) prohibited isolation of one construction-related sound source from another. Consequently, the sound levels reported herein were calculated across the full extent of each acoustic record, including all transients. While this approach does not produce estimates of sound levels indicative of individual bored piling activities (which would be impossible to estimate when bored-piling-related sounds are masked by other sound sources and/or occurring concurrently), one can conclude from these measurements that the soundscape is dominated by vessel noise, and bored piling sounds in this environment are negligible.

3.3. Dolphin acoustic behavioural study (dipping hydrophone)

3.3.1 Pre-construction phase results

A total of 629 recording minutes were made. Figure 15 shows the number of recording minutes summed for each day, as well as the number of sightings per day. Recordings were obtained on all but 8 days of the 31-day period. The daily number of 5-minute recordings ranged between 0 and 15 (mean = 4.4, stdv = 4.1) and the daily number of minutes recorded was between 0 and 73.4 (mean = 21.0, stdv = 20.1).

Whistling and clicking rates were determined for all recordings (n =131). Figure 16 shows the daily rate of click and whistle production recorded. The mean daily whistling rate was 2.8 whistles/min (stdv = 3.9) and the mean click production rate was 165.9 clicks/min (stdv = 100.0).

The variability of whistling and clicking rates was examined as a function of group size, behavioural state, time of day, Beaufort sea state and location within the study area. Figure 17 shows the rate of both click and whistle production as a function of group size. The rate of

whistling generally increased with group size while the rate of click production did not vary much. In Figure 18 the rate of signaling is represented in relation to the dolphins' observed behavioural state during the recording period. Milling was the most common behavioural state noted. Whistling rates did not vary greatly across behavioral states. However, the rate of click production was greatest when the animals were observed socializing.

The greatest number of recordings were made during the 12:00-13:59 time period (n = 52), followed by the 10:00-11:59 period (n = 35), the 14:00-15:59 period (n = 27), the 16:00-17:59 period (n = 11), the 8:00-9:59 period (n = 5) and lastly the 18:00-19:59 period (n = 1) (Figure 19). Not counting the 18:00-19:59 time period, which had only one recording, the lowest and highest rates of click production occurred in the morning period from 8:00 to 9:59 and the afternoon period from 14:00 to 15:59, respectively. Whistling rates, on the other hand, were lowest during the middle of the day from 12:00 to 13:59 and highest in the afternoon from 14:00 to 15:59. Notably, the daily monitoring effort has been held consistent throughout the entire monitoring period. However, the recording effort largely depended upon the time of dolphin occurrence and whether they were available for recording. Therefore, no bias was introduced in the monitoring and recording effort throughout the day, which may be related to the observed asymmetry in peak rates of whistling and clicking during the day.

A total of 117 recordings were made with vessels transiting nearby. Of these, 17 were with vessels between 0 and 99 m at the closest approach, 26 were between 100 and 199 m, 14 were between 200 and 299 m, 13 between 300 and 399 m, 11 between 400 and 499 m, and 36 were 500 m or further away. There was a wide variation in both clicking and whistling rates for vessels at all six range categories (Figure 20). No specific conclusions can be drawn about the effects of vessel distance on signaling rate from these data.

Recordings were collected in Beaufort sea states (BSS) ranging from 1 to 5. There were 8 recordings made in BSS 1, 77 recordings in BSS 2, 41 recordings in BSS 3, 4 recordings in BSS 4, and 1 recordings in BSS 5. Whistling rates decreased with increasing BSS. Clicking rates were equivalent between BSS 2 and 4, and were highest in BSS 5 (Figure 21). However, only one recording was made in BSS 5, so it must be considered an outlier and not necessarily representative of a change in the dolphins' acoustic behavior.

The location of each recording and the division of the study area into two zones are shown in Figure 22. Zone 1b includes the construction area, while Zone 1a is to the west of the construction

area. An approximately equal number of recordings were made in Zones 1a (n = 65) and 1b (n = 66). The rates of clicking were equivalent between Zones 1a and 1b (Figure 23). However, considerably more whistles were recorded in Zone 1b. This difference was highly significant (Mann-Whitney U Test, U = 849.5, $p < 0.001$).

3.3.2 Construction phase results

A total of 185 recording minutes were made. Figure 24 shows the number of recording minutes summed for each day, as well as the number of sightings per day. Recordings were obtained on only 4 days of the 31-day period. The daily number of 5-minute recordings ranged between 0 and 10 (mean = 0.9, stdv = 2.5) and the daily number of minutes recorded was between 0 and 51.1 (mean = 0.003, stdv = 0.009).

Whistling and clicking rates were determined for all recordings (n =28). Figure 25 shows the daily rate of click and whistle production recorded. The mean daily whistling rate was 1.1 whistles/min (stdv = 4.5) and the mean click production rate was 10.1 clicks/min (stdv = 35.5).

The variability of whistling and clicking rates was examined as a function of group size, behavioural state, time of day, Beaufort sea state and location within the study area. Figure 26 shows the rate of both click and whistle production as a function of group size. The rates of both whistling and click-production increased with group size. In Figure 27, the rate of signaling is represented in relation to the dolphins' observed behavioural state during the recording period. Milling was the most common behavioural state noted, with only four recording periods representing the remaining three behavioural categories. Whistling rates and click-production rates were greatest during socializing, but this is based on only one recording period.

The greatest number of recordings were made during the 12:00-13:59 time period (n = 18), followed by the 10:00-11:59 period (n = 6), and the 14:00-15:59 period (n = 4). No recordings were made during the 8:00-9:59, the 16:00-17:59 or the 18:00-19:59 periods (Figure 28). The highest rates of both whistle and click production occurred in the mid-day period from 12:00 to 13:59. The lowest rates of both whistle and click production occurred in the morning period from 10:00 to 11:59. Notably, the daily monitoring effort was held consistent throughout the entire monitoring period. However, the recording effort largely depended upon the time of dolphin occurrence and whether they were available for recording. Therefore, no bias was introduced in the monitoring and recording effort throughout the day that could explain the observed asymmetry in peak rates of whistling and clicking during the day.

A total of 25 recordings were made with vessels transiting nearby. Of these, 5 were with vessels between 100 and 199 m at the closest approach, 4 were between 200 and 299 m, 2 were between 300 and 399 m, 3 between 400 and 499 m, and 11 were 500 m or further away. No recordings were made with vessels at distances between 0 and 99 m. The highest rates of whistling and click production occurred with vessels 300-399 m away (Figure 29). However, the recording sample sizes at the various distance categories were too small to draw any specific conclusions about the effects of vessel distance on signaling rate from these data.

Recordings were collected in Beaufort sea states (BSS) ranging from 1 to 3. There were 8 recordings made in BSS 1, 14 recordings in BSS 2, and 6 recordings in BSS 3. Click production rates decreased with increasing BSS. Whistling rates were highest in BSS 2 and lowest in BSS 3 (Figure 30).

As the survey effort was primarily conducted in the northeastern waters of Lantau during the construction phase, all 28 recordings made during the construction phase of the project were made in Zone 1b, which includes the construction area. Figure 31 shows the mean rates of whistling and click production in Zone 1b during this period.

3.3.3 Pre-construction and construction phase comparison of hydrophone data

Almost five times the total number of recordings were made during the pre-construction phase (n = 131) as during the construction phase (n = 28), reflecting a significantly lower sighting rate during the latter period (Mann-Whitney U Test on # encounters per day, $Z = 5.099$, $p < 0.001$). The average number of encounters per day during pre-construction phase was 1.70 (SD = 1.37), and the average number of encounters per day during construction phase was 0.13 (SD = 0.35). The summed length of recordings obtained on days when dolphins were encountered was approximately equivalent between project phases (Figure 32). However, the average dolphin group sizes encountered between the pre-construction and construction phases were 3.5 (S.D. = 1.6) and 1.9 (S.D. = 1.0), respectively, indicating that dolphin group sizes were smaller during the construction phase.

Comparisons of whistling and clicking rates were made, respectively, between the pre-construction and construction phases as a function of behavioral state (Figure 33), group size (Figure 34), the distance to the nearest vessel (Figure 35) and the time of day (Figure 36). Differences between pre-construction and construction phases are noted in the whistle and/or click

production rates of dolphins among several of these variables. However, the small sample size of data obtained during the construction phase (only 4 encounters) compared to the pre-construction phase (51 encounters) does not warrant drawing conclusions based on statistical inference. Therefore, any differences recorded in these comparisons of whistling and click rates between the two phases of the study must be viewed with caution, as these may be artifacts of the small sample sizes obtained during the construction phase.

Lastly, Figures 37a and 37b show the averaged daily whistling and clicking rates, respectively, for both phases of the study. The highest rate of whistling was recorded during a construction-phase encounter that occurred on 17 March 2014. This was an otherwise unremarkable encounter of three dolphins that were mostly milling. The other encounters during the construction phase had whistling and click production rates that were consistent with rates observed during the pre-construction phase.

3.4. Passive acoustic monitoring (EARs)

3.4.1 Pre-construction phase results

The EAR at Bridge Alignment Area (Site C1) was deployed between 27 September and 5 November, 2013 for a total of 40 days. It yielded 11,446 one min recordings totaling 190 hours of data. The EAR at Sha Chau (site C2) was also deployed between 27 September and 5 November 2013 for 40 days and recorded 11,464 one min files. However, per contractual agreement, only the first 30 days of collected EAR data, between 27 September and 26 October 2013, were considered for analysis. The total number of files analyzed for each site was 8640 one-minute recordings (288 files per day for 30 days), equivalent to 144 hours of data.

3.4.1.1 Site C1 – Bridge Alignment Area

Dolphin signals were detected on 26 out of 30 days of EAR recordings at this site. Figure 38 shows the percentage of files for each day (288 recordings per day) that contained dolphin signals. Daily dolphin acoustic activity was low, with between 0% and 4.5% of recordings containing dolphin signals any given day. Figure 39 shows the number of dolphin encounters (as defined in section 2.7.3) and the average duration of encounters for each day of the deployment period. There were an average of 4.0 encounters per day (S.D. = 3.5) at site C1, which lasted and average of 1.9 min (S.D. = 3.6).

Figure 40 shows the occurrence of dolphin acoustic signals in EAR recordings at site C1 as a function of the hour of the day. All detections were of dolphin click trains. No detections were

made of dolphin whistles. Two possible explanations for this are that in this area a) dolphins engage in little or no socializing activities (typically characterized by whistling), or b) ambient and/or anthropogenic noise in the frequency bands associated with whistles (4-12 kHz) masked any whistles that were present. However, a comparison of the ambient noise levels at sites C1 and C2 revealed that the average root-mean-square (RMS) sound pressure levels (SPLs) in the 4-8 kHz and 8-16 kHz bands were 95.4 dB (S.D. = 1.7) and 95.4 dB (S.D. = 2.2), respectively at site C1, and 96.8 dB (S.D. = 1.8) and 96.3 dB (S.D. = 1.7), respectively at site C2. Since these ambient noise levels are very similar at both sites and dolphin whistles were regularly detected at C2(see section 3.4.2 below), it is highly unlikely that masking by noise at site C1 was the principal reason why whistle detections were absent at this location. Consequently, it can be assumed that dolphins likely do not produce many whistles at or near site C1 and that the amount of any noise masking is not greater than at site C2.

Approximately 54% of detections occurred during the nighttime period between 19:00 and 6:59 and 46% occurred during the day between 7:00 and 18:59. There were no distinct peaks in acoustic activity throughout the 24-period. Rather, there was a low level of acoustic activity during all hourly periods.

Figure 41 shows the RMS SPL in 1-octave bands and full bandwidth, averaged hourly at site C1. The ambient noise level was highest in the 0-2 kHz frequency band, which was driven by vessel traffic, and lowest between 2-4 kHz (mean and standard deviation 102.8 dB re 1 µPa (SD = 5.3) and 91.9 dB re 1 µPa (SD = 2.4), respectively). There was a sudden and unexpected decrease in the ambient noise levels between 2-32 kHz beginning on 5 October. It is presently unclear what caused this sudden change, but it may have resulted from either a perturbation of the nearby benthic fauna or a shift in sea surface conditions (see discussion below). At site C1, the average full-band RMS SPL measured was 105.6 dB re 1 µPa (S.D. = 2.6) during the pre-construction phase.

3.4.1.2 Site C2 – Between Lung Kwu Chau and Sha Chau

Dolphin signals were detected on all 30 days of EAR data that were recorded at site C2. Figure 42 shows the percentage of files for each day (288 recordings per day) that contained dolphin signals. Daily dolphin acoustic activity was variable, with between ~1% and 28% of recordings containing dolphin signals any given day. Figure 43 shows the number of dolphin encounters (as defined in section 2.7.3) and the average duration of encounters for each day of the deployment period. There were an average of 8.6 encounters per day (S.D. = 2.0) at site C2, which lasted an average of 25.0 min (S.D. = 14.3).

Figure 44 shows the occurrence of dolphin acoustic signals in EAR recordings as a function of the hour of the day. Although the majority of detections at site B2 were also of click trains, whistles were also regularly detected at this site. In addition, there was only a weak diel trend in the occurrence of detections, with approximately 53% of click train detections and 60% of whistle detections occurring during the nighttime period between 19:00 and 6:59. The peak number of detections occurred between 07:00 and 08:59.

Figure 45 shows the root-mean-square (RMS) sound pressure level (SPL) in 1-octave bands and full bandwidth averaged hourly at site C2. Average noise levels for each octave band for the entire deployment ranged from 93.3 to 96.7 dB re 1 µPa (SD 2.0 - 4.8) and were within 3 dB re 1 µPa across all frequency bands between 0-32 kHz. The average full-band RMS SPL was 102.8 dB re 1 µPa (S.D. = 1.8) during the pre-construction phase. However, SPLs in the 0-2 kHz band exhibited daily variations of up to 14 dB due to noise contributions from vessels and a biological evening chorus produced by one or more unknown species of fish and/or invertebrates. Overall, broadband noise levels above 2 kHz were higher at site C2 than at C1, but levels below 2 kHz were higher at C1 due to a greater daytime noise contribution from vessel traffic.

3.4.2 Construction phase results

The EAR at the Bridge Alignment Area (Site C1) collected data between 6 March and 28 April 2014 for a total of 54 days. It yielded 11,455 one min recordings totaling 191 hours of data. The EAR at Sha Chau (site C2) also collected data between 6 March and 28 April 2014 for 54 days and recorded 15,767 one min files. However, per contractual agreement, only the first 30 days of collected EAR data, between 6 March and 4 April 2014, were considered for analysis. The total number of files analyzed for each site was 8640 one-minute recordings (288 files per day for 30 days), equivalent to 144 hours of data.

3.4.2.1 Site C1 – Bridge Alignment Area

Dolphin signals were detected on only 5 out of 30 days of EAR recordings at this site. Figure 46 shows the percentage of files for each day (288 recordings per day) that contained dolphin signals. Daily dolphin acoustic activity was very low, with between 0% and 0.4% of recordings containing dolphin signals any given day. Figure 47 shows the number of dolphin encounters (as defined in section 2.7.3) and the average duration of encounters for each day of the deployment period. There were an average of 0.17 encounters per day (S.D. = 0.38) at site C1, which lasted an average of 0.83 min (S.D. = 1.9).

Figure 48 shows the occurrence of dolphin acoustic signals in EAR recordings at site C1 as a function of the hour of the day. Detections were made of both dolphin whistles and click trains. All five detections were made during daytime hours, primarily in the morning between 8:00 and 10:00.

Figure 49 shows the RMS SPL in 1-octave bands and full bandwidth averaged hourly at site C1. The ambient noise level was highest in the 0-2 kHz frequency band, which had an average RMS SPL over the entire data collection period of 104.7 dB re 1 µPa (S.D. = 9.2), likely driven by vessel traffic. Average RMS SPL for the other frequency bands ranged from 93.1 to 98.5 dB re 1 µPa (S.D. 2.6 - 4.1), and the average full-band RMS SPL measured at C1 was 108.1 dB re 1 µPa (S.D. = 5.8) during the construction phase. Unlike during the pre-construction phase, no sudden change was observed in the ambient noise levels between 2-32 kHz. Rather, a diel pattern of increase in the 0-2 kHz acoustic energy band was recorded, which was tied to bridge construction activities. Noise began to increase at approximately 7:00, decreased for an hour at 12:00, and then persisted until approximately 18:00.

3.4.2.2 Site C2 – Between Lung Kwu Chau and Sha Chau

Dolphin signals were detected on all 30 days of EAR data that were recorded at site C2. Figure 50 shows the percentage of files for each day (288 recordings per day) that contained dolphin signals. Daily dolphin acoustic activity was variable, with between ~2% and 16% of recordings containing dolphin signals any given day. Figure 51 shows the number of dolphin encounters (as defined in section 2.7.3) and the average duration of encounters for each day of the deployment period. There were an average of 7.0 encounters per day (S.D. = 3.1) at site C2, which lasted and average of 16.0 min (S.D. = 9.6).

Figure 52 shows the occurrence of dolphin acoustic signals in EAR recordings as a function of the hour of the day. The vast majority of detections at site C2 were of click trains. Whistles were only rarely detected during this deployment. There was a moderate diel trend in the occurrence of detections, with approximately 62% of click train detections and 67% of whistle detections occurring during the nighttime period between 19:00 and 6:59. The peak number of detections occurred between 19:00 and 21:00.

Figure 53 shows the root-mean-square (RMS) sound pressure level (SPL) in 1-octave bands and full bandwidth averaged hourly at site C2. Average noise levels for each frequency band

ranged from 93.4 to 99.9 dB re 1 µPa (S.D. 1.9 - 6.1) and were within 3-4 dB re 1 µPa of each other across all frequency bands between 0-32 kHz. At site C2, the average full-band RMS SPL measured was 104.3dB re 1 µPa (S.D. = 3.3) during the construction phase. A diel pattern of increase in the 0-2 kHz acoustic energy band began in late March. During this period, low frequency acoustic energy peaked between approximately 16:00 and 19:00. It is presently unclear what source(s) contributed to this diel increase, but likely candidates are vessel noise and a biological evening chorus produced by one or more unknown species of fish and/or invertebrates. Overall, broadband noise levels above 2 kHz were lower at site C2 than at C1, especially below 2 kHz.

3.4.3 Pre-construction and construction phase comparison of EAR data

Differences were present between the EAR data obtained during the pre-construction and construction phases at both monitoring sites. Figures 54a and 54b show the daily percentage of recordings with dolphin signals present during both phases of the study at C1 and C2, respectively. Significantly fewer files contained dolphin detections during the construction phase at both C1 (Mann-Whitney U Test, $Z = 5.322$, $p < 0.001$) and C2 (Mann-Whitney U Test, $Z = 3.896$, $p < 0.001$) (statistical parameters and results summarized in Table 4). Similarly, the numbers of encounters (as defined in section 2.4.2) were fewer at both sites during the construction phase (C1: Mann-Whitney U Test, $Z = 5.322$, $p < 0.001$; C2: Mann-Whitney U Test, $Z = 2.587$, $p = 0.01$) (Table 4). The encounter durations were not significantly different at C1 between project phases (Mann-Whitney U Test, $Z = 1.108$, $p = 0.267$), but were lower during the construction phase at C2 (Mann-Whitney U Test, $Z = 2.964$, $p = 0.003$) (Table 4).

Although differences in dolphin activity were observed at both monitoring locations between project phases, the magnitude of change was not equivalent between sites. At site C1 (Bridge Alignment Area) the mean daily percentage of recordings with detections changed from 1.61% (S.D. = 1.46) to 0.05% (S.D. = 0.13), a more than 32-fold decrease. In comparison, the mean daily percentage of recordings with detections at site C2 (Between Lung Kwu Chau and Sha Chau) changed from 12.8% (S.D. = 5.9) to 7.0 (S.D. = 4.2), representing less than a two-fold decrease. At C2, however, a substantial change was noted in the occurrence of whistles between project phases. Approximately, 12% of detections made at site C2 contained whistles during the pre-construction phase, compared to < 1% during the construction phase.

Figures 55a and 55b show the number of hourly detections made during each phase at sites C1 and C2, respectively. At site C1 there was no evidence of a diel pattern during the pre-construction phase, but during the construction phase all four detections occurred during the day. At site C2

there was not a substantial change in the timing of occurrence of dolphin detections. A weak to moderate diel trend favoring nighttime detections was present during both phases of the project.

Finally, there were significant increases in the ambient noise levels measured at both sites C1 and C2 during the construction phase (C1: Two-sample T-test, $T = 10.7$, $p < 0.001$; C2: Two-sample T-test, $T = 10.5$, $p < 0.001$). At site C1, the average full-band RMS SPL measured was 105.6dB re 1 µPa (S.D. = 2.6) during the pre-construction phase and 108.1dB re 1 µPa (S.D. = 5.8) during the construction phase. At site C2, the average full-band RMS SPL measured was 102.8 dB re 1 µPa (S.D. = 1.8) during the pre-construction phase and 104.3dB re 1 µPa (S.D. = 3.3) during the construction phase.

4. DISCUSSION

4.1. Underwater noise study (dipping hydrophone)

During the 2013 pre-construction phase of the study and throughout the study area, mean bandlevels of underwater noise were 116.71 ± 6.29 dB re µPa for the "wideband" frequency range of 30 Hz to 40 kHz and 112.27 ± 6.36 dB re µPa for the "dolphin-sensitive" frequency range of 400 Hz to 12.5 kHz. By comparison, mean bandlevels during the 2014 construction phase of the study and throughout the study area were 122.80 ± 8.55 dB re 1 µPa for the wideband case and 117.10 ± 8.67 dB re 1 µPa for the dolphin band case. These average bandlevels were ~5–6 dB greater (although within a standard deviation of each other) than those measured during the baseline phase of the study and are likely attributable to seasonal and/or annual increases in vessel traffic, some portion of which was construction-related.

In the vicinity of anticipated bored piling operations, mean bandlevels were approximately 114 dB re 1 µPa and 108 dB re 1 µPa for the wideband frequency range and for the dolphin-sensitive band, respectively, during the baseline phase, that is, a few decibels quieter than the larger study area. During the construction phase of the study, mean bandlevels of recordings collected in the vicinity of bored piling operations and concurrent with construction-related activities were 125.62 ± 5.80 dB re 1 µPa and 119.31 ± 6.14 dB re 1 µPa for the wideband frequency range and for the dolphin-sensitive band, respectively. One might conclude that this ~11 dB increase in bandlevels compared to baseline measurements is attributable primarily to bored piling noise; however, measurements collected at varying distances from construction activities and the weak range-dependence exhibited by propagation models fitted to these measurements suggest that noise levels near the construction area and throughout the study area were higher in 2014 compared to

2013 yet were not strictly the result of bored piling sounds emanating from the bored piling pier locations. The acoustic records and observation logs confirm that the soundscape is dominated by transient vessel noise, some of which was construction-related. In this environment, sounds related to bored piling activities—with the possible exception of noise generated by construction-related support ships—appears to be negligible compared to other sound sources, in particular vessel traffic.

In both the baseline and construction phases of the study, bandlevels far exceeded levels of typical ocean background ambient noise, whose source is primarily wind/waves and other environmental factors. Indeed, in both phases of the study, no correlation was found between wind speed and sound levels since noise due to vessels and other anthropogenic sources masked that of wind-generated noise. With respect to studying local dolphins by passive acoustic methods, these same high noise levels can also mask dolphin vocalizations and limit their detection range. Based on propagation modeling results, vessel noise masks bored piling noise, as well.

In addition to high baseline noise levels, temporal and spectral characteristics of sound in the study area varied greatly due to the high density of vessel traffic, fishing-related noise, and other anthropogenic activity that introduced transient noise throughout the day, especially during daylight hours.

4.2. Dolphin acoustic behavioural study (dipping hydrophone)

The information obtained by focal follow hydrophone data collection yielded some anticipated and also some novel information about the acoustic activity of Chinese White Dolphins (CWD) in Hong Kong off North Lantau. CWD occurred nearly daily in the study area during the pre-construction phase of the project, with approximately equal occurrence in both zones. As expected, acoustic activity tended to increase with group size and was highest during socializing periods. Larger groups have more animals that can contribute signals to recordings and it is common for delphinids to be more vocally active during periods of socializing (for example, Würsig et al. 1994; Brownlee and Norris 1994). Interestingly, there was a gradual rise in the click production rate throughout the day, peaking in the afternoon period between 14:00 and 15:59. This suggests that the afternoon was perhaps a time of increased foraging or socializing for dolphins in this area. It is also very interesting to note that there was a large difference in the occurrence of whistling between Zones 1a and 1b. This suggests that, at least during daytime hours when the data were obtained, Zone 1a may have been used differently than Zone 1b by the dolphins. A proportionately greater whistling rate in Zone 1b suggests more emphasis on social behaviors

(Herzing 1996). On the other hand, clicking rates were equivalent between zones, suggesting that dolphin vigilance and foraging effort were similar in the two zones.

During the construction phase of the project, the occurrence of dolphins in Northeast Lantau area (Zone 1b) changed considerably. Only four dolphin encounters were made during the construction phase period in Zone 1b, as compared to 26 dolphin encounters being made in Zone 1b during the pre-construction phase. The low sample size in encounters during this phase precludes any formal statistical comparisons of the measured variables between phases. Rather, it is the relative lack of data themselves that represent the most significant finding. Simply stated, it would appear that dolphins for the most part vacated Zone 1b during the construction phase.

4.3. Passive acoustic monitoring (EARs)

The EAR data from the pre-construction deployments indicated that dolphin acoustic activity was considerably greater at site C2 (between Lung Kwu Chau and Sha Chau) than at C1 (Bridge Alignment Area). On average, 12.8% of files at C2 per day contained dolphin detections, compared to only 1.6% of files per day at C1. In addition, the mean number of daily encounters and the duration of encounters were greater at site C2 than at C1. The day with the greatest number of detections at C2 was 8 October 2013, with 28.1% of files containing dolphin detections. At C1, the day with the most detections was 7 October 2013, with 4.5% files containing dolphin signals. Interestingly, there was an increase in dolphin detections at site C1 coincident with the sudden decrease in recorded noise levels in the 2-32 kHz band on 5 October. A likely explanation is that the lower noise levels resulted in an improvement in signal to noise ratio for dolphin signals, reducing the effects of masking and increasing the detection range. It is also interesting to note that more dolphin activity was recorded at site C2 despite higher ambient noise levels present there in the frequency band associated with dolphin signals (4-32 kHz) compared to site C1.

Dolphin detections at site C1 did not exhibit any temporal pattern of dolphin occurrence during the pre-construction phase. At site C2, the main temporal features were the peak in detections occurring in the morning hours between 08:00 and 9:59, followed by a comparative lull in the mid-day hours between 11:00 and 13:59. The difference in both detection rates and temporal occurrence suggest that dolphins use sites C1 and C2 very differently. The lack of whistles recorded and the sparse detections at Site C1 is an indicator that the area is likely not used very much for socializing or regular foraging.

The EAR data from the construction-phase period support the conclusion from the acoustic

behavioural study that a substantial reduction in dolphin occurrence took place during this period. While a significant decrease in dolphin activity was noted at both monitoring locations, the change at site C1 (Bridge Alignment Area) was dramatically greater. The reduction in dolphin acoustic activity and the proportional change in whistling and clicking at site C2 between project phases may be explained by seasonal variability. The changes at C1, on the other hand, are most likely explained by an avoidance of the area by the animals in response to increased human activity as suggested in Hung (2014).

The drop in noise level in the 2-32 kHz band on 5 October is somewhat puzzling. A manual spectral analysis of the data recorded before and after 5 October did not show any evidence of a sudden drop in instrument sensitivity. In addition, while ambient RMS SPLs were lower, dolphin detections concurrently increased. This is also inconsistent with the explanation that the instrument lost sensitivity, because it should have led to fewer dolphin detections, not more. However, in order to rule out the unlikely possibility of an instrument malfunction, the two EARs used for this work were compared to one another in a mock deployment prior to the construction phase of the monitoring project. The two instruments were co-deployed for a short, 24-hour recording period in the same location near a boat harbour and the RMS SPLs of the resulting recordings were calculated. Figure 56 shows a comparison of the recordings obtained. Only minor differences (~ 2 dB) consistent with routing instrument variability were observed, indicating that the EAR from site C1 was functioning properly during the pre-construction phase. Consequently, a more plausible explanation is that the sources of mid- (2-16 kHz) and high frequency (16-32 kHz) noise in the area were in some way removed or suppressed after 5 October. The greatest contributors to shallow water noise in the 2-32 kHz band are sounds generated from invertebrates (specifically, snapping shrimp), surface-breaking waves and rain. Therefore, one or both of the following alternative explanations are plausible: 1) a local disturbance (e.g. a bottom trawler, large runoff event) substantially altered/affected the nearby benthic faunal composition, or 2) the days prior to 5 October were characterized by rain and/or surface breaking waves, which were not present during the remainder of the deployment period. Either or both events could result in the observed reduction in mid- and high frequency noise.

5. EVENT AND ACTION PLAN

Exceedances of Action and Limit Levels were recorded for the monitoring. The following actions were undertaken in accordance with the Event and Action Plan:

- Repeated statistical data analysis to confirm findings with results presented in the present report;
- Reviewed all available and relevant data to ascertain if differences are as a result of natural variation or seasonal differences (please refer to the analysis in the following paragraphs);
- Identified source(s) of impact (please refer to the analysis in the following paragraphs);
- Inform the IEC, SO and Contractor (as reported in the presented report);
- Checked monitoring data with results presented in the present monitoring report;
- Carry out audit to ensure all dolphin protective measures are implemented fully and additional measures be proposed if necessary (confirmed during weekly site audits that all measures are implemented); and
- Discuss additional dolphin monitoring and any other potential mitigation measures (e.g. consider to temporarily stop relevant portion of construction activity) with the IEC and Contractor (please refer to the discussion below and no immediate action is considered necessary).

Further details of the Event and Action Plan implementation are provided below.

For the implementation of Event and Action Plan, the values of two response variables (clicking and whistling rates) as a function of the size of dolphin group, their behavioural state and time of day deduced from the calibrated hydrophone data are calculated for both baseline and impact monitoring periods, and are compared in Table 5. According to the Event and Action Plan shown in Table 6, all response variables described above are taken in to account, and departures of any of these variables between baseline and construction phases with a 20% difference will trigger the Action Level under the EAP. If a 40% difference in any of these variables between baseline and construction phases is detected, then the Limit Level under the EAP should be triggered and immediate action will be required (see Table 7).

All variables that have triggered the Action and Limit Levels are highlighted in Table 5, and differences between pre-construction and construction phases are noted in the whistle and/or click production rates of dolphins among several of these variables. In total, there were one Action Level (AL) exceedance and six Limit Level (LL) exceedances in the clicking rates, while there were nine LL exceedances in the whistling rates. However, the small sample size of data obtained during the

construction phase (only 4 encounters with 28 samples) compared to the pre-construction phase (51 encounters with 131 samples) does not warrant drawing conclusions based on statistical inference. Therefore, any differences recorded in these comparisons of whistling and click rates between the two phases of the study must be viewed with caution, as these may be artifacts of the small sample sizes obtained during the construction phase.

Another aspect of the Event and Action Plan is to examine the change of 24-hour pattern of dolphin acoustic activity. If there is a 20% difference in detections occurred during the nighttime period between 19:00 and 6:59 at Site C1 (baseline percentage of detection as 54%) in the impact phase monitoring period (i.e. ≥74% or ≤34% of all detections occurred at nighttime), then the Action Level should be triggered. On the other hand, if there is a 40% difference in detections occurred during the nighttime period between 19:00 and 6:59 at Site C1 in the impact phase monitoring period (i.e. ≥94% or ≤14% of all detections occurred at nighttime), then the Limit Level should be triggered. However, if such 20% or 40% difference occurs at both Sites C1 and C2 (baseline percentages of detections as 54% and 53% respectively), the action or limit level should not be triggered, as the change in diel pattern of dolphin occurrence does not only occur at the site of impact (C1) but also at the control site (C2), and the changes in dolphin occurrence at both sites may not be directly to the TM-CLKL construction works.

During the construction phase, only four detections were made at Site C1, and all five were detected outside of the period between 19:00 and 6:59, indicating that the Limit Level should be triggered. However, it should be noted that the very small sample size in the construction phase is in stark contrast to the much larger sample size in the pre-construction (five samples in construction phase vs. 139 samples in pre-construction phase), and with this huge difference in sample size it remains inconclusive whether any change in diel pattern of dolphin occur has occurred at Site C1 due to the rare occurrence of dolphins in this area. As a reference, the percentage of detection at C2 during construction phase was 62%, which was slightly higher than the baseline percentage (53%), and it can be concluded that there was not a substantial change in the timing of occurrence of dolphin detections.

In conclusion, due to the very small sample size recorded from both the calibrated hydrophone data and EAR data during the construction phase, it is impossible to determine whether any change in dolphin acoustic behaviour near the construction site was related to the TM-CLKLK construction activities, and therefore no further action is needed to be taken.

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Tables

Table 1. Mean bandlevels as a function of distance from proposed bored piling pier locations for the baseline phase of the study.

Range (m)	Mean Bandlevel ± s.d. (dB re 1 µPa)	
	Wideband: 30 Hz – 40 kHz	**Dolphin Band: 400 Hz – 12.5 kHz**
0	113.98 ± 3.98 (n=11)	107.43 ± 4.95 (n=11)
10	112.59 ± 2.78 (n=10)	107.70 ± 2.76 (n=10)
20	113.93 ± 3.54 (n=10)	107.19 ± 4.09 (n=10)
50	113.78 ± 4.17 (n=10)	108.75 ± 5.98 (n=10)
100	115.28 ± 4.57 (n=10)	107.40 ± 4.16 (n=10)
200	115.75 ± 3.67 (n=10)	109.82 ± 5.10 (n=10)
300	115.22 ± 4.19 (n=10)	108.33 ± 4.98 (n=10)
500	113.37 ± 3.58 (n=10)	106.20 ± 2.8 (n=10)

Table 2. Sound levels measured during construction-related activity for each of three bored piling pier locations—B1, B2, and B3—averaged across all ranges. Sample sizes are noted parenthetically.

Construction Activity	Mean Bandlevel ± s.d. [Wideband / Dolphin Band] (dB re 1 µPa)		
	B1	B2	B3
Pre-drilling	— / — (n=0)	117.00 ± 0.00 / 112.00 ± 0.00 (n=2)	127.33 ± 4.91 / 120.26 ± 5.39 (n=22)
Casing	133.18 ± 6.84 / 127.68 ± 7.44 (n=4)	131.24 ± 3.62 / 124.72 ± 4.31 (n=14)	— / — (n=0)
Soil grabbing	123.22 ± 5.97 / 116.80 ± 6.52 (n=23)	123.48 ± 6.94 / 117.63 ± 6.78 (n=11)	126.62 ± 5.86 / 120.63 ± 6.45 (n=10)
Welding	120.67 ± 5.01 / 115.00 ± 5.78 (n=6)	— / — (n=0)	120.71 ± 4.13 / 115.51 ± 2.78 (n=12)
RCD	126.92 ± 8.23 / 119.94 ± 8.10 (n=20)	128.76 ± 5.11 / 122.79 ± 5.23 (n=14)	— / — (n=0)
Air lifting	123.19 ± 3.61 / 116.59 ± 2.27 (n=18)	— / — (n=0)	— / — (n=0)
Caging	127.92 ± 6.30 / 123.07 ± 6.28 (n=9)	— / — (n=0)	— / — (n=0)
Concreting	121.38 ± 6.62 / 114.89 ± 8.73 (n=9)	— / — (n=0)	— / — (n=0)

Table 3. Sample sizes for the construction-related sound measurements shown in Figures 13 and 14. Non-zero sample sizes (*i.e.*, where measurements exist) are shaded gray.

Construction Activity	Sample Size																									
	Range (m) to B1										Range (m) to B2									Range (m) to B3						
	30	50	70	80	90	100	150	200	300	500	50	80	100	150	200	300	500	600	850	80	90	100	200	300	400	500	600
Pre-drilling	0	0	0	0	0	0	0	0	0	0	1	0	0	1	0	0	0	0	0	1	1	3	5	5	2	4	1
Casing	0	0	0	0	0	1	0	1	1	1	0	0	2	0	6	3	2	1	0	0	0	0	0	0	0	0	0
Soil grabbing	0	1	2	1	1	3	1	5	5	5	1	1	2	0	2	2	2	0	0	0	2	5	1	1	0	1	0
Welding	0	1	0	0	0	1	0	1	1	2	0	0	0	0	0	0	0	0	0	0	0	4	3	3	0	2	0
RCD	3	1	0	0	0	5	0	4	3	4	4	0	4	0	2	2	2	0	0	0	0	0	0	0	0	0	0
Air lifting	1	1	0	0	0	2	0	4	5	5	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Caging	0	2	0	0	0	1	0	2	2	2	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
Concreting	0	2	0	0	0	2	0	2	2	1	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0

Table 4. Statistical summary data and comparisons for EAR sites C1 and C2 pre- and during construction.

Parameter	Time Periods compared	Mean (SD)	N	Test, statistic	P-value
C1 daily % files with dolphins	Pre-construction	1.61 (1.46)	30	Mann-Whitney U Test, Z = 5.322	< 0.001
	Construction	0.058 (0.13)	30		
C2 daily % files with dolphins	Pre-construction	12.8 (5.9)	30	Mann-Whitney U Test, Z = 3.896	< 0.001
	Construction	7.0 (4.2)	30		
C1 daily number of encounters	Pre-construction	4.0 (3.5)	30	Mann-Whitney U Test, Z = 5.322	< 0.001
	Construction	0.17 (0.38)	30		
C2 daily number of encounters	Pre-construction	8.6 (2.0)	30	Mann-Whitney U Test, Z = 2.587	0.01
	Construction	7.0 (3.1)	30		
C1 daily average encounter duration (minutes)	Pre-construction	1.9 (3.6)	30	Mann-Whitney U Test, Z = 1.108	0.267
	Construction	0.83 (1.9)	30		
C2 daily average encounter duration (minutes)	Pre-construction	25.0 (14.3)	30	Mann-Whitney U Test, Z = 2.964	0.003
	Construction	16.0 (9.6)	30		
C1 average full-band RMS sound pressure level hourly mean	Pre-construction	105.6 (2.55)	720	Two-sample T-test, T = 10.7	< 0.001
	Construction	108.1 (5.82)	720		
C2 average full-band RMS sound pressure level hourly mean	Pre-construction	102.8 (1.83)	720	Two-sample T-test, T = 10.5	< 0.001
	Construction	104.3 (3.32)	720		

Table 5. Values of the two response variables of dolphin acoustic behaviour collected by calibrated hydrophone (average clicks and whistles per minutes) by size of group, behavioural state and time of day during baseline and impact monitoring periods.

(The numerical values highlighted in blue indicated that the values recorded in impact monitoring period have triggered the Action Level (20% higher or lower than the baseline period), while the ones highlighted in red indicated a triggering of Limit Level (40% higher or lower than the baseline period). Only the cells highlighted in yellow have found significant differences between the values recorded in impact and baseline monitoring periods, while no significant difference was found in other comparisons even though some have triggered the Action or Limit Level.)

		Average clicks per minute (± s.d.)	Average whistles per minute (± s.d.)
Group Size			
1 dolphins	Baseline	169.74 ± 194.88 (n=10)	2.89 ± 5.21 (n=10)
	Impact	45.12 ± 42.81 (n=15)	4.52 ± 5.14 (n=15)
2-5 dolphins	Baseline	161.46 ± 160.61 (n=86)	3.14 ± 6.54 (n=86)
	Impact	143.31 ± 101.16 (n=13)	17.64 ± 16.47 (n=13)
6-9 dolphins	Baseline	207.25 ± 157.17 (n=35)	5.64 ± 9.91 (n=35)
	Impact	n/a	n/a
Behavioural State			
Feeding	Baseline	165.09 ± 118.49 (n=18)	2.71 ± 6.67 (n=18)
	Impact	12.00 (n=1)	10.20 (n=1)
Milling	Baseline	183.73 ± 182.09 (n=123)	3.83 ± 7.63 (n=123)
	Impact	88.97 ± 87.68 (n=24)	10.94 ± 13.89 (n=24)
Socializing	Baseline	294.63 ± 159.98 (n=4)	3.05 ± 3.33 (n=4)
	Impact	263.69 (n=1)	23.67 (n=1)
Traveling	Baseline	119.98 ± 81.82 (n=22)	4.98 ± 8.77 (n=22)
	Impact	64.45 ± 35.14 (n=2)	0.38 ± 0.54 (n=2)
Time of day			
08:00-09:59	Baseline	100.83 ± 77.23 (n=5)	2.30 ± 4.35 (n=5)
	Impact	n/a	n/a
10:00-11:59	Baseline	155.65 ± 120.40 (n=35)	4.77 ± 9.59 (n=35)
	Impact	49.94 ± 38.94 (n=6)	1.98 ± 2.08 (n=6)
12:00-13:59	Baseline	171.08 ± 149.02 (n=52)	2.08 ± 5.08 (n=52)
	Impact	105.09 ± 105.43 (n=18)	13.06 ± 11.93 (n=18)
14:00-15:59	Baseline	218.49 ± 241.38 (n=27)	3.88 ± 5.77 (n=27)
	Impact	87.13 ± 42.19 (n=4)	12.54 ± 24.58 (n=4)
16:00-17:59	Baseline	186.40 ± 122.57 (n=11)	7.82 ± 11.83 (n=11)
	Impact	n/a	n/a

Table 6. Event and Action Plan on Dolphin Acoustic Behaviour

EVENT	ACTION			
	ET Leader	**IEC**	**SO**	**Contractor**
Action Level With the numerical values presented in Table 5, when any of the response variable for dolphin acoustic behaviour recorded in the construction phase monitoring is 20% lower or higher than that recorded in the baseline monitoring (see Table 5), or when there is a difference of 20% in dolphin acoustic signal detection at nighttime period at Site C1, the action level should be triggered	1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data to ascertain if differences are as a result of natural variation or seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, SO and Contractor; 5. Check monitoring data; 6. Carry out audit to ensure all dolphin protective measures are implemented fully and additional measures be proposed if necessary	1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring with the ET and the Contractor;	1. Discuss with the IEC the repeat monitoring and any other measures proposed by the ET; 2. Make agreement on measures to be implemented.	1. Inform the SO and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the SO; 3. Implement the agreed measures.
Limit Level With the numerical values presented in Table 5, when any of the response variable for dolphin acoustic behaviour recorded in the construction phase monitoring is 40% lower or higher than that recorded in the baseline monitoring (see Table 5), or when there is a difference of 40% in dolphin acoustic signal detection at nighttime at Site C1, the limit level should be triggered	1. Repeat statistical data analysis to confirm findings; 2. Review all available and relevant data to ascertain if differences are as a result of natural variation or seasonal differences; 3. Identify source(s) of impact; 4. Inform the IEC, SO and Contractor; 5. Check monitoring data; 6. Carry out audit to ensure all dolphin protective measures are implemented fully and additional measures be proposed if necessary 7. Discuss additional dolphin monitoring and any other potential mitigation measures (e.g. consider to temporarily stop relevant portion of construction activity) with the IEC and Contractor.	1. Check monitoring data submitted by ET and Contractor; 2. Discuss monitoring with the ET and the Contractor; 3. Review proposals for additional monitoring and any other measures submitted by the Contractor and advise ER accordingly.	1. Discuss with the IEC the repeat monitoring and any other measures proposed by the ET; 2. Make agreement on measures to be implemented.	1. Inform the SO and confirm notification of the non-compliance in writing; 2. Discuss with the ET and the IEC and propose measures to the IEC and the SO; 3. Implement the agreed measures.

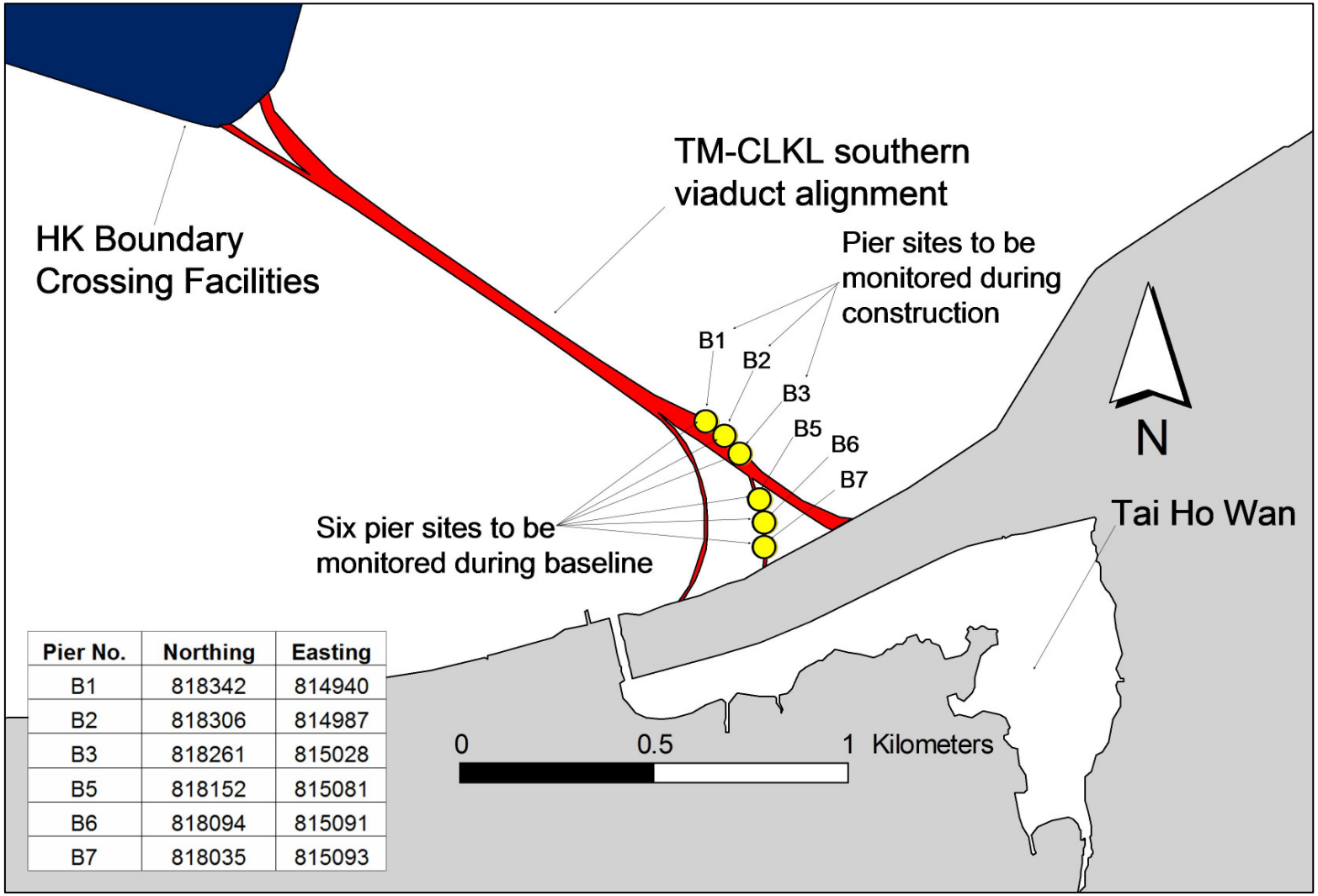
Abbreviations: ET – Environmental Team, IEC – Independent Environmental Checker, SO – Supervising Office

Table 7. Values of action level (AL) and limit level (LL) for all response variables by size of group, behavioural state and time of day

	Mean no. of clicks per minute	**Mean no. of whistles per minute**
Group Size	AL / LL	AL / LL
1 dolphins (20%/40% ***lower***)	135.79 / 101.84	2.31 / 1.73
1 dolphins (20%/40% ***higher***)	203.69 / 237.64	3.47 / 4.05
2-5 dolphins (20%/40% ***lower***)	129.17 / 96.88	2.51 / 1.88
2-5 dolphins (20%/40% ***higher***)	193.75 / 226.04	3.77 / 4.40
6-9 dolphins (20%/40% ***lower***)	165.80 / 124.35	4.51 / 3.38
6-9 dolphins (20%/40% ***higher***)	248.70 / 290.15	6.77 / 7.90
Behavioural State	AL / LL	AL / LL
Feeding (20%/40% ***lower***)	132.07 / 99.05	2.17 / 1.63
Feeding (20%/40% ***higher***)	198.11 / 231.13	3.25 / 3.79
Milling (20%/40% ***lower***)	146.98 / 110.24	3.06 / 2.30
Milling (20%/40% ***higher***)	220.48 / 257.22	4.60 / 5.36
Socializing (20%/40% ***lower***)	235.70 / 176.78	2.44 / 1.83
Socializing (20%/40% ***higher***)	353.56 / 412.48	3.66 / 4.27
Traveling (20%/40% ***lower***)	95.98 / 71.99	3.98 / 2.99
Traveling (20%/40% ***higher***)	143.98 / 167.97	5.98 / 6.97
Time of day	AL / LL	AL / LL
08:00-09:59 (20%/40% ***lower***)	80.66 / 60.50	1.84 / 1.38
08:00-09:59 (20%/40% ***higher***)	121.00 / 141.16	2.76 / 3.22
10:00-11:59 (20%/40% ***lower***)	124.52 / 93.39	3.82 / 2.86
10:00-11:59 (20%/40% ***higher***)	186.78 / 217.91	5.72 / 6.68
12:00-13:59 (20%/40% ***lower***)	136.86 / 102.65	1.66 / 1.25
12:00-13:59 (20%/40% ***higher***)	205.30 / 239.51	2.50 / 2.91
14:00-15:59 (20%/40% ***lower***)	174.79 / 131.09	3.10 / 2.33
14:00-15:59 (20%/40% ***higher***)	262.19 / 305.89	4.66 / 5.43
16:00-17:59 (20%/40% ***lower***)	149.12 / 111.84	6.26 / 4.69
16:00-17:59 (20%/40% ***higher***)	223.68 / 260.96	9.38 / 10.95

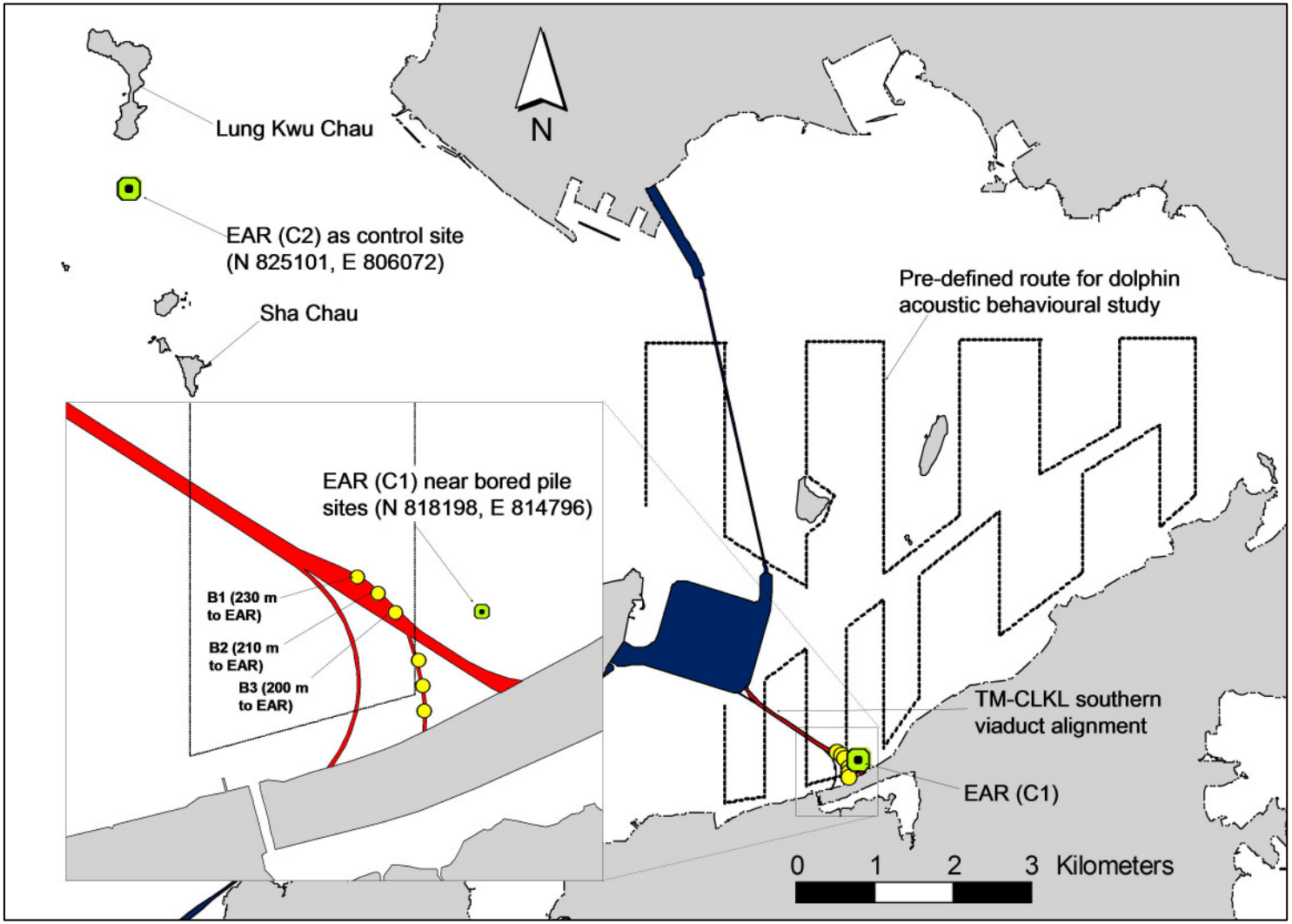
Figures

Figure 1. Location of the bored pile pier sites to be monitored for the underwater noise measurement study of TM-CLKL construction



Pier No.	Northing	Easting
B1	818342	814940
B2	818306	814987
B3	818261	815028
B5	818152	815081
B6	818094	815091
B7	818035	815093

Figure 2. Map showing the locations of EAR deployments, pier sites to be monitored as well as pre-defined route for dolphin acoustic behavioural study



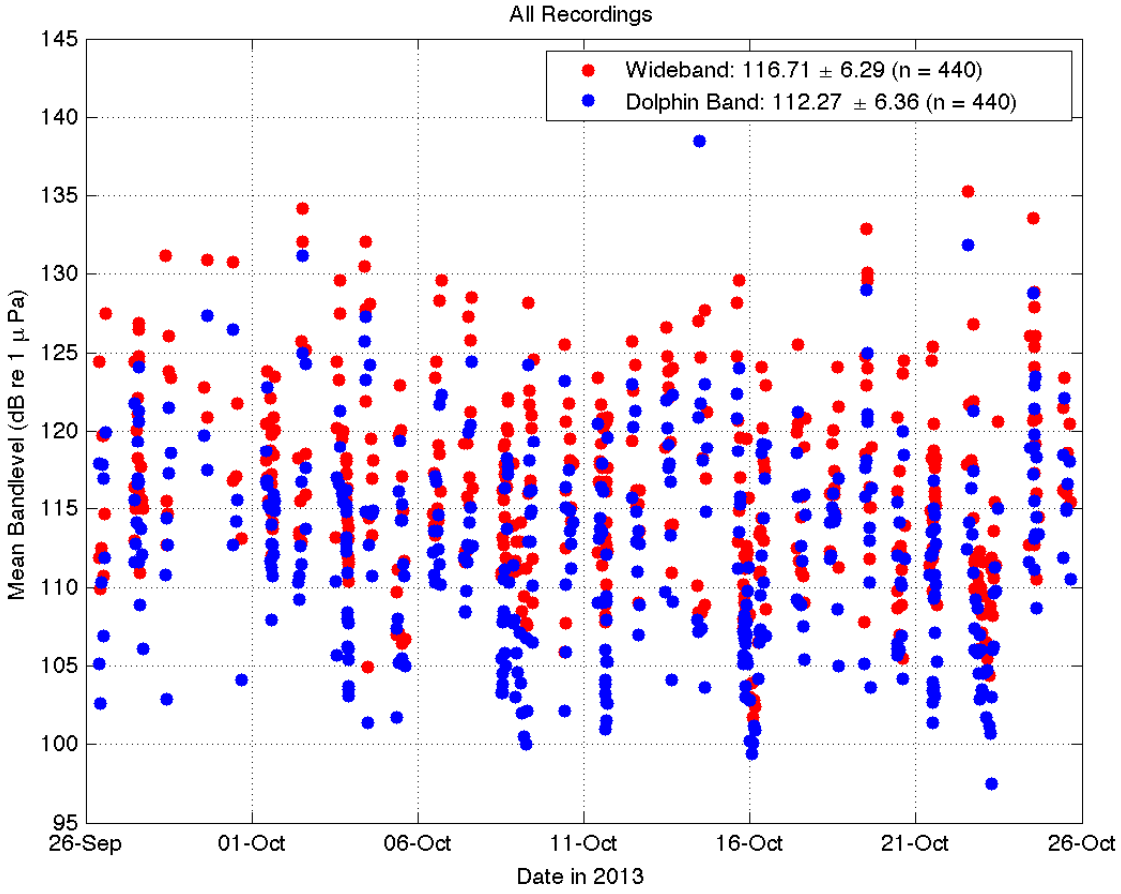


Figure 3. Mean bandlevels for all 440 recordings. Bandlevels were analyzed in terms of both the 30–40,000 Hz "wideband" frequency range (red) and 400–12,500 Hz "dolphin-sensitive" band (blue) and then averaged over the duration of each recording during pre-construction phase.

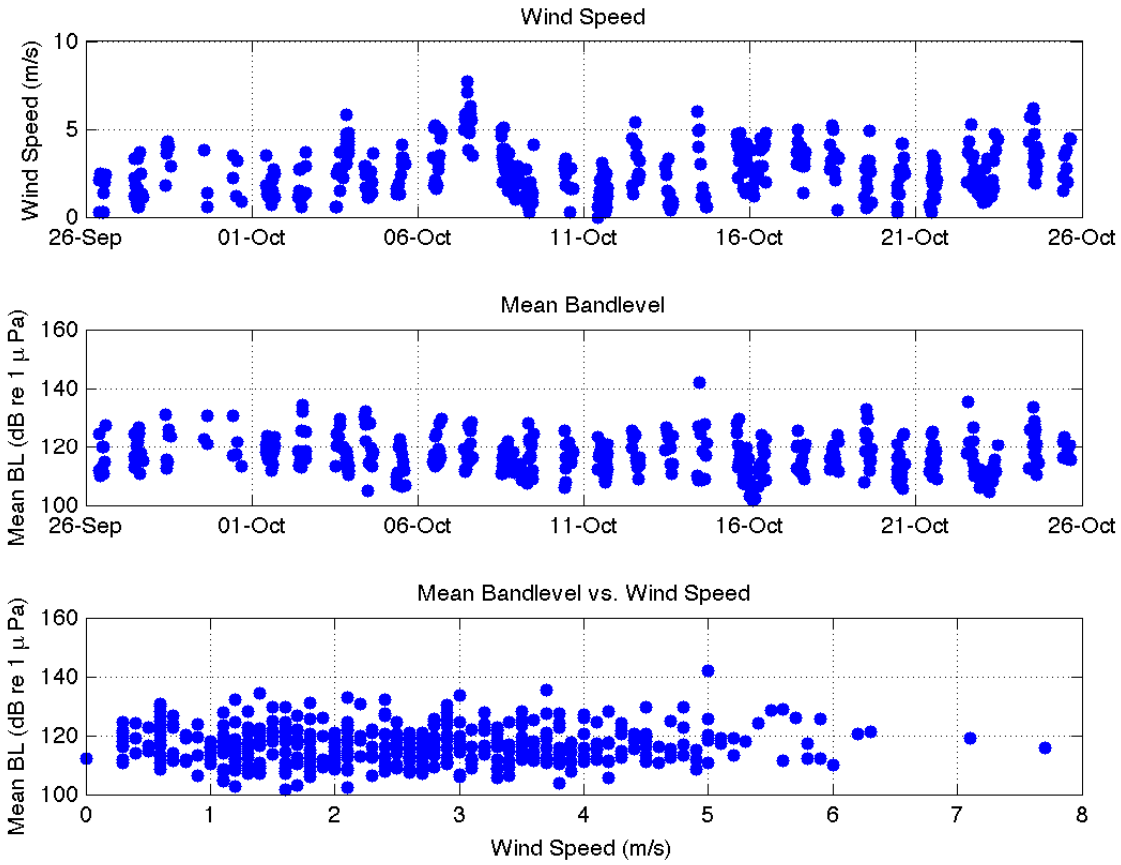


Figure 4. Received sound levels in relation to wind speed: wind speeds measured during each recording (top plot), mean bandlevels for each recording (middle plot), and mean bandlevels as a function of wind speed (bottom plot) during pre-construction phase.

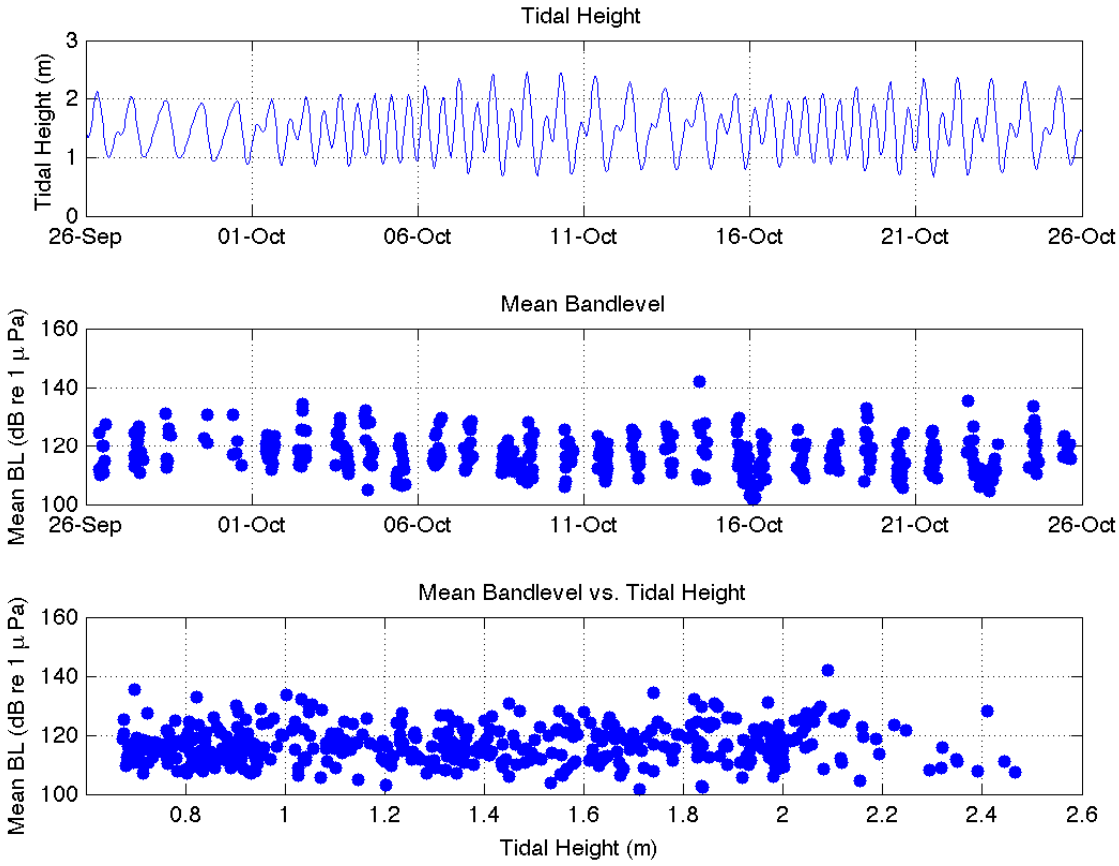


Figure 5. Received sound levels in relation to tidal height: tidal height throughout the study (top plot), mean bandlevels for each recording (middle plot), and mean bandlevels as a function of tidal height (bottom plot) during pre-construction phase.

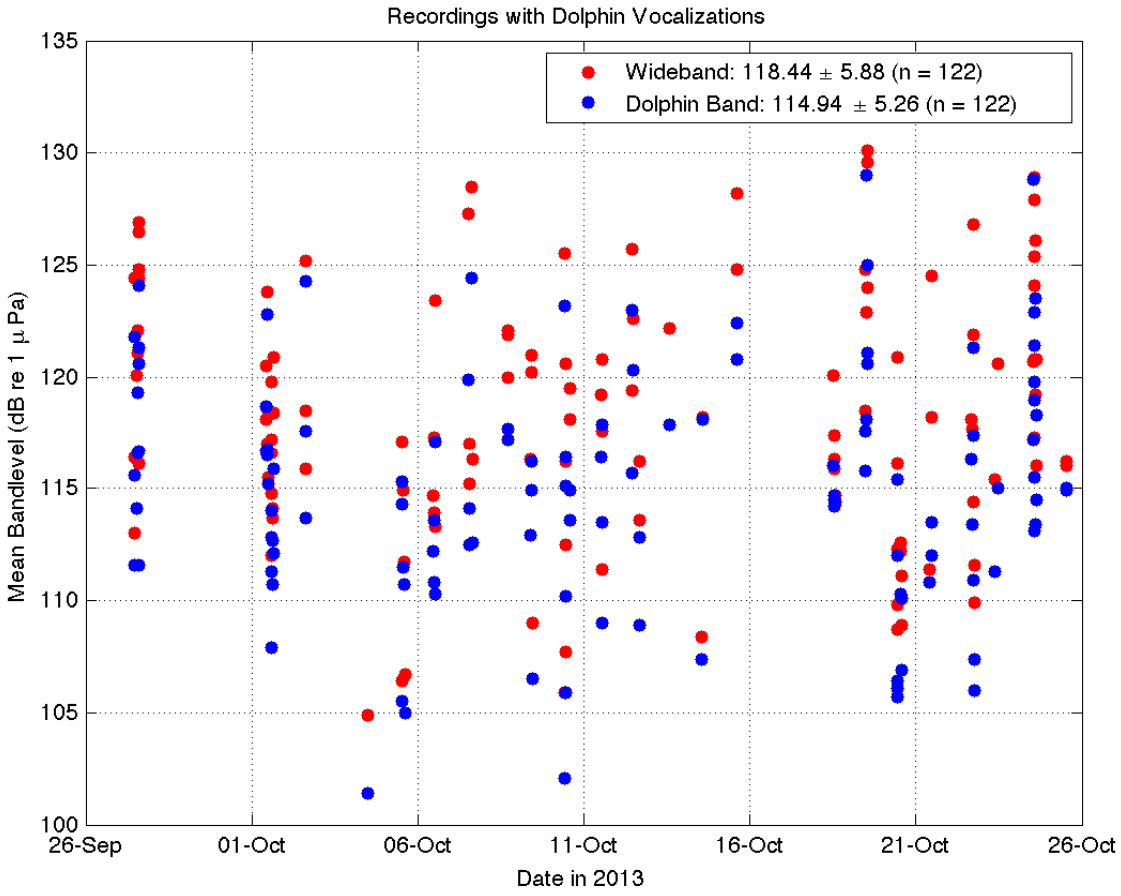


Figure 6. Mean bandlevels for the 122 recordings containing dolphin vocalizations. Bandlevels were analyzed in terms of both the 30–40,000 Hz "wideband" frequency range (red) and 400–12,500 Hz "dolphin-sensitive" band (blue) during pre-construction phase. Note that the mean bandlevel was calculated across the entire recording, regardless of the duration of detected dolphin vocalizations.

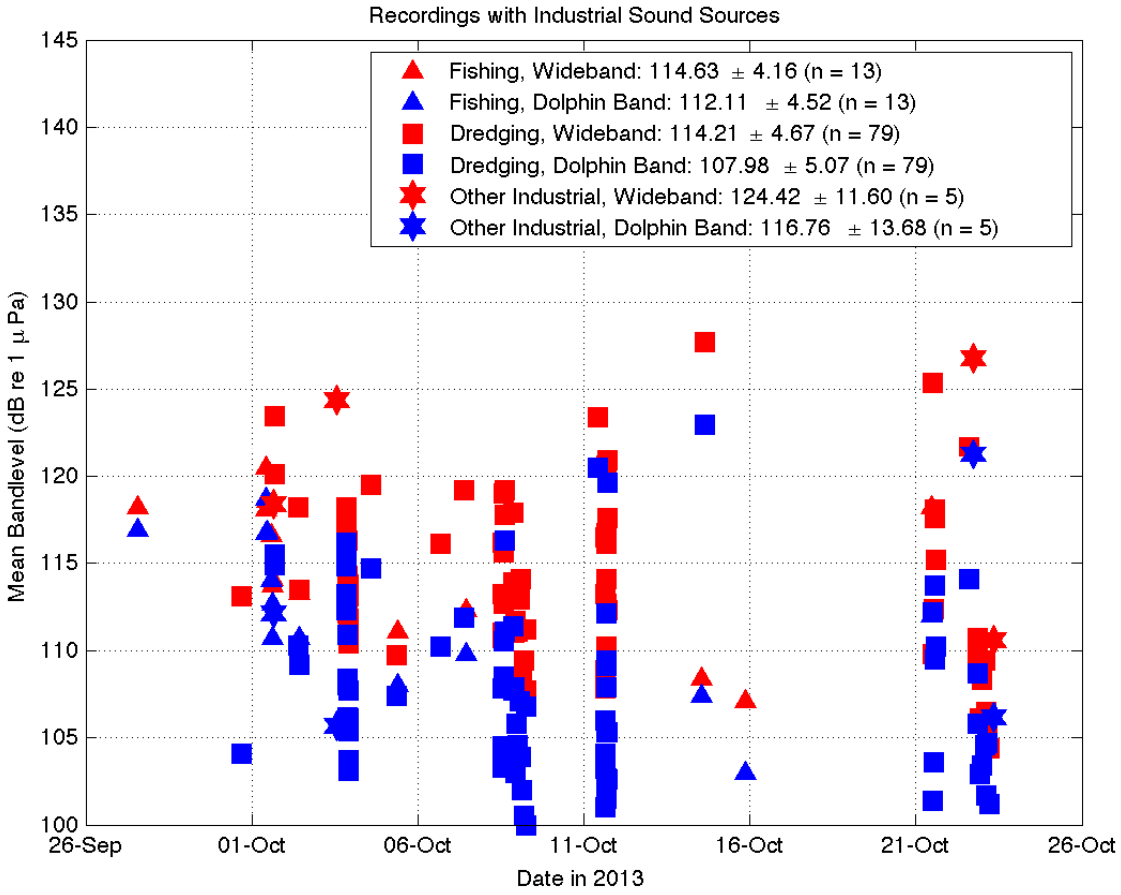


Figure 7. Mean bandlevels for recordings with documented, actively operating, industrial sound sources: fishing activity (triangles), dredging (squares), and other general industrial activity (stars) during pre-construction phase. Red and blue represent the 30–40,000 Hz "wideband" frequency range and 400–12,500 Hz "dolphin-sensitive" band, respectively. Note that the mean bandlevel was calculated across the entire recording, and, thus, bandlevels may represent other concurrent sound sources.

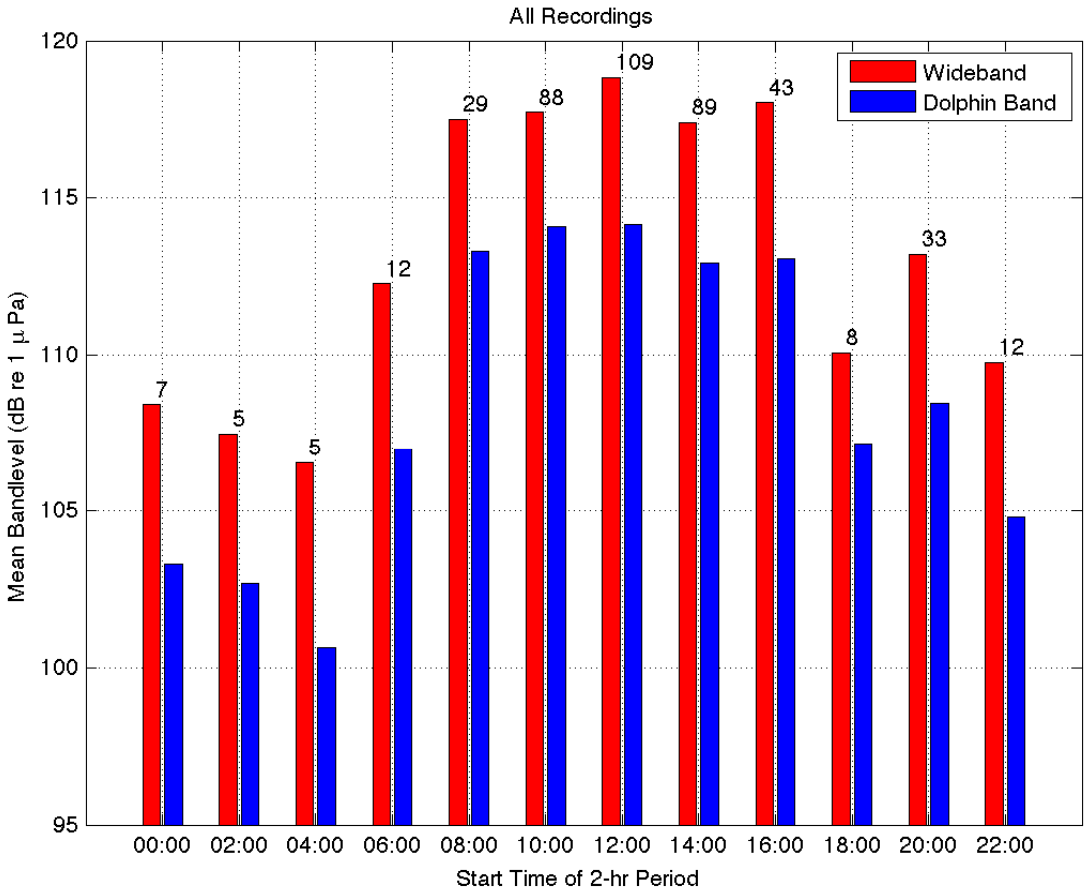


Figure 8. Mean bandlevels for all 440 recordings as a function of time of day during pre-construction phase. Red and blue represent the 30–40,000 Hz "wideband" frequency range and 400–12,500 Hz "dolphin-sensitive" band, respectively.

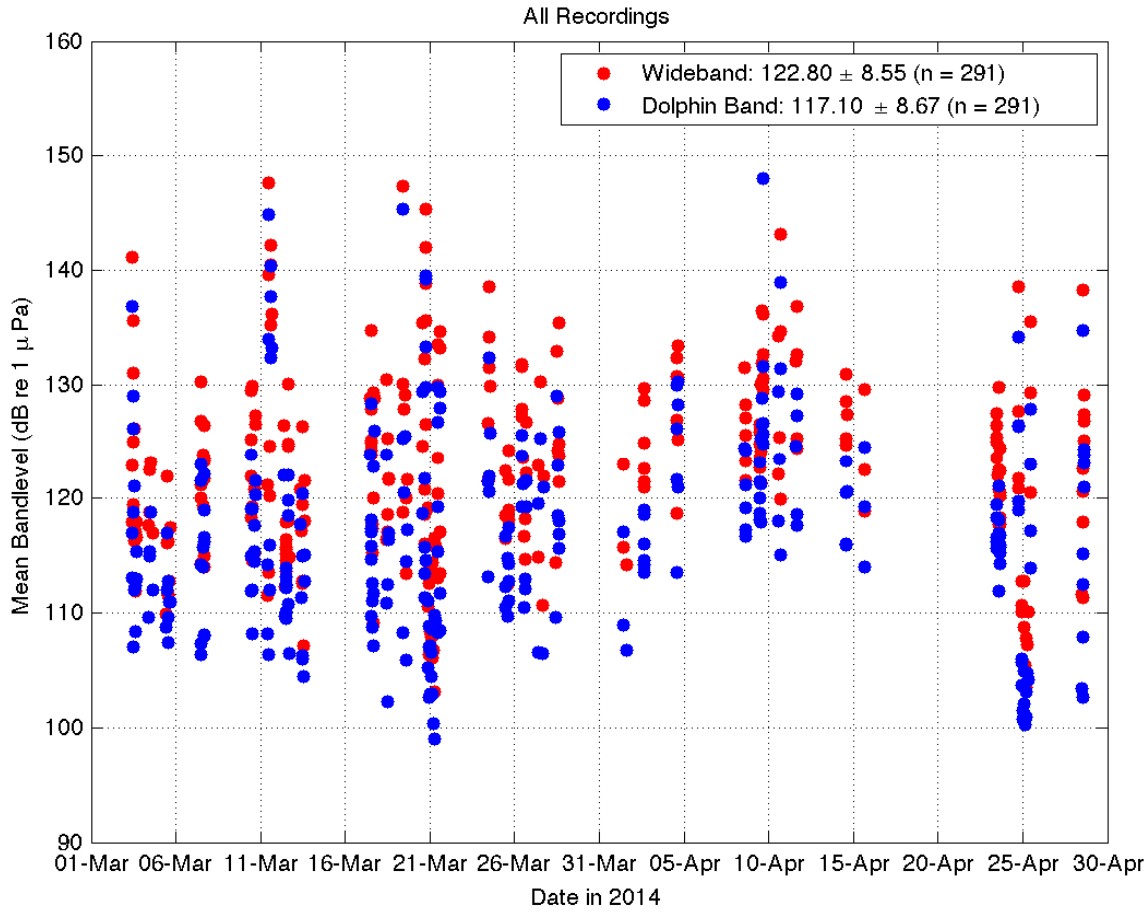


Figure 9. Mean bandlevels for all 291 recordings during construction phase. Bandlevels were analyzed in terms of both the 30–40,000 Hz "wideband" frequency range (red) and 400–12,500 Hz "dolphin-sensitive" band (blue) and then averaged over the duration of each recording.

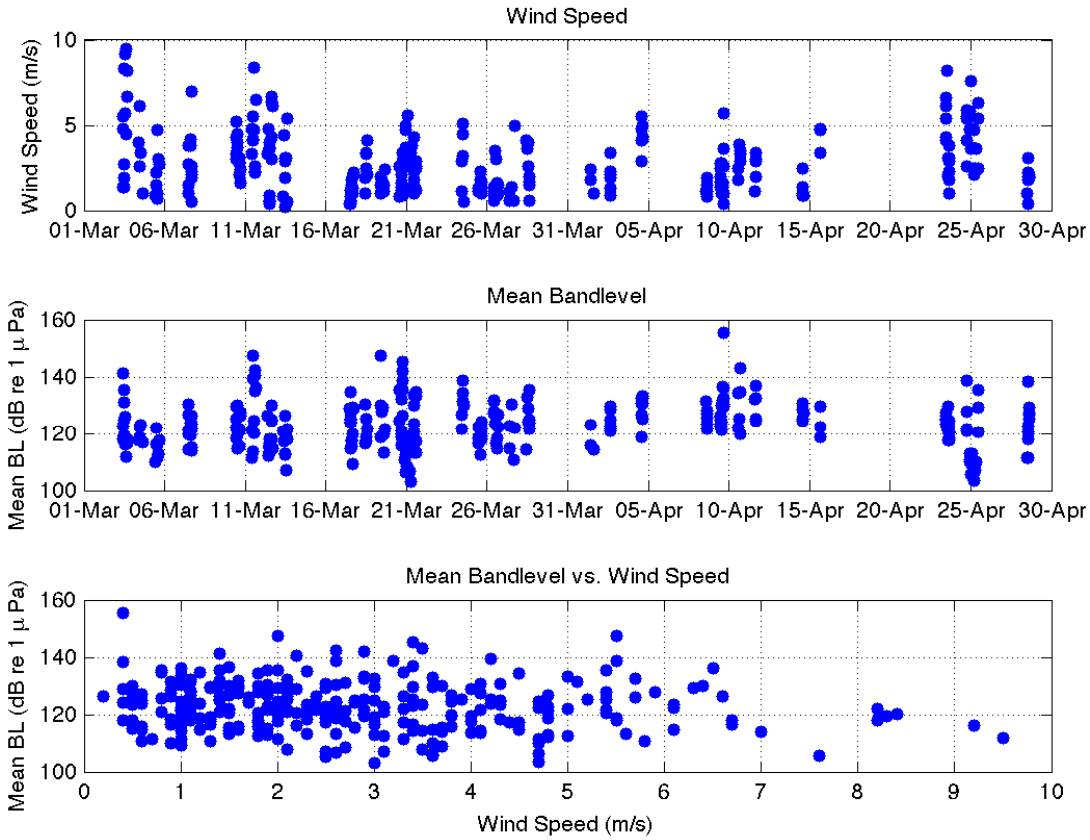


Figure 10. Received sound levels in relation to wind speed during construction phase: wind speeds measured during each recording (top plot), mean bandlevels for each recording (middle plot), and mean bandlevels as a function of wind speed (bottom plot).

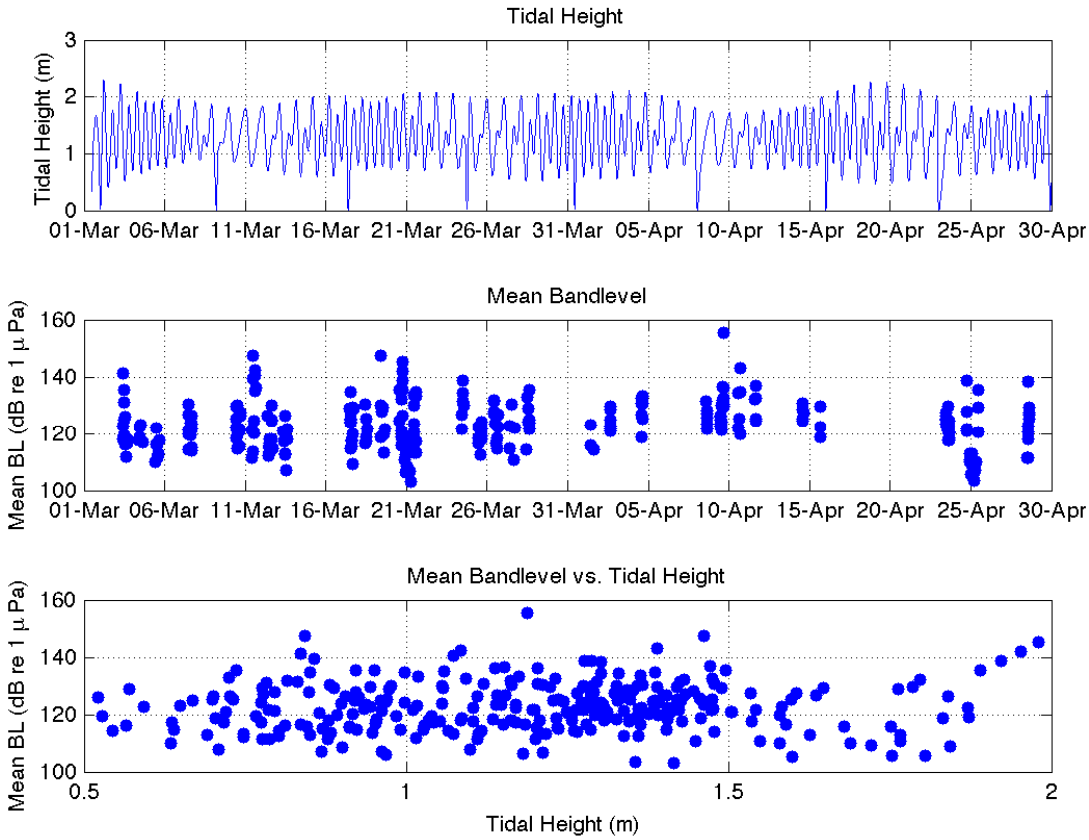


Figure 11. Received sound levels in relation to tidal height during construction phase: tidal height throughout the study (top plot), mean bandlevels for each recording (middle plot), and mean bandlevels as a function of tidal height (bottom plot).

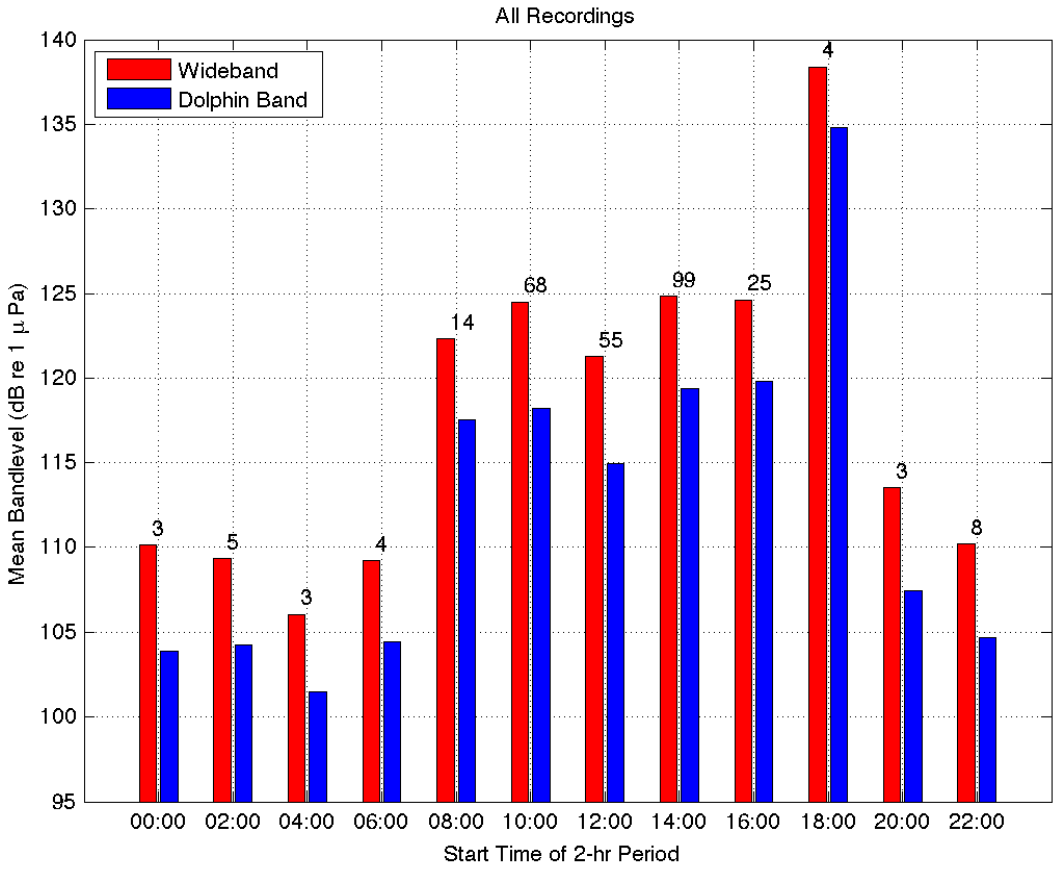


Figure 12. Mean bandlevels for all 291 recordings as a function of time of day during construction phase. Red and blue represent the 30–40,000 Hz "wideband" frequency range and 400–12,500 Hz "dolphin-sensitive" band, respectively. Sample sizes are indicated by the numbers above each bar in the histogram.

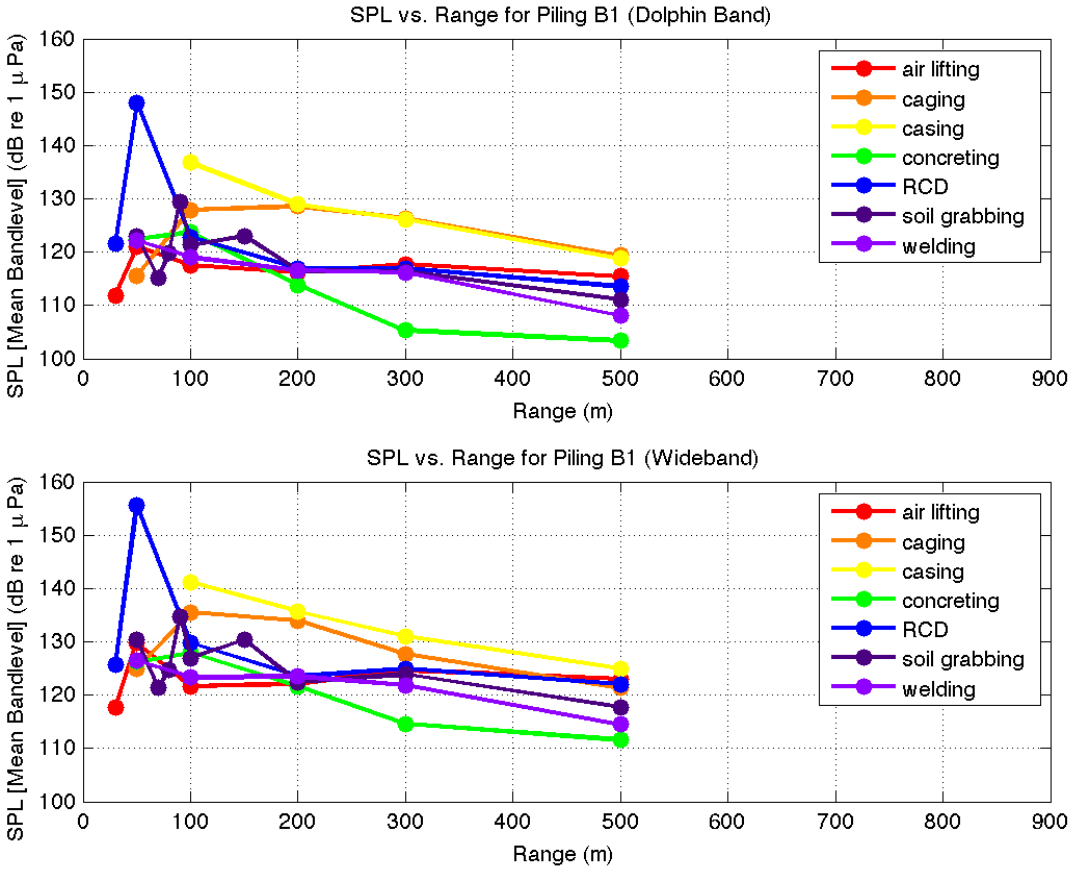
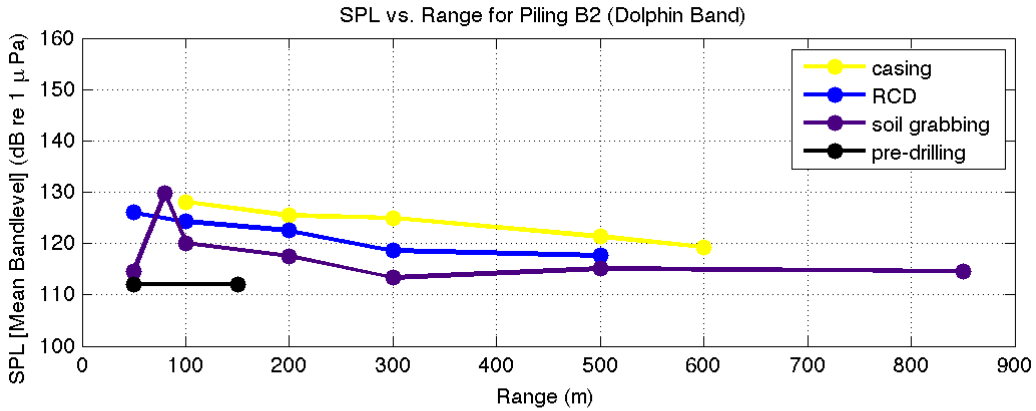
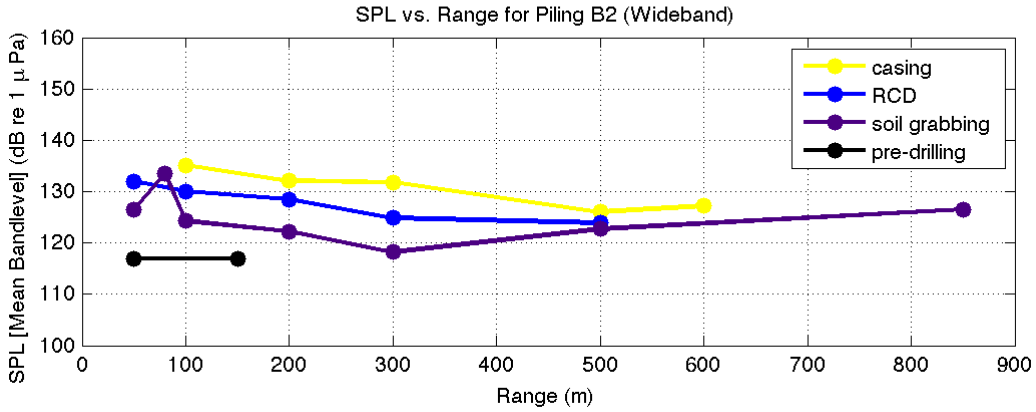


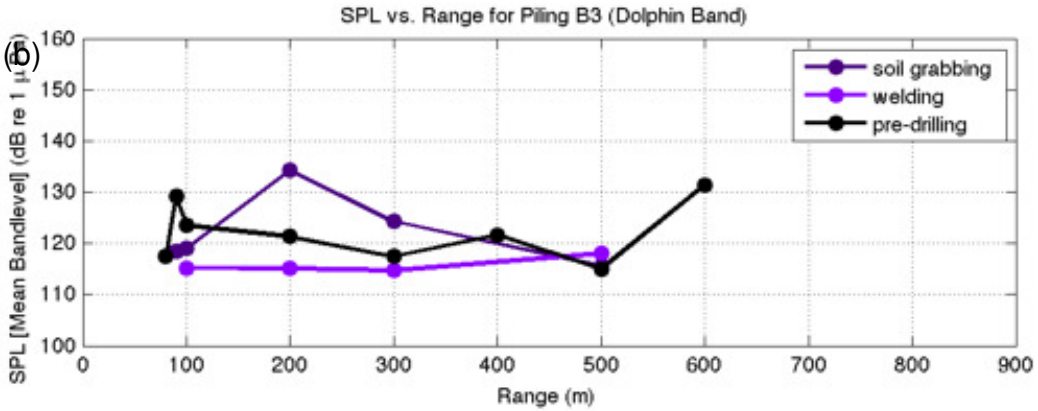
Figure 13. SPL as a function of distance from piling site B1 for the 400–12,500 Hz "dolphin-sensitive" band (top) and the 30–40,000 Hz "wideband" frequency range (bottom) during construction phase. Different line colors represent different concurrent construction-related activity.

(a)





(b)



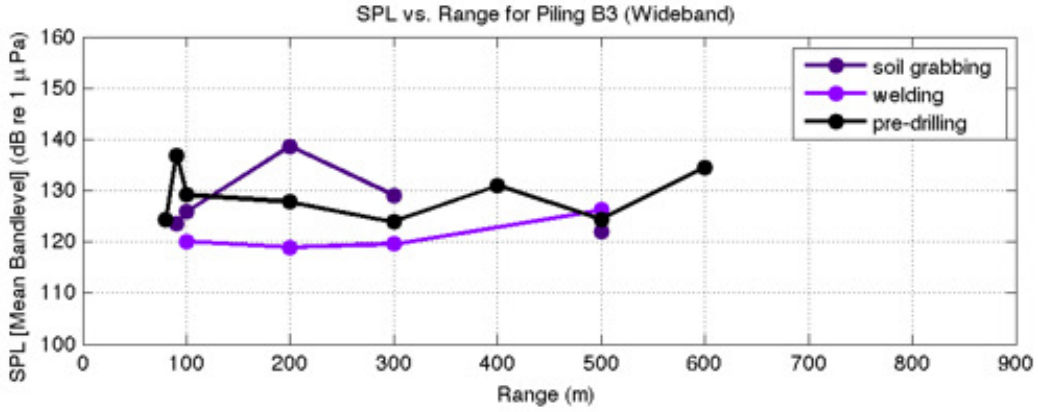


Figure 14a. SPL as a function of distance from piling site B2 for the 400–12,500 Hz "dolphin-sensitive" band (top left) and the 30–40,000 Hz "wideband" frequency range (bottom left) during construction phase. Different line colors: different concurrent construction-related activity.

Figure 14b. SPL as a function of distance from piling site B3 for the 400–12,500 Hz "dolphin-sensitive" band (top right) and the 30–40,000 Hz "wideband" frequency range (bottom right) during construction phase. Different line colors: different concurrent construction-related activity.

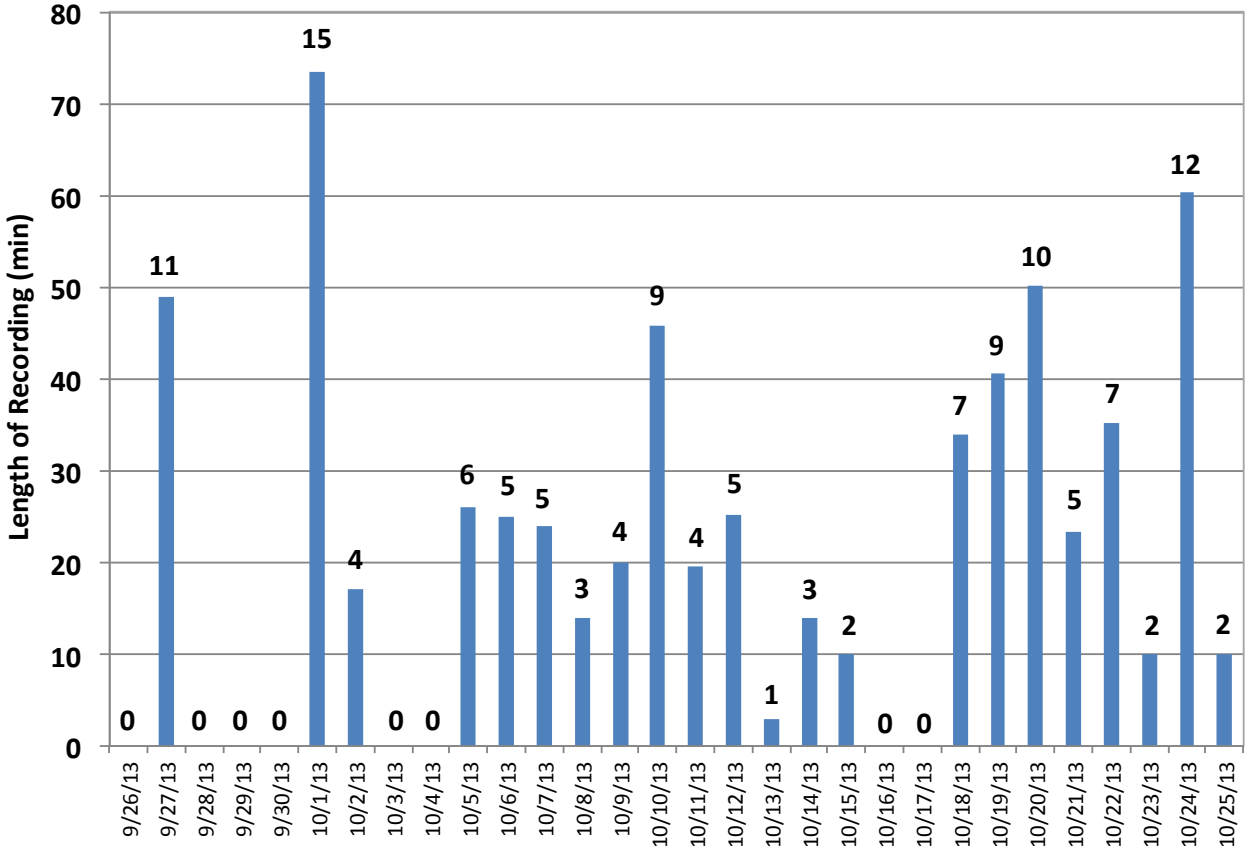


Figure 15. Summed length of recordings in minutes made for each day of observational effort during the baseline acoustic monitoring in September-October 2013. The values above each column represent the number of 5-minute recordings made per day.

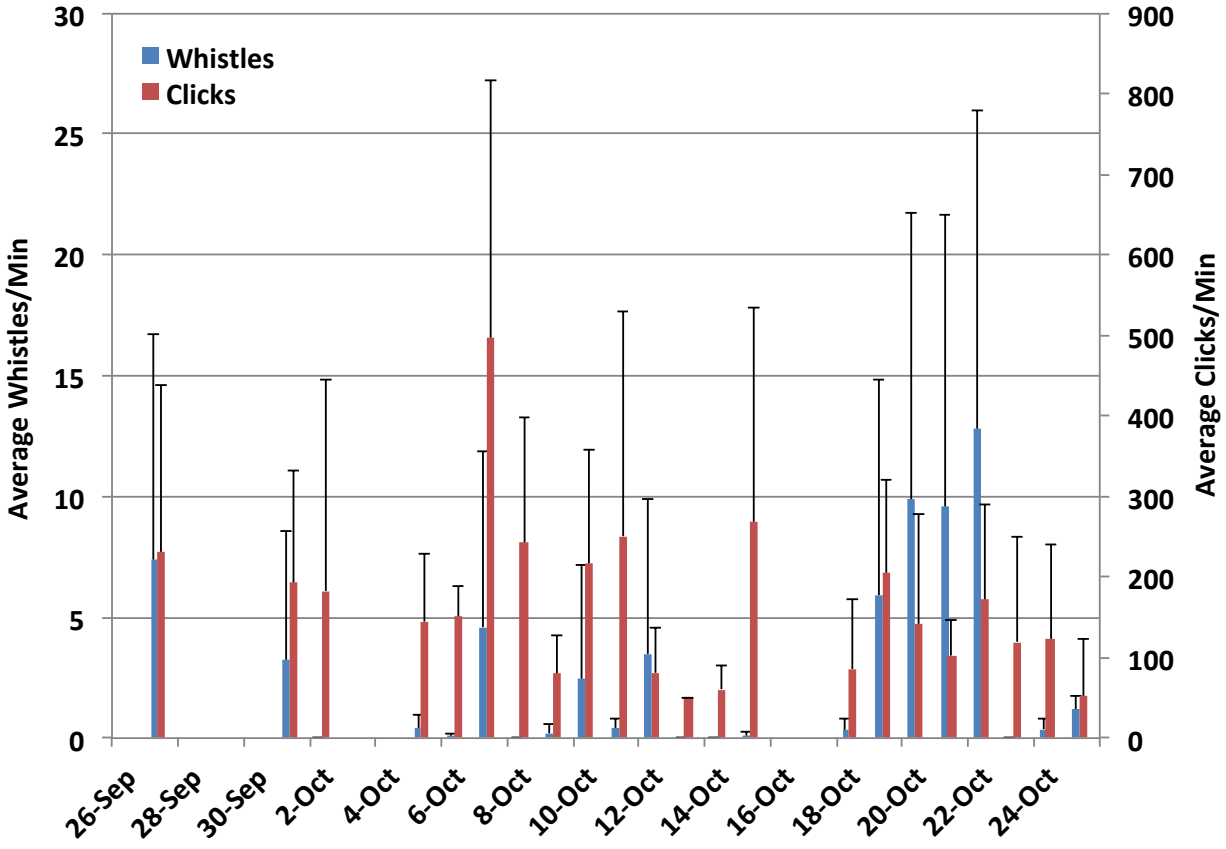


Figure 16. Mean number of clicks and whistles per minute of recording detected for each day of observational effort during the pre-construction monitoring phase. Errors bars represent one standard deviation.

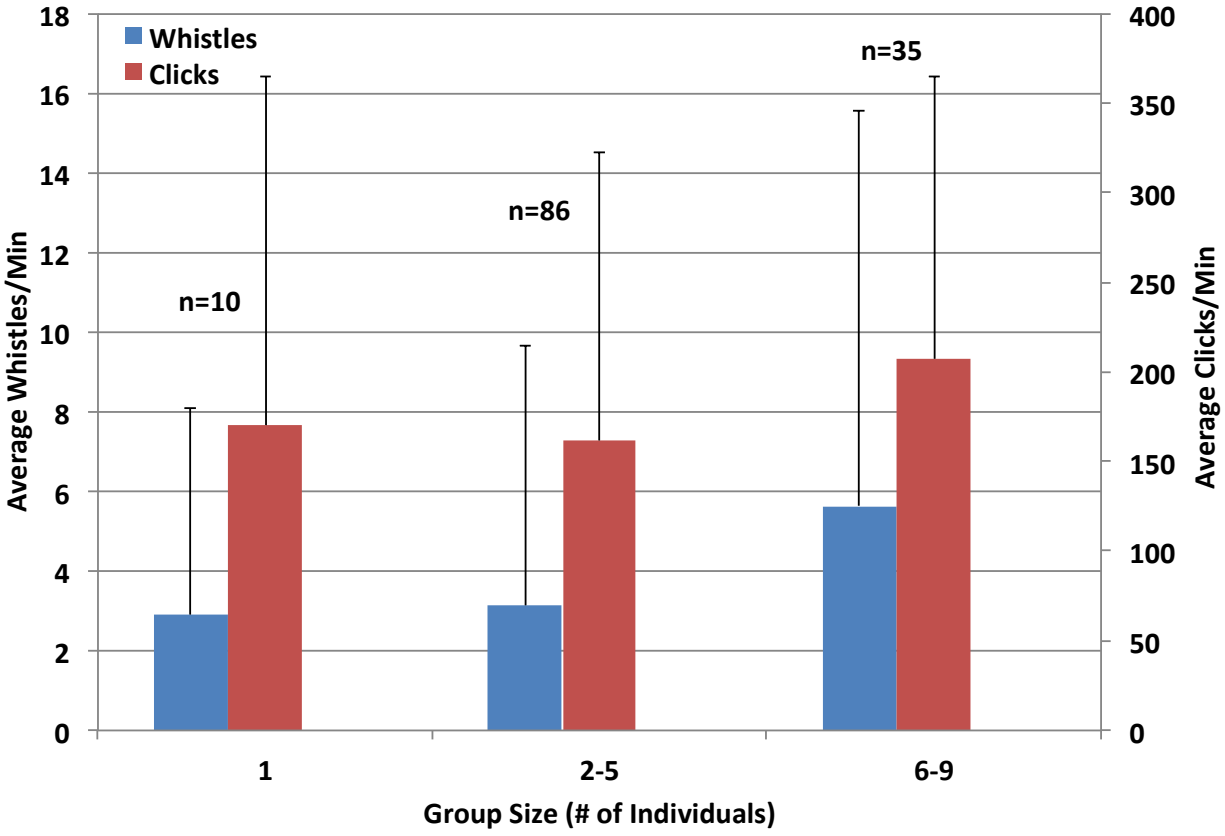


Figure 17. Mean number of whistles per minute and clicks per minute recorded as a function of dolphin group size during the pre-construction phase. Error bars represent one standard deviation.

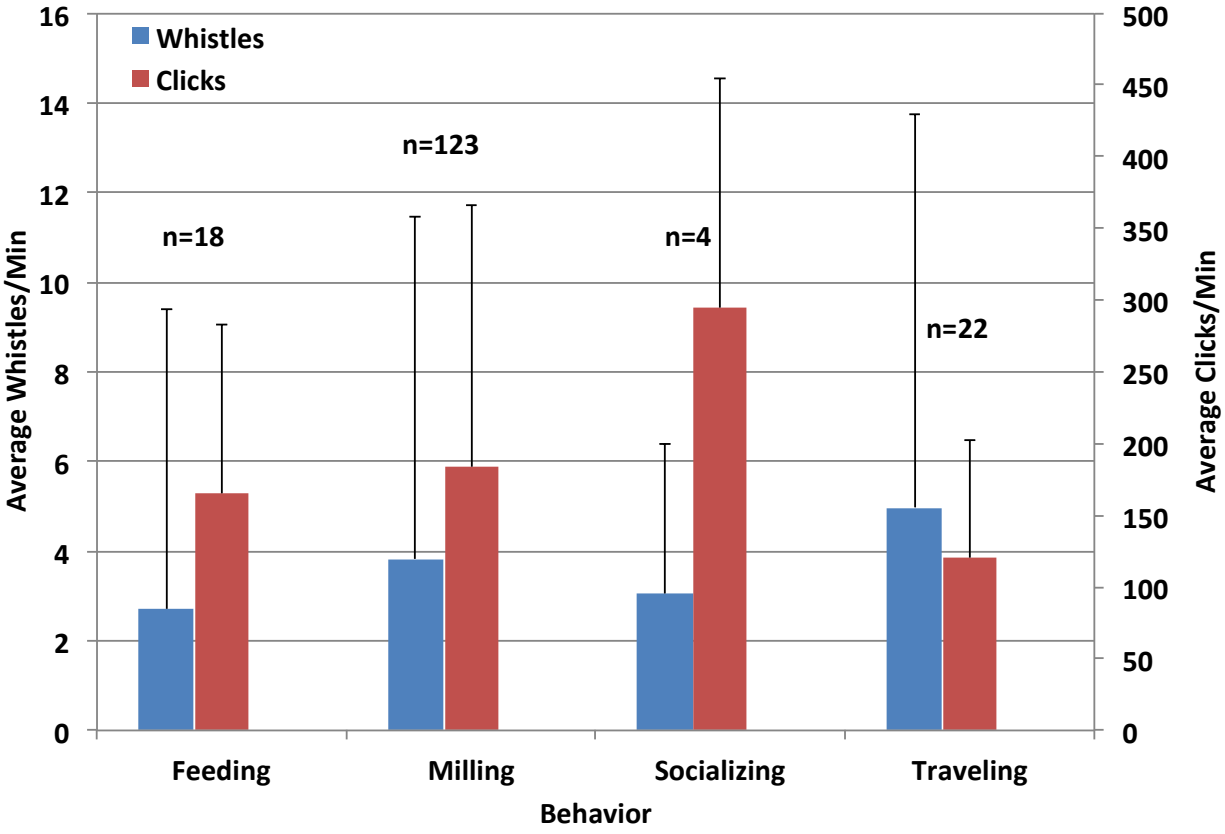


Figure 18. Mean number of whistles per minute and clicks per minute recorded as a function of dolphin behavioural state during the pre-construction phase. Error bars represent one standard deviation.

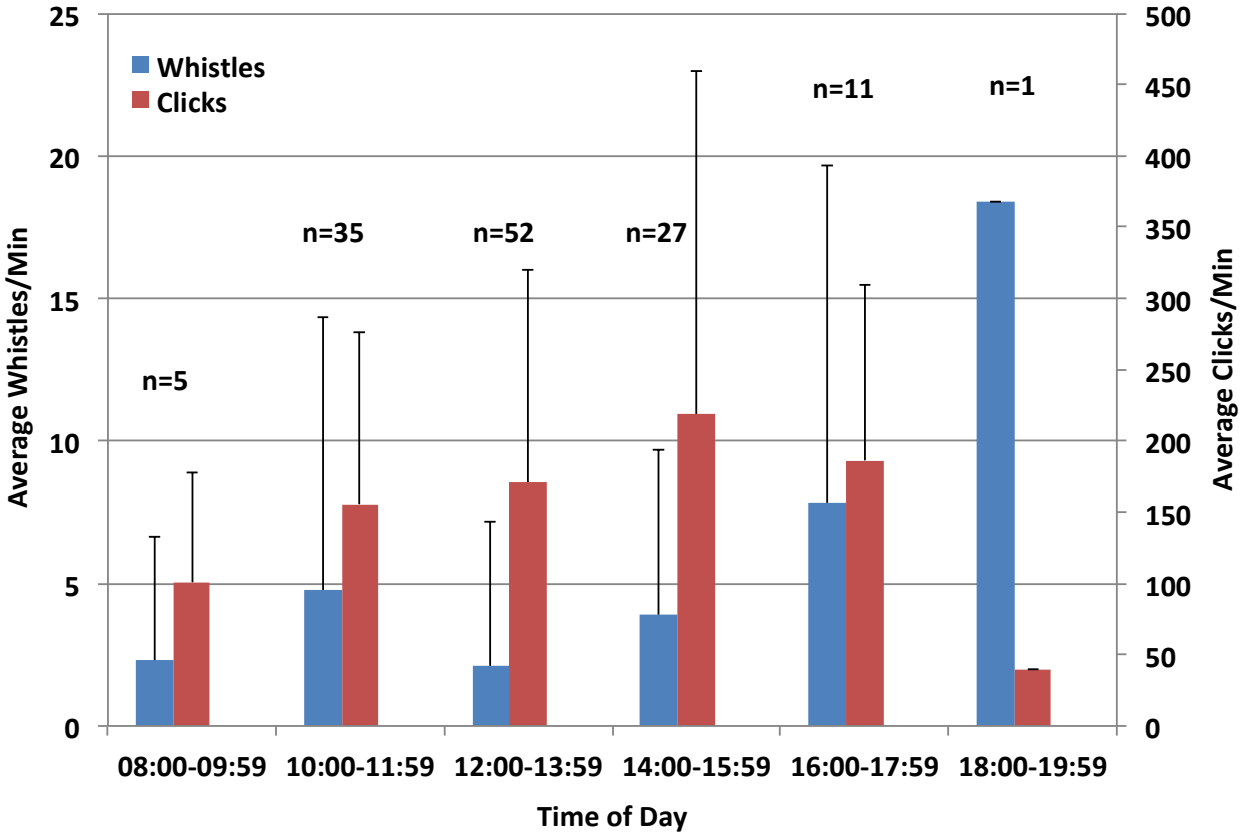


Figure 19. Mean number of whistles per minute and clicks per minute recorded as a function of the time of day during the pre-construction phase. Error bars represent one standard deviation.

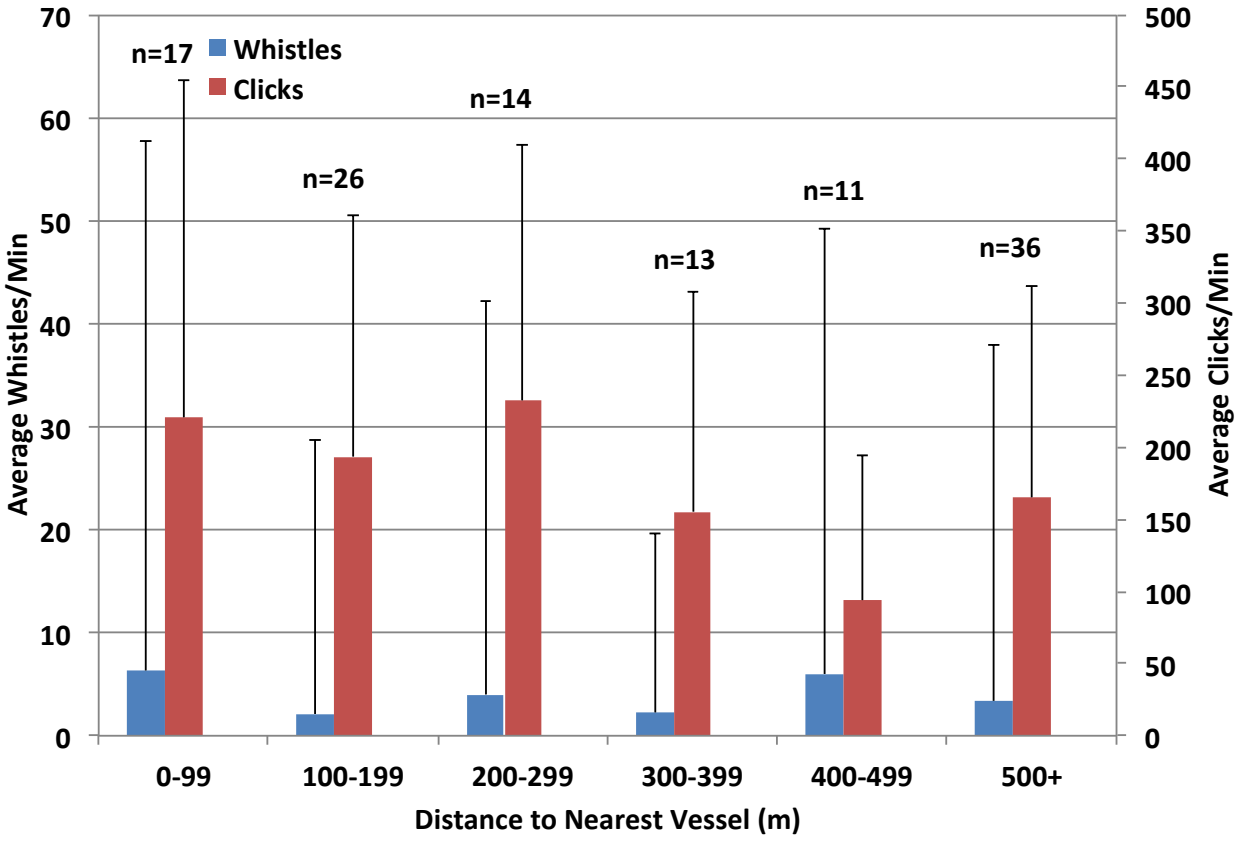


Figure 20. Mean number of whistles per minute and clicks per minute recorded as a function of the distance to the nearest vessel during the pre-construction phase. Error bars represent one standard deviation.

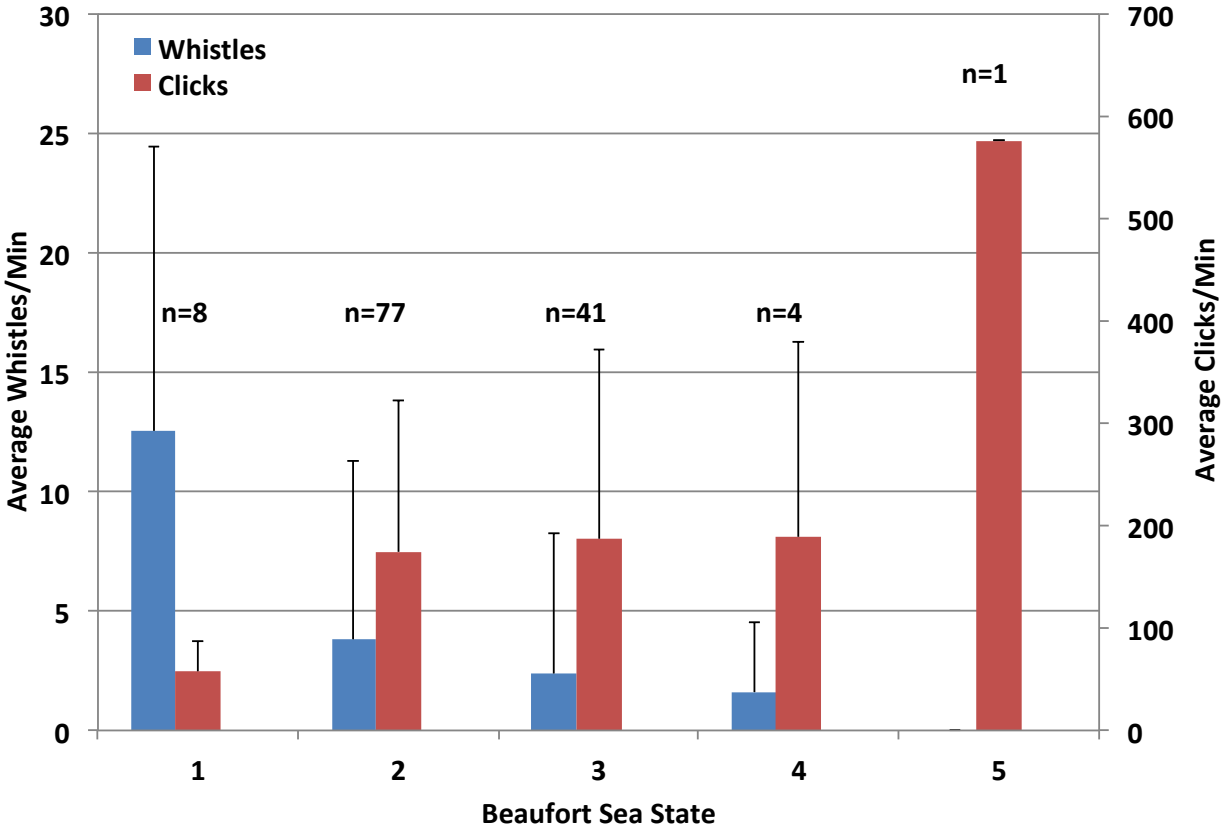


Figure 21. Mean number of clicks per minute and whistles per minute recorded as a function of the Beaufort Sea State during the pre-construction phase. Error bars represent one standard deviation.

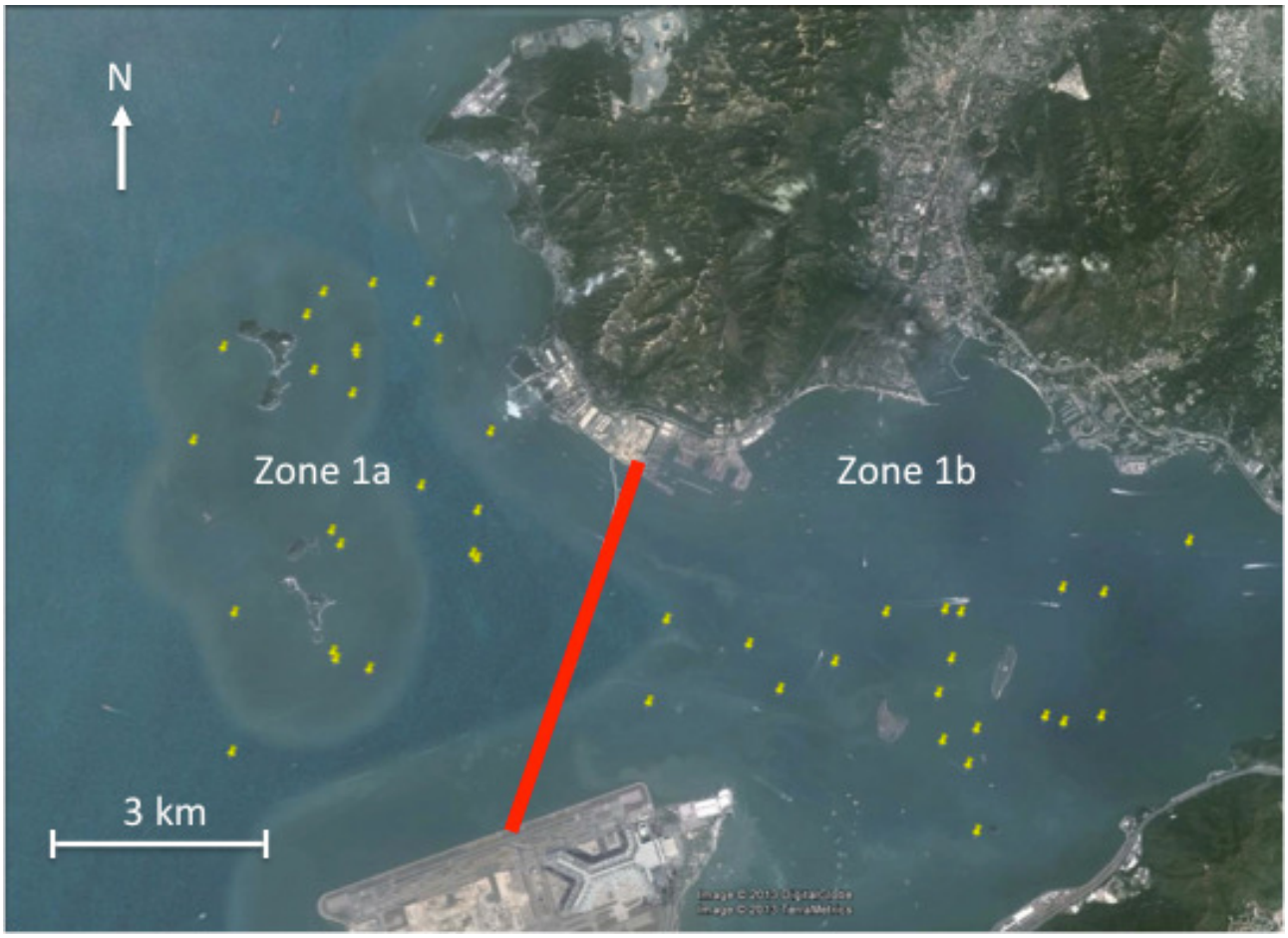


Figure 22. Locations of the first recordings made for each sighting for each day of observational effort. Small yellow place-marks represent GPS coordinates. The red solid line designates the boundary of the two study zones. Map generated in Google Earth 7.0.3.8542.

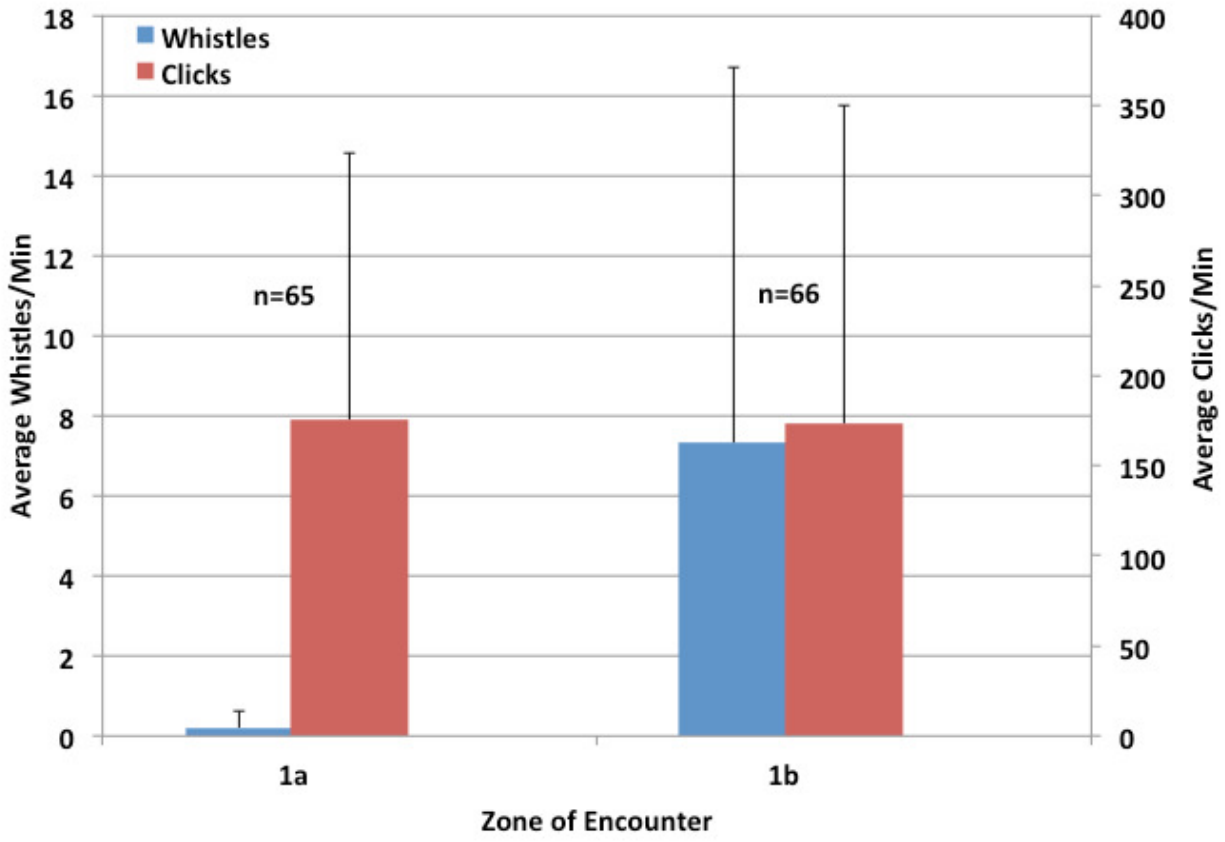


Figure 23. Mean number of whistles per minute and clicks per minute recorded in each zone of the study area during the pre-construction phase. Error bars represent one standard deviation.

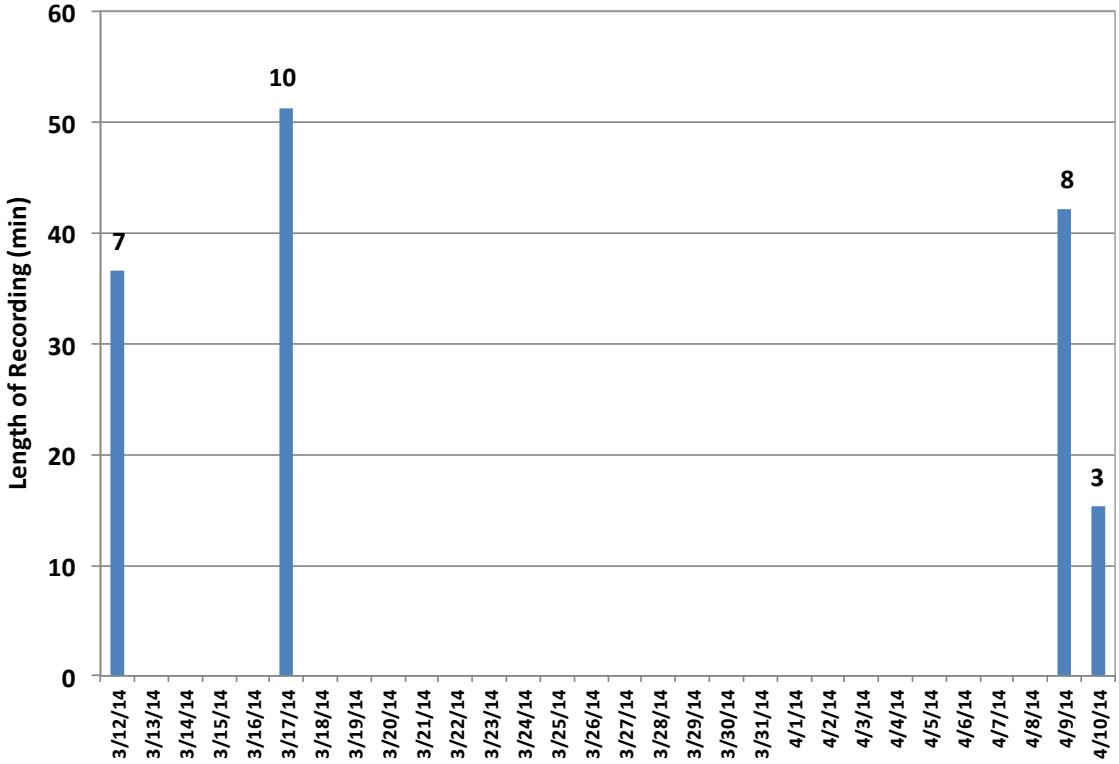


Figure 24. Summed length of recordings in minutes made for each day of observational effort during the construction phase acoustic monitoring in March-April 2014. The values above each column represent the number of 5-minute recordings made per day.

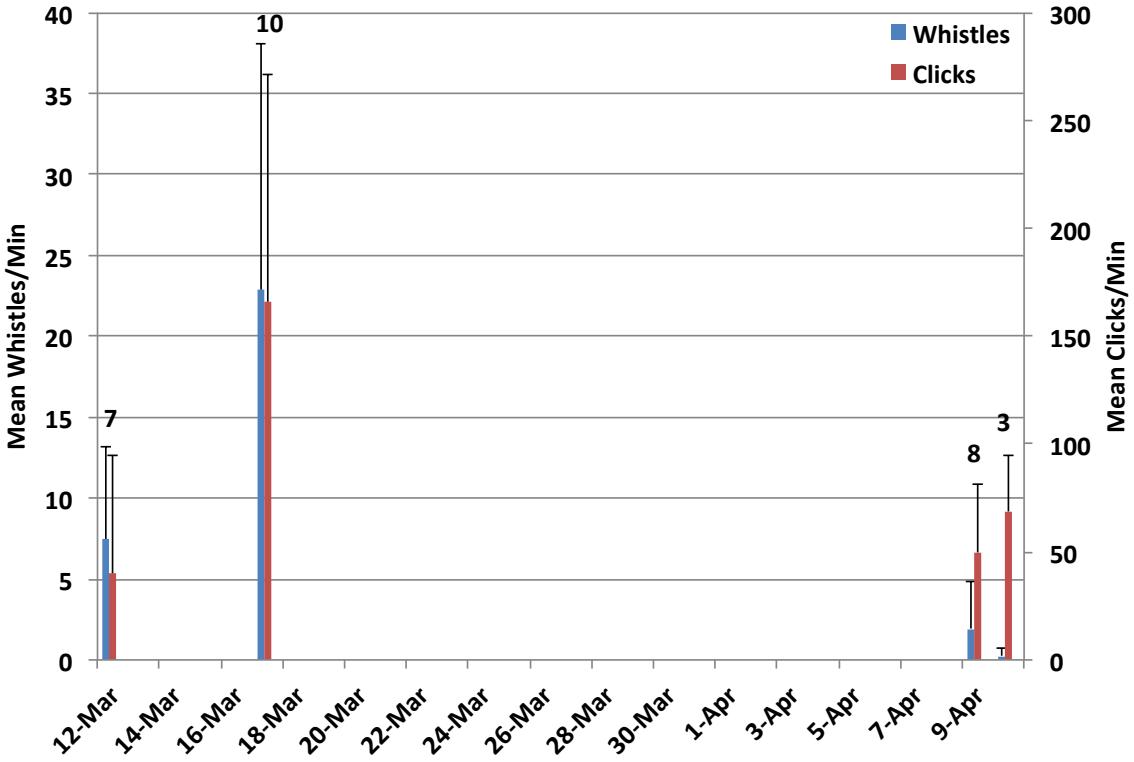


Figure 25. Mean number of clicks and whistles per minute of recording detected for each day of observational effort during the construction phase. Errors bars represent one standard deviation.

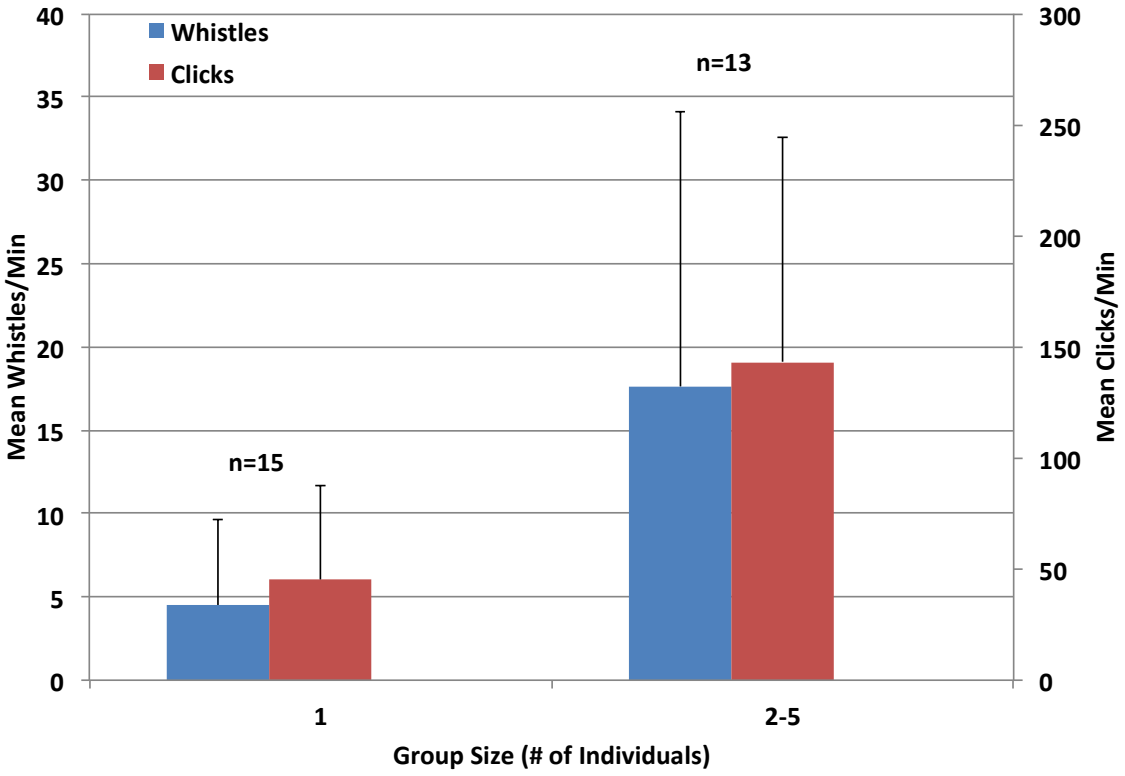


Figure 26. Mean number of whistles per minute and clicks per minute recorded as a function of dolphin group size during the construction phase. Error bars represent one standard deviation.

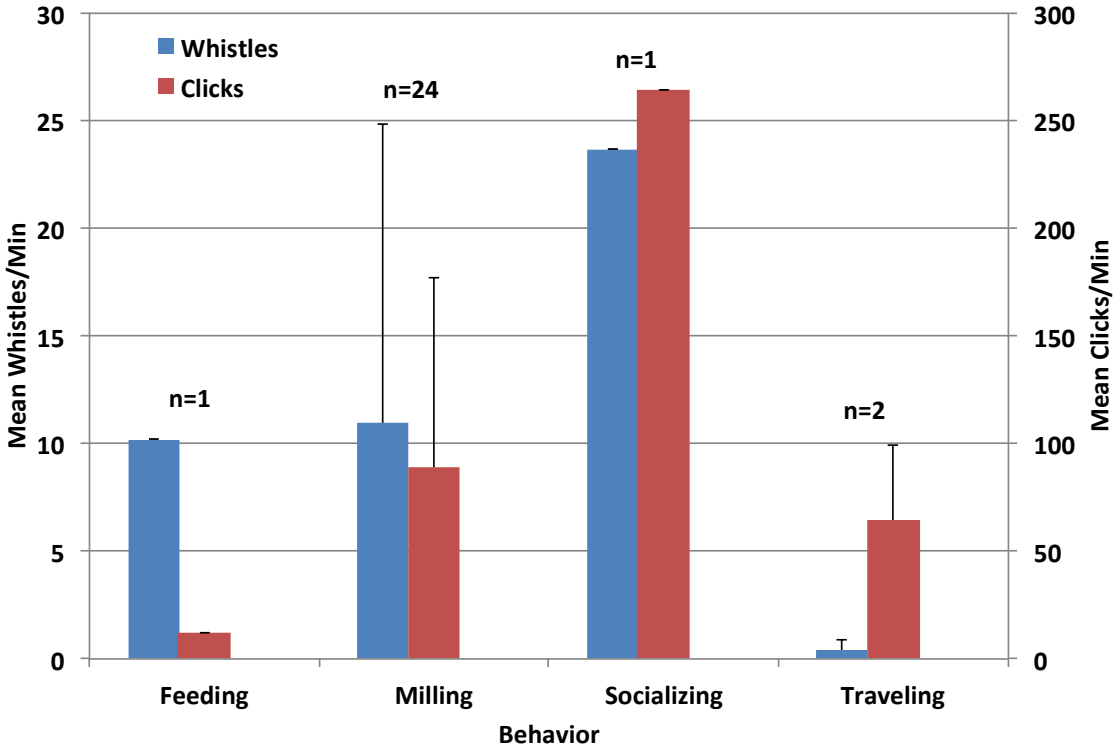


Figure 27. Mean number of whistles per minute and clicks per minute recorded as a function of dolphin behavioural state during the construction phase. Error bars represent one standard deviation.

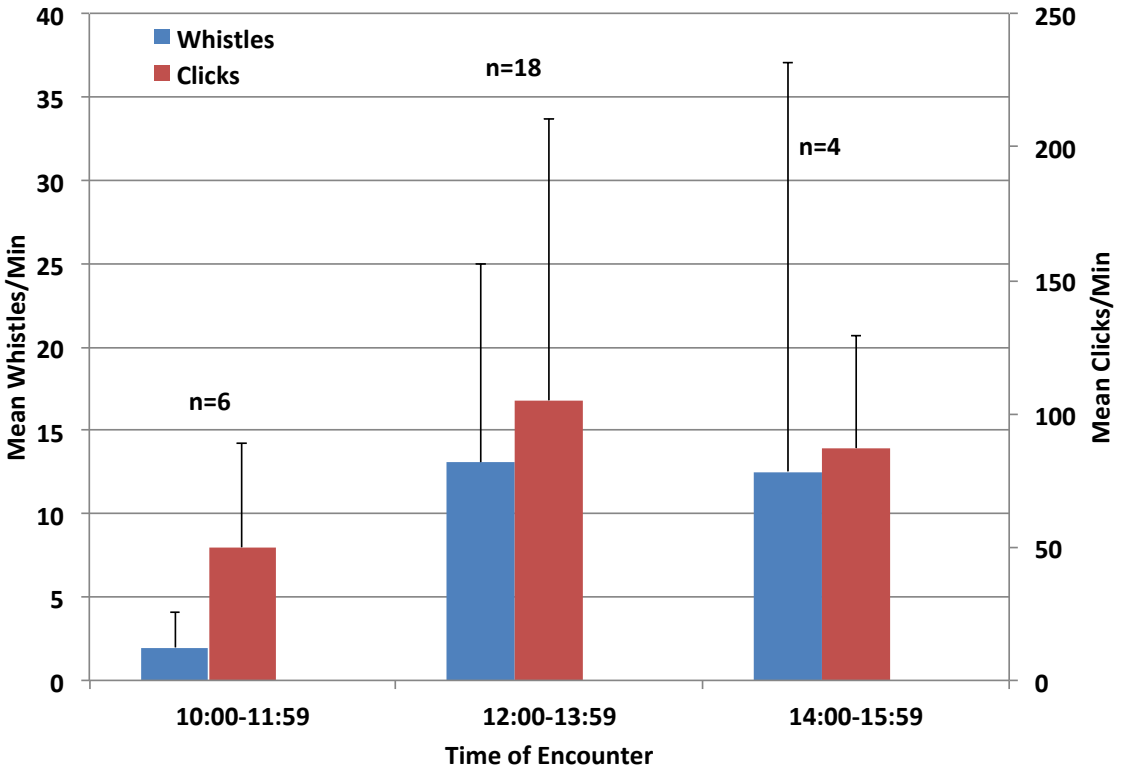


Figure 28. Mean number of whistles per minute and clicks per minute recorded as a function of the time of day during the construction phase. Error bars represent one standard deviation.

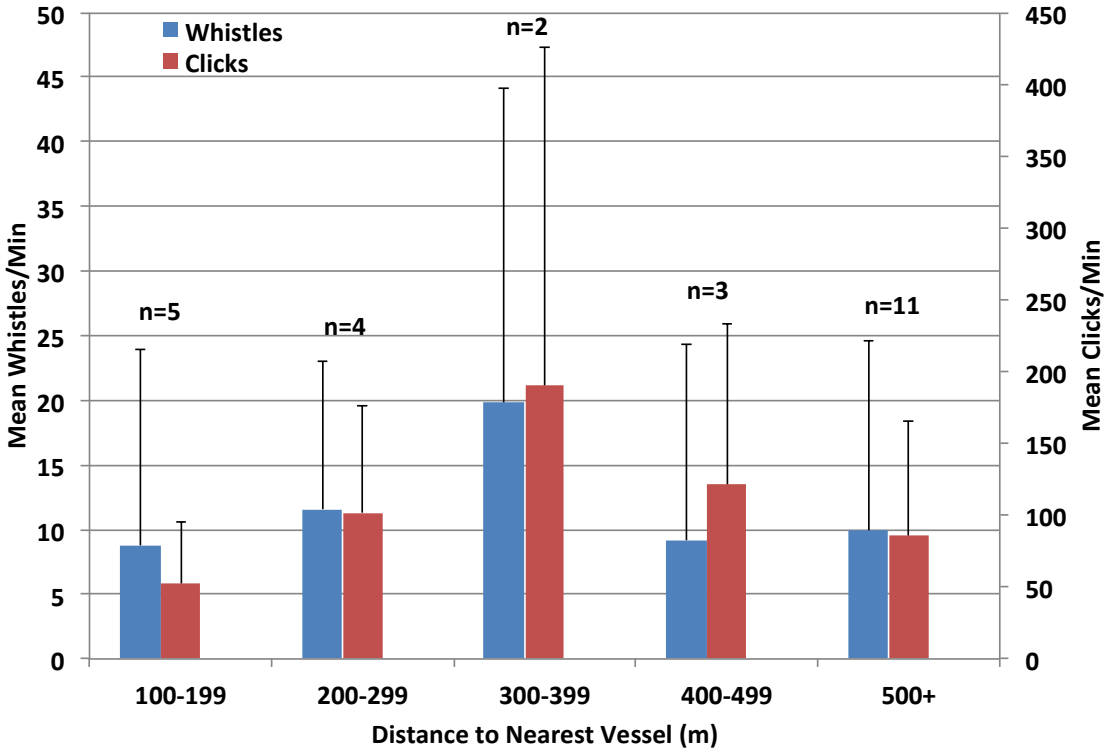


Figure 29. Mean number of whistles per minute and clicks per minute recorded as a function of the distance to the nearest vessel during the construction phase. Error bars represent one standard deviation.

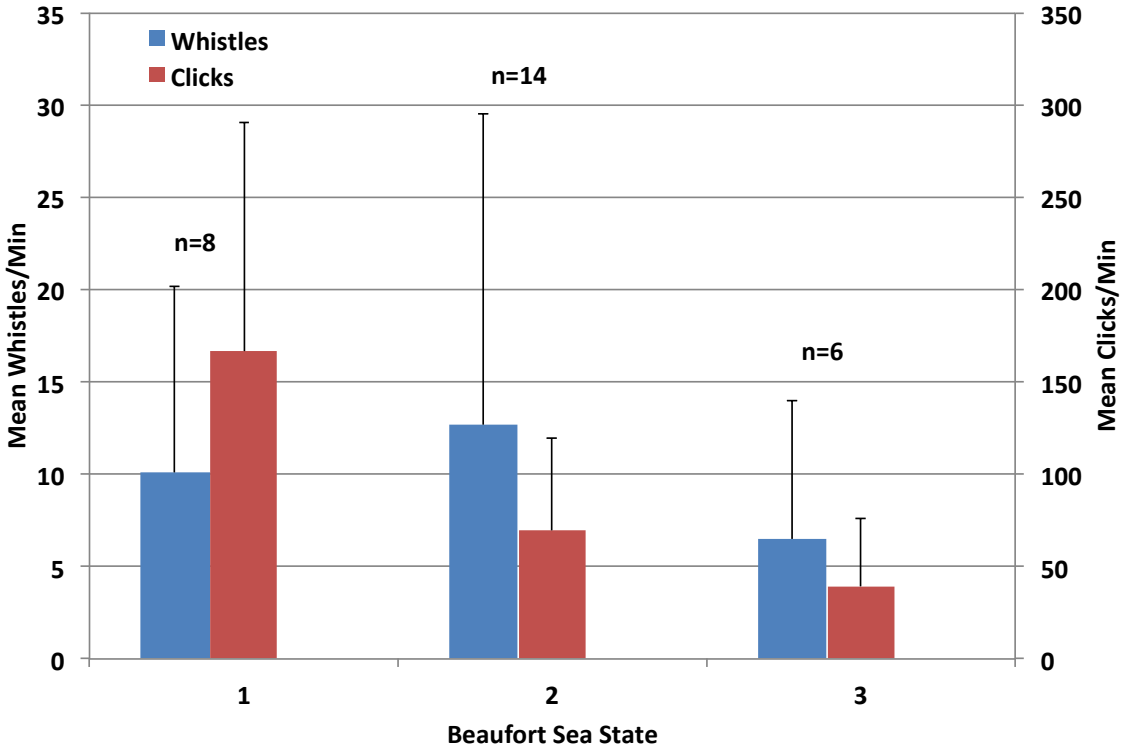


Figure 30. Mean number of clicks per minute and whistles per minute recorded as a function of the Beaufort Sea State during the construction phase. Error bars represent one standard deviation.

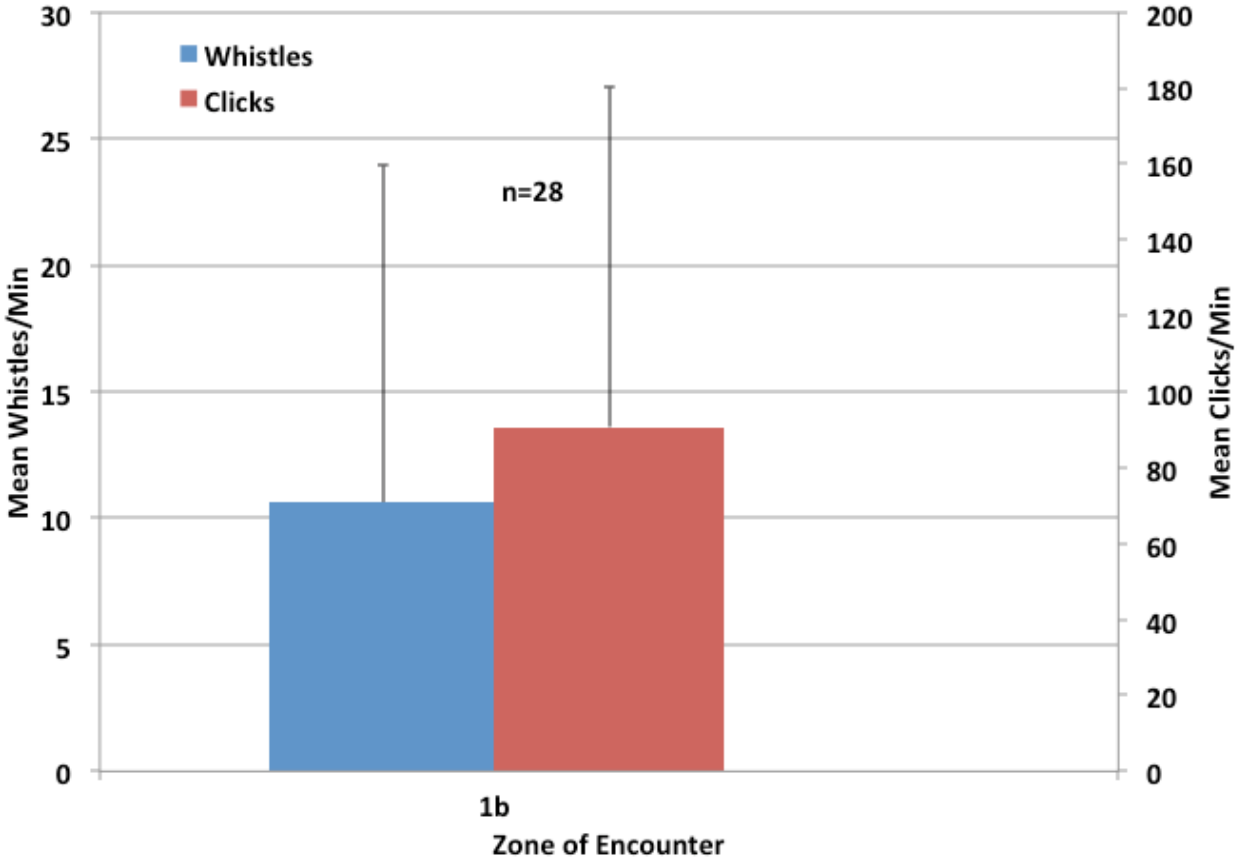


Figure 31. Mean number of whistles per minute and clicks per minute recorded in each zone of the study area during the construction phase. Error bars represent one standard deviation.

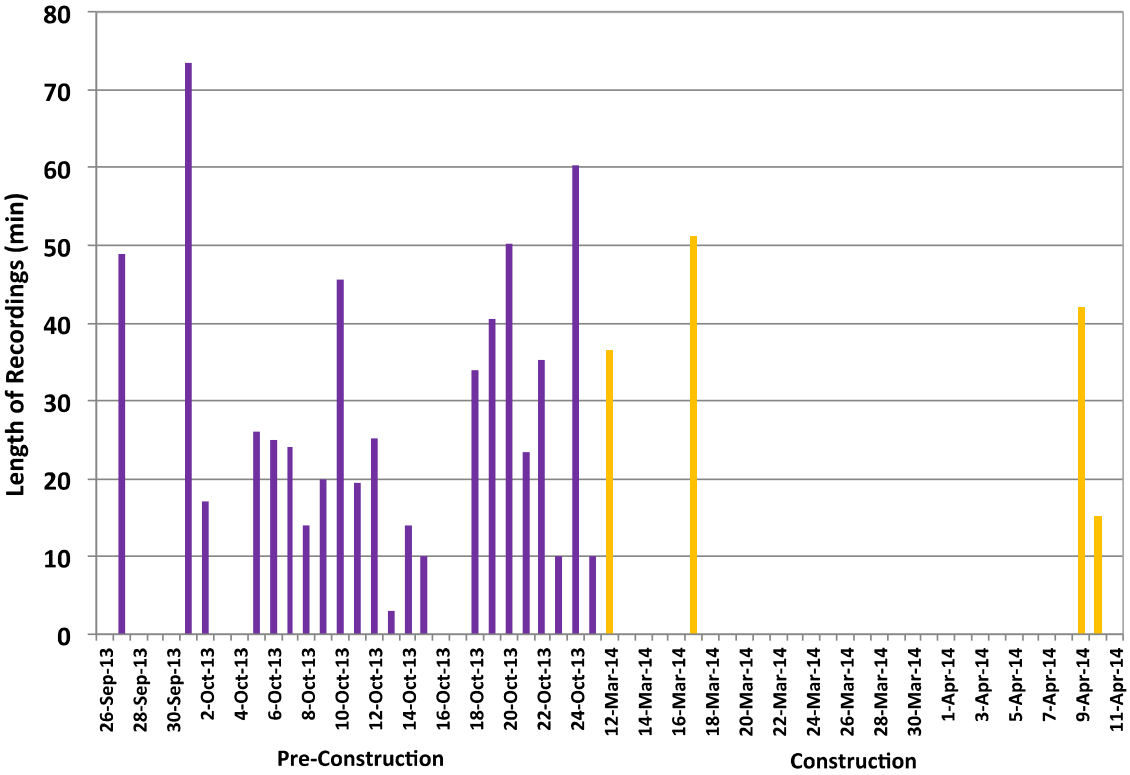


Figure 32. Daily summed length of recordings obtained during the two phases of the study.

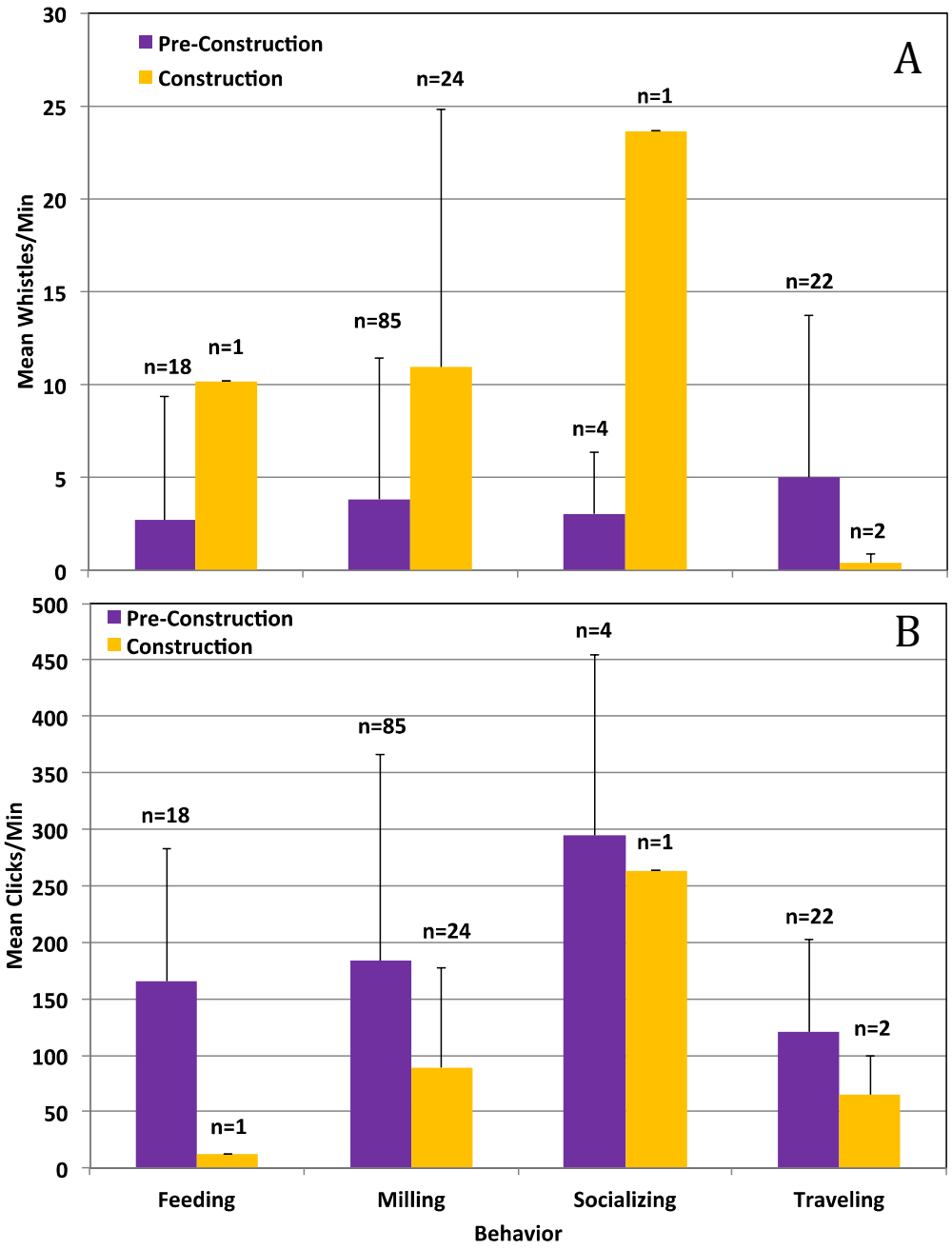


Figure 33. Comparison of mean (A) whistling and (B) clicking rates recorded during the pre-construction and construction phases as a function of behavioral state. Error bars represent one standard deviation.

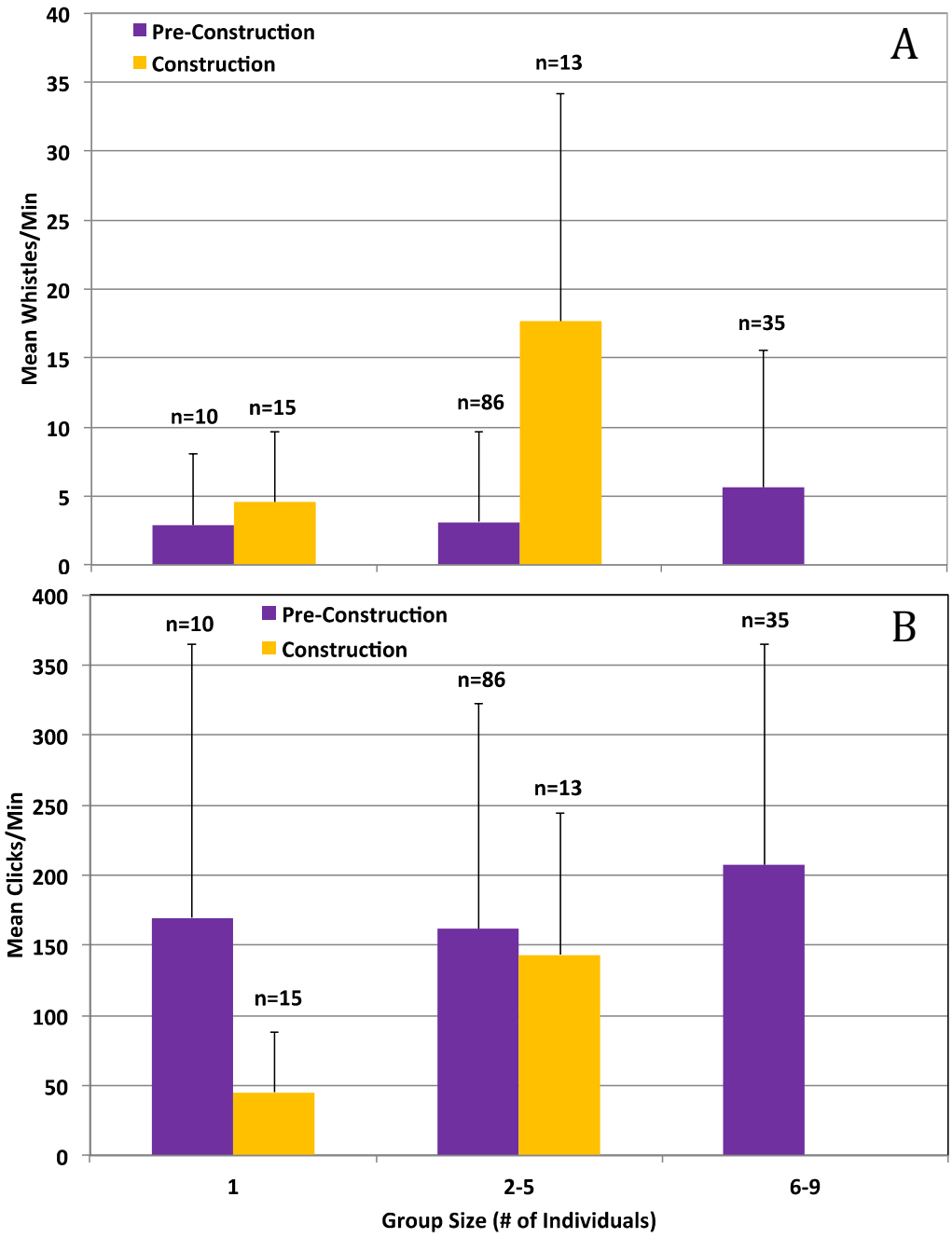


Figure 34. Comparison of mean (A) whistling and (B) clicking rates between the pre-construction and construction phases as a function of group size. Error bars represent one standard deviation.

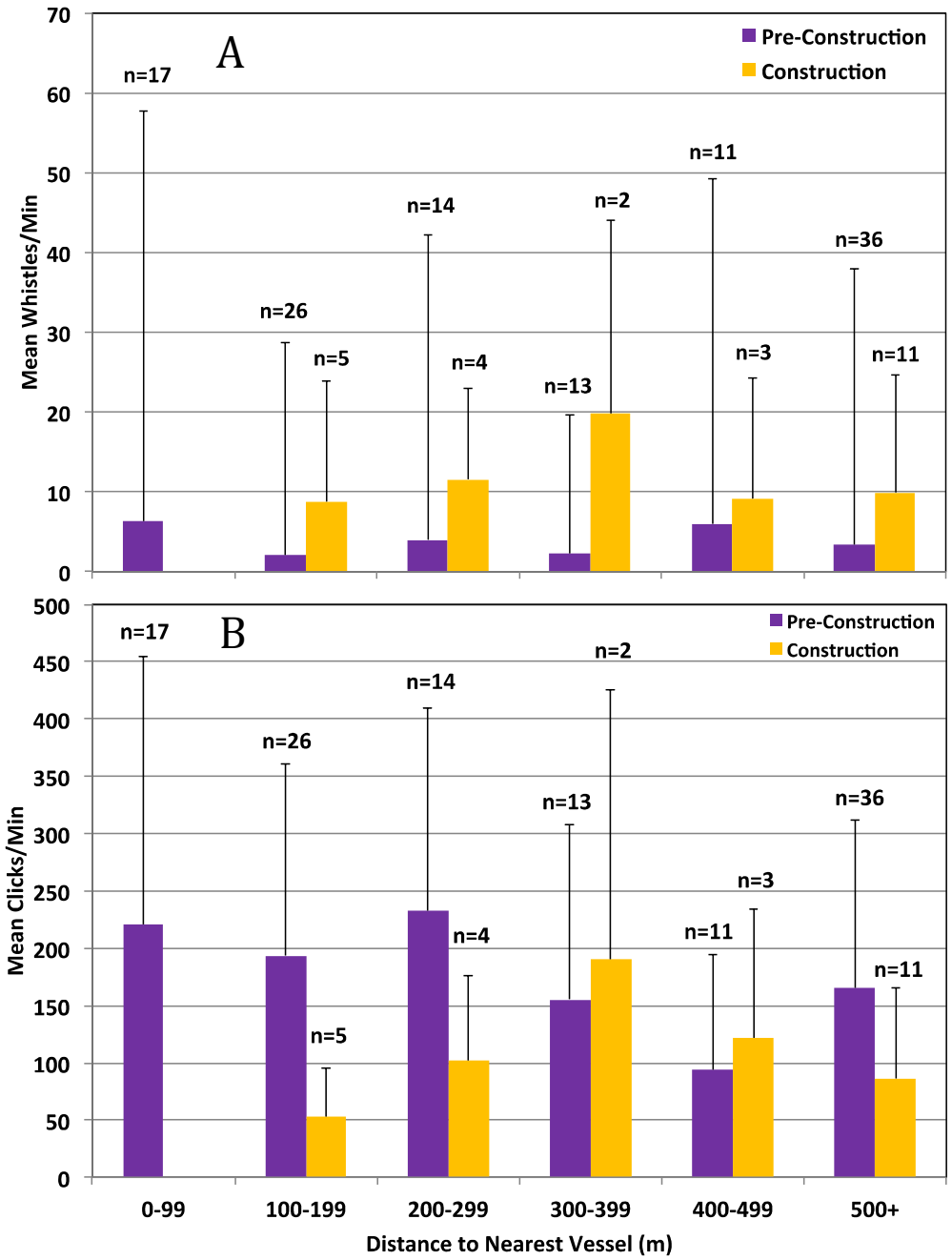


Figure 35. Comparison of mean (A) whistling and (B) clicking rates between the pre-construction and construction phases as a function of distance to the nearest vessel. Error bars represent one standard deviation.

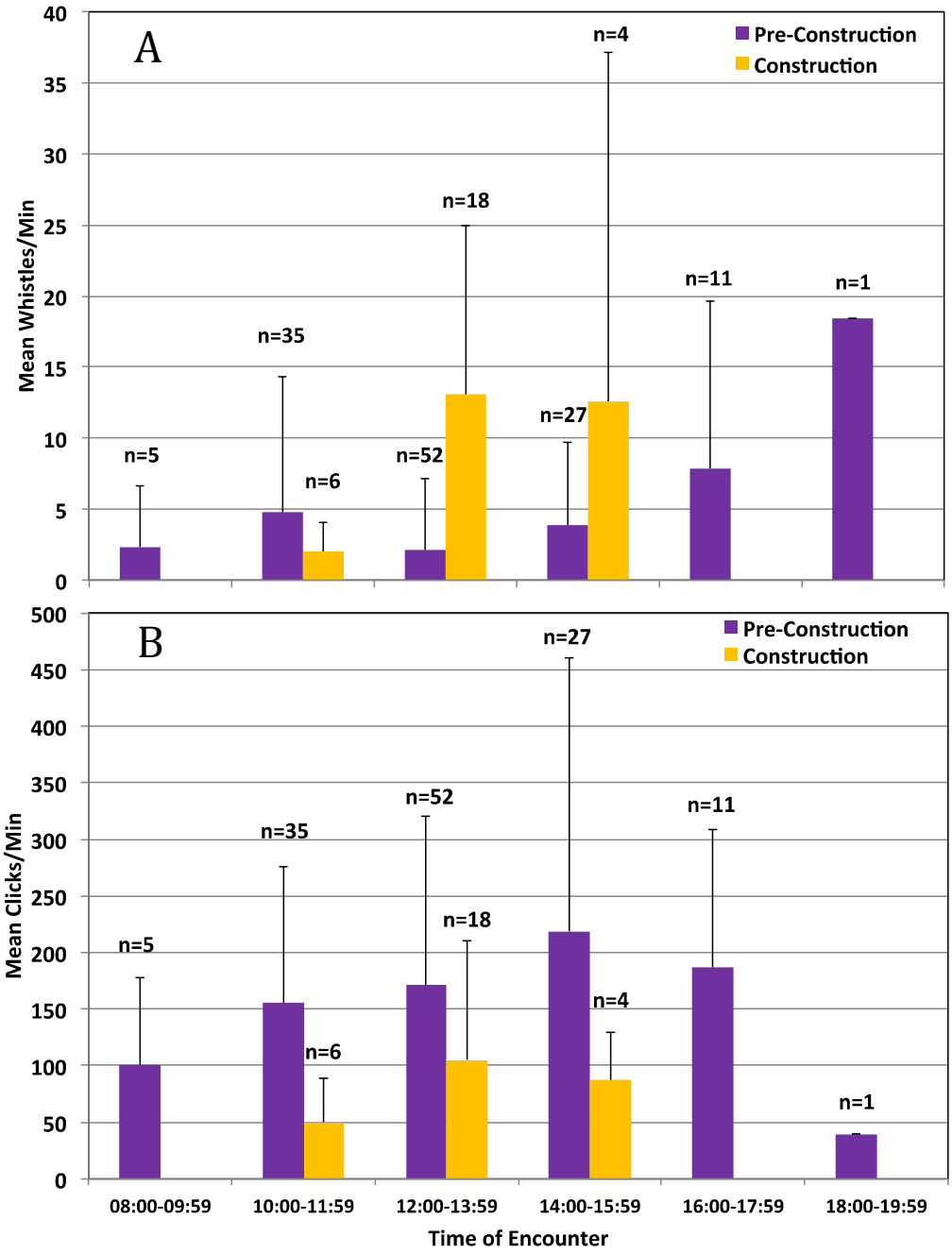


Figure 36. Comparison of mean (A) whistling and (B) clicking rates between the pre-construction and construction phases as a function of distance to the time of day. Error bars represent one standard deviation.

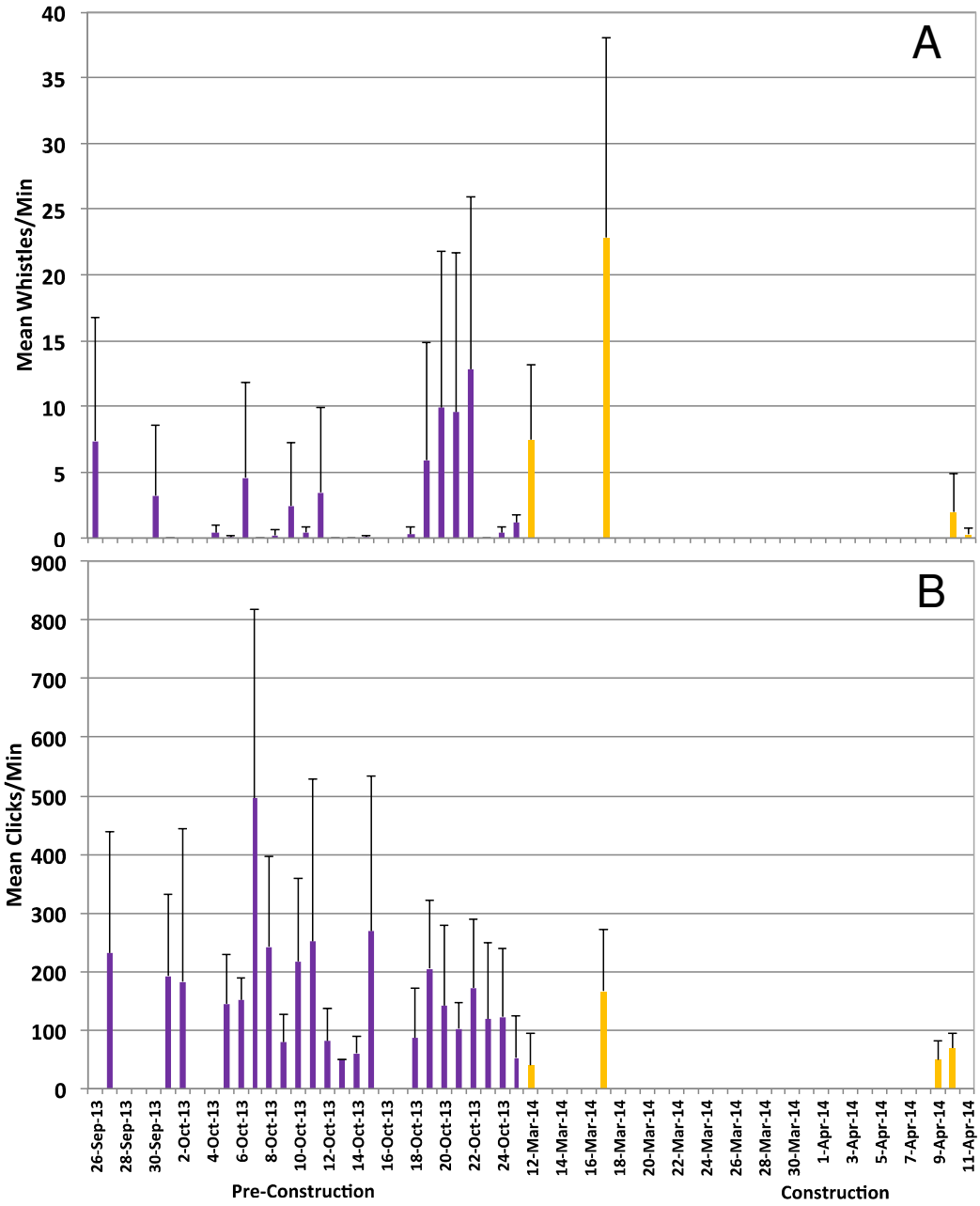


Figure 37. Averaged daily (A) whistling and (B) clicking rates for the pre- and construction phases of the study. Error bars represent one standard deviation.

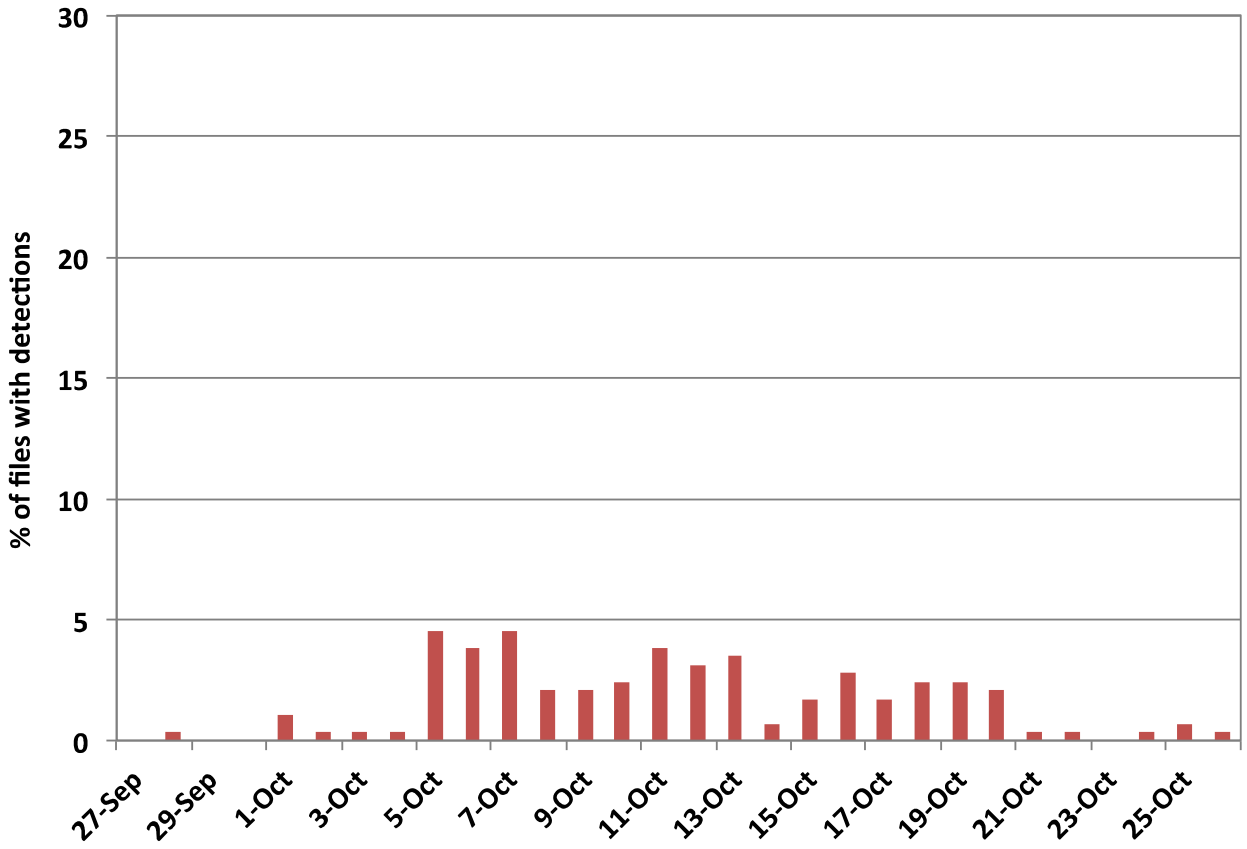


Figure 38. Histogram of the percentage of EAR recordings with dolphin detections made at site C1 (Bridge Alignment Area) during 30 days of the pre-construction deployment period.

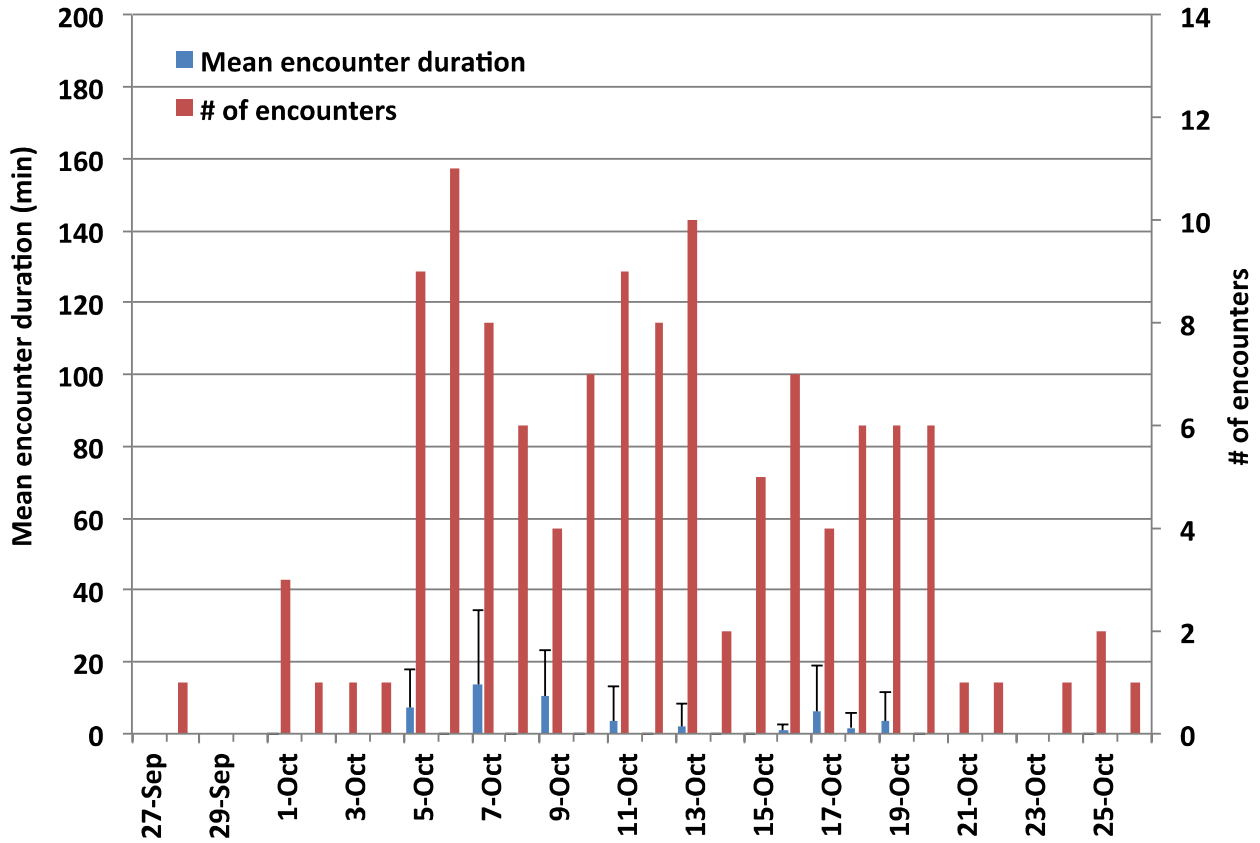


Figure 39. Numbers of dolphin encounters and the average encounter duration for each day recorded on the EAR at site C1 (Bridge Alignment Area) during the pre-construction period. Error bars represent one standard deviation.

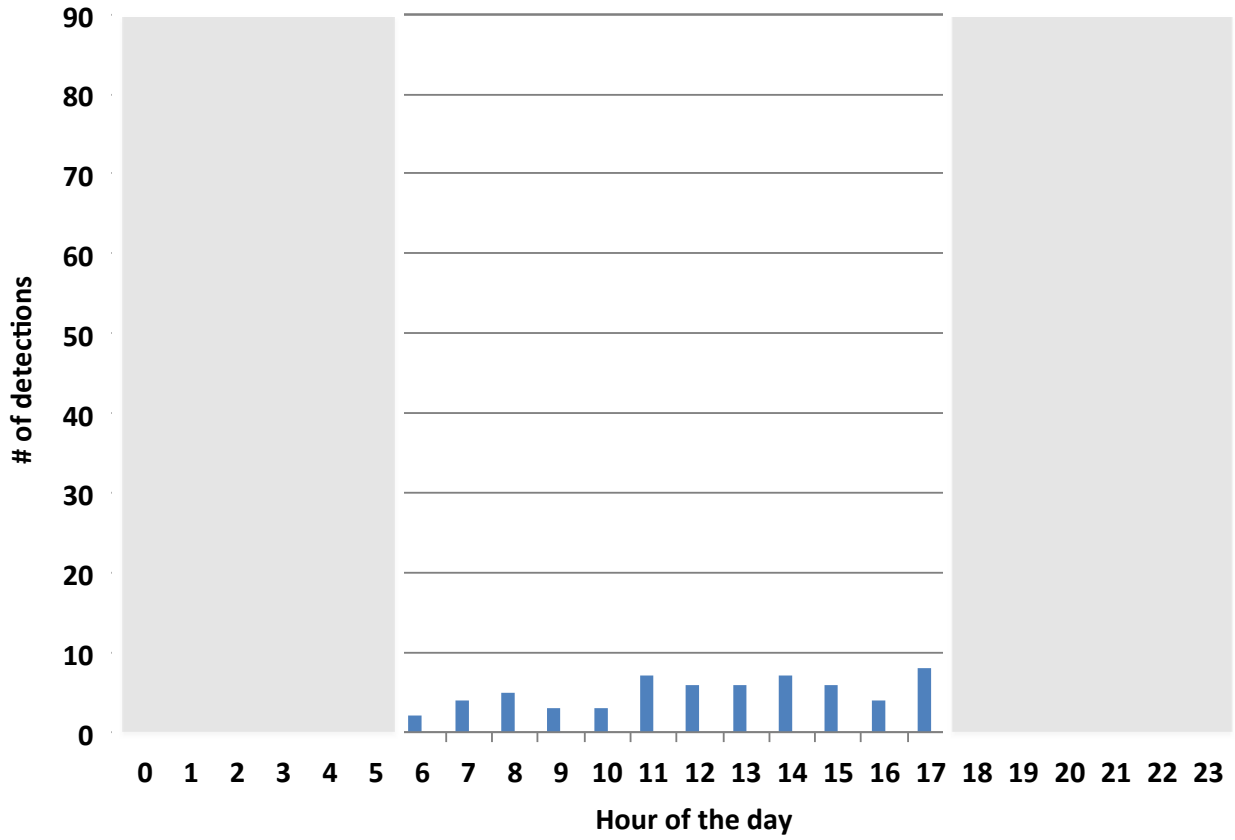


Figure 40. Detections of dolphin signals at site C1 (Bridge Alignment Area) as a function of the hour of the day during the pre-construction period. Values are the total number of detections in each hour across the entire monitoring period.

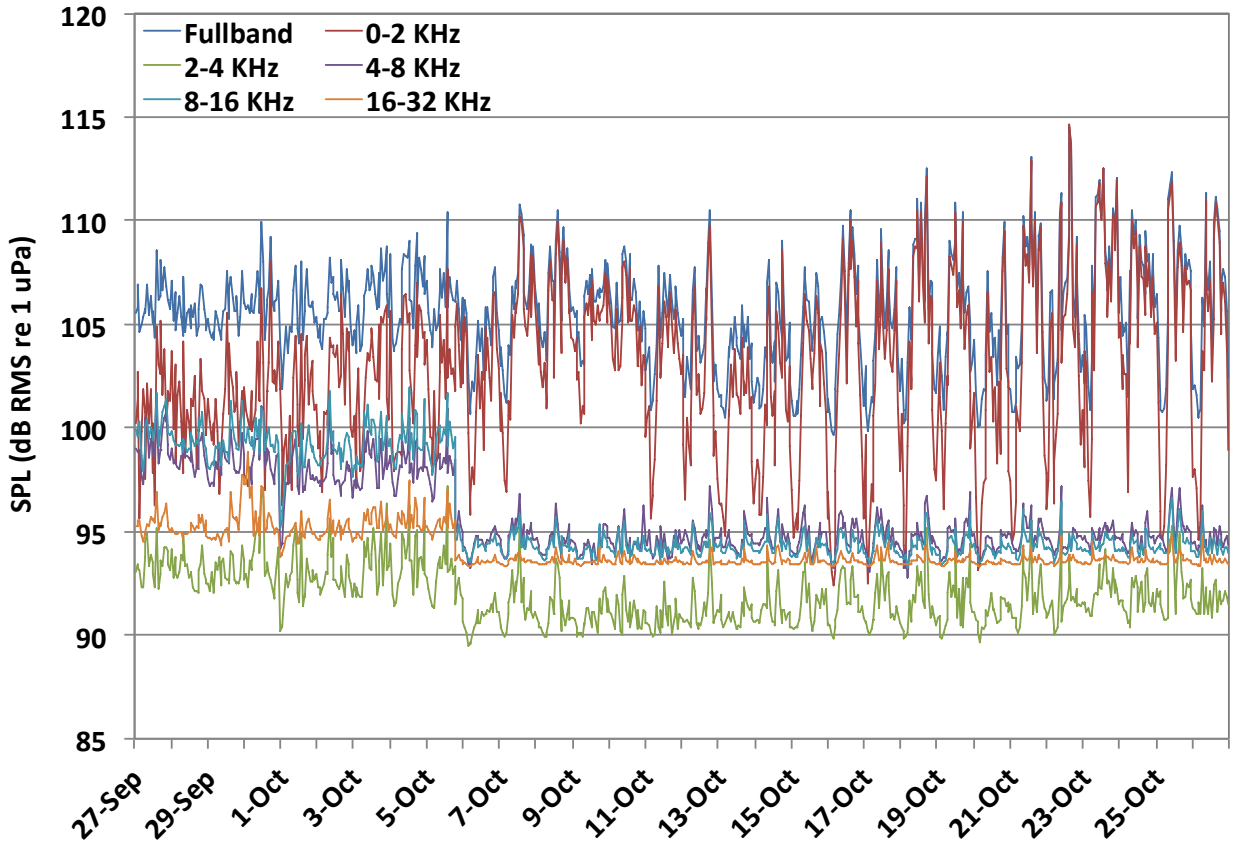


Figure 41. Root-mean-square (RMS) sound pressure level (SPL) in 1-octave bands and full bandwidth averaged hourly over the pre-construction deployment period at site C1 (Bridge Alignment Area).

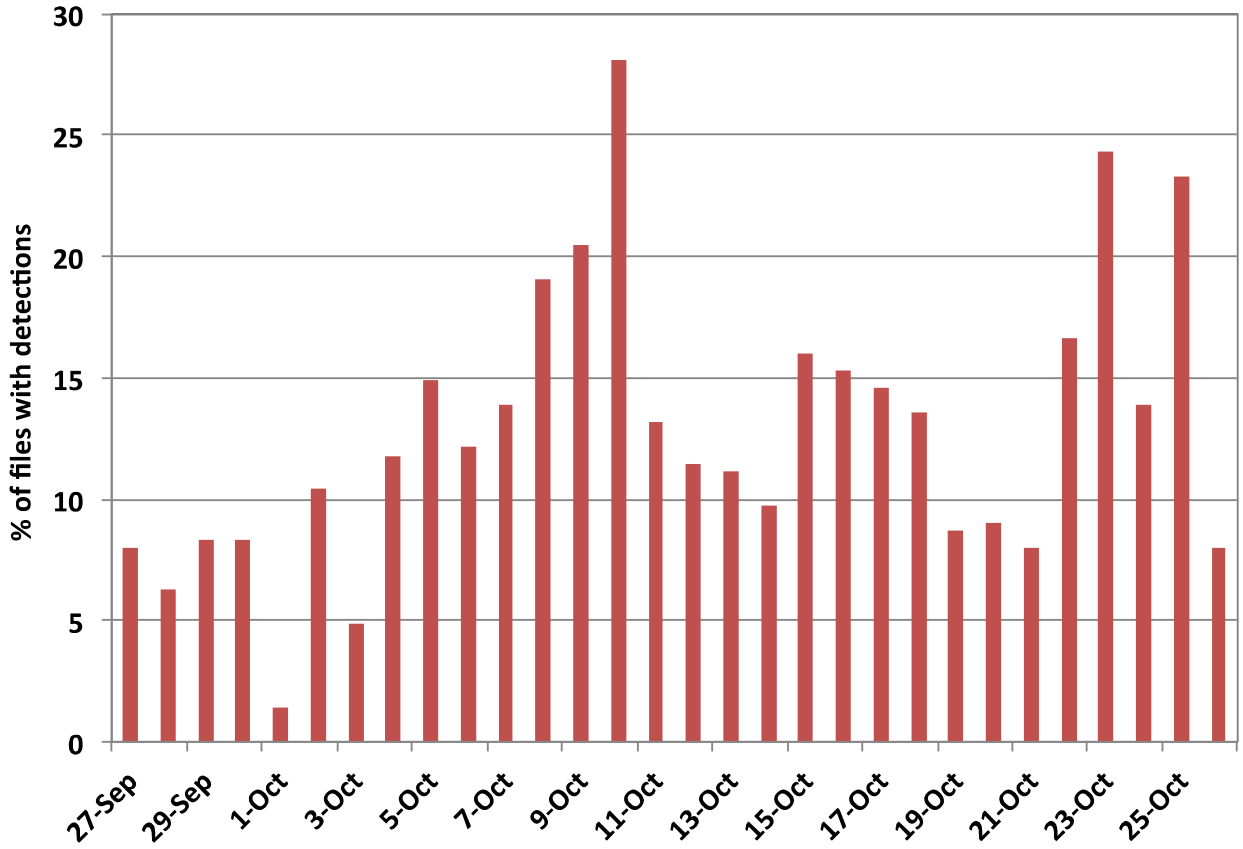


Figure 42. Histogram of the percentage of EAR recordings at site C2 (between Lung Kwu Chau and Sha Chau), with dolphin detections made during 30 days of the pre-construction deployment period.

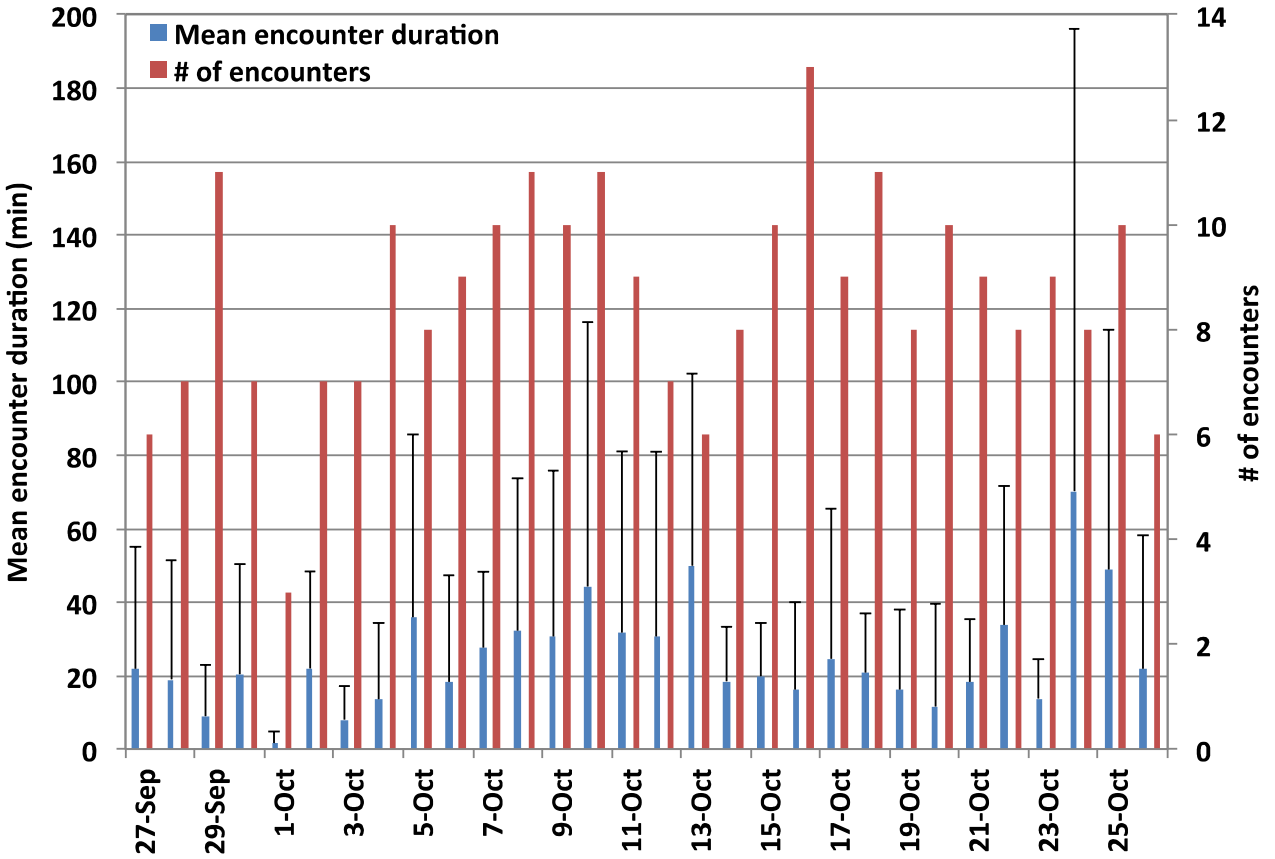


Figure 43. Number of dolphin encounters and the average encounter duration for each day recorded on the EAR at site C2 (between Lung Kwu Chau and Sha Chau) during the pre-construction period. Error bars represent one standard deviation.

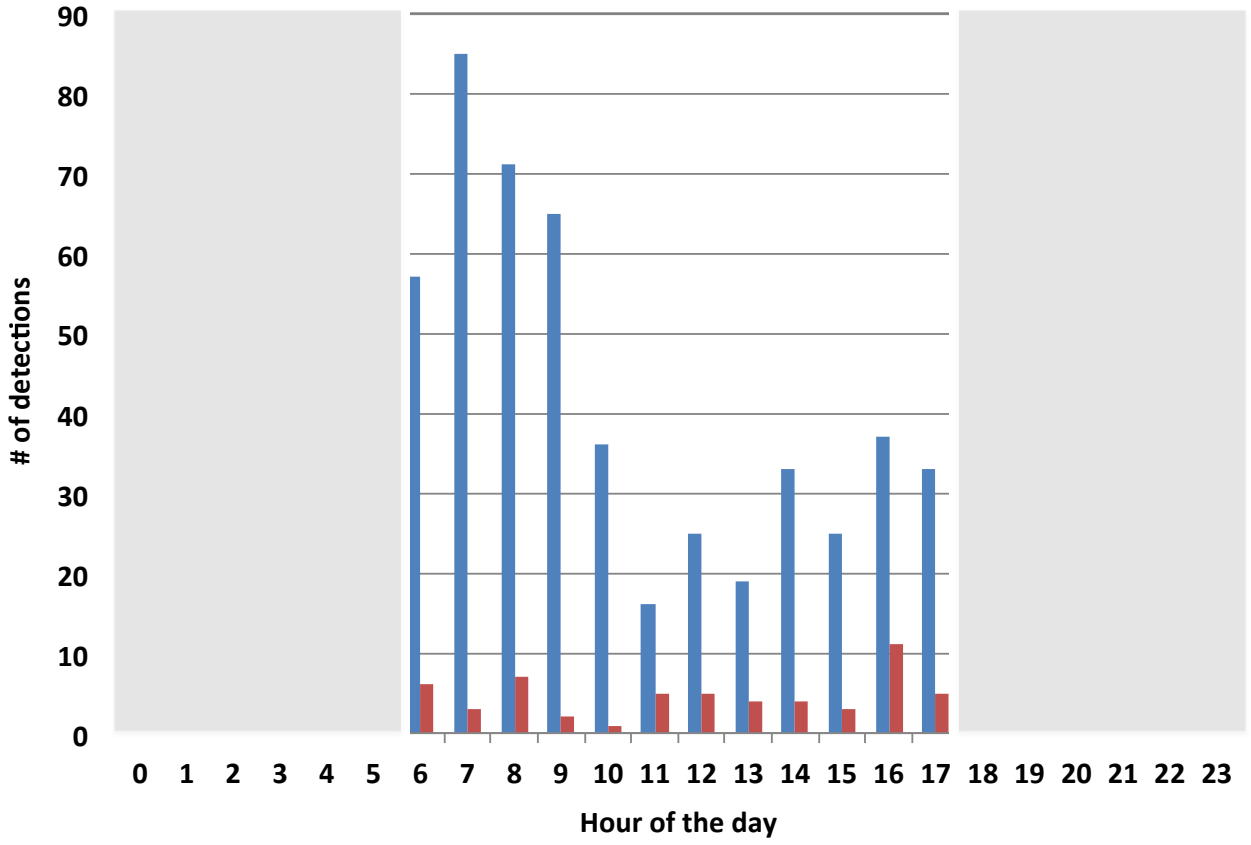


Figure 44. Detections of dolphin signals at site C2 (between Lung Kwu Chau and Sha Chau) as a function of the hour of the day during the pre-construction period. Values are the total number of detections in each hour across the entire monitoring period.

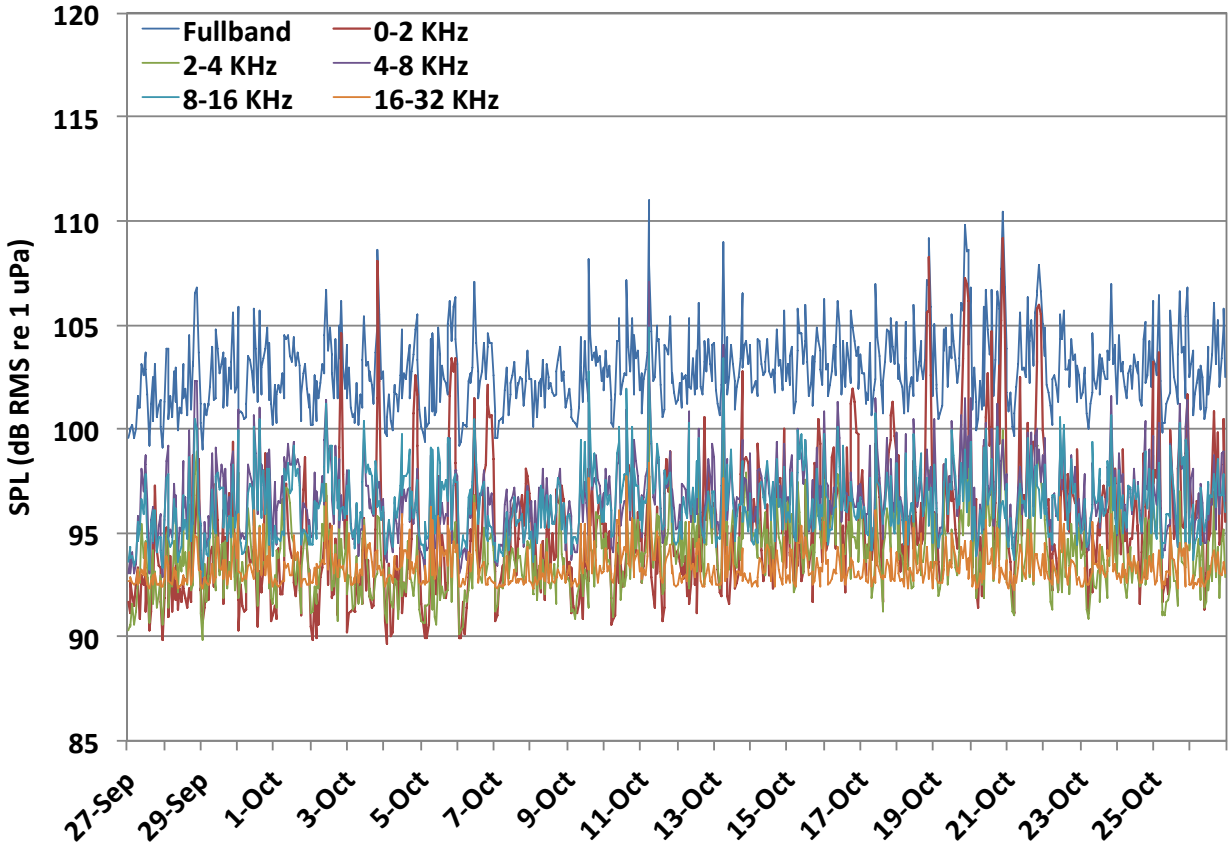


Figure 45. Root-mean-square (RMS) sound pressure level (SPL) in 1-octave bands and full bandwidth averaged hourly over the deployment period at site C2 (between Lung Kwu Chau and Sha Chau) during the pre-construction period.

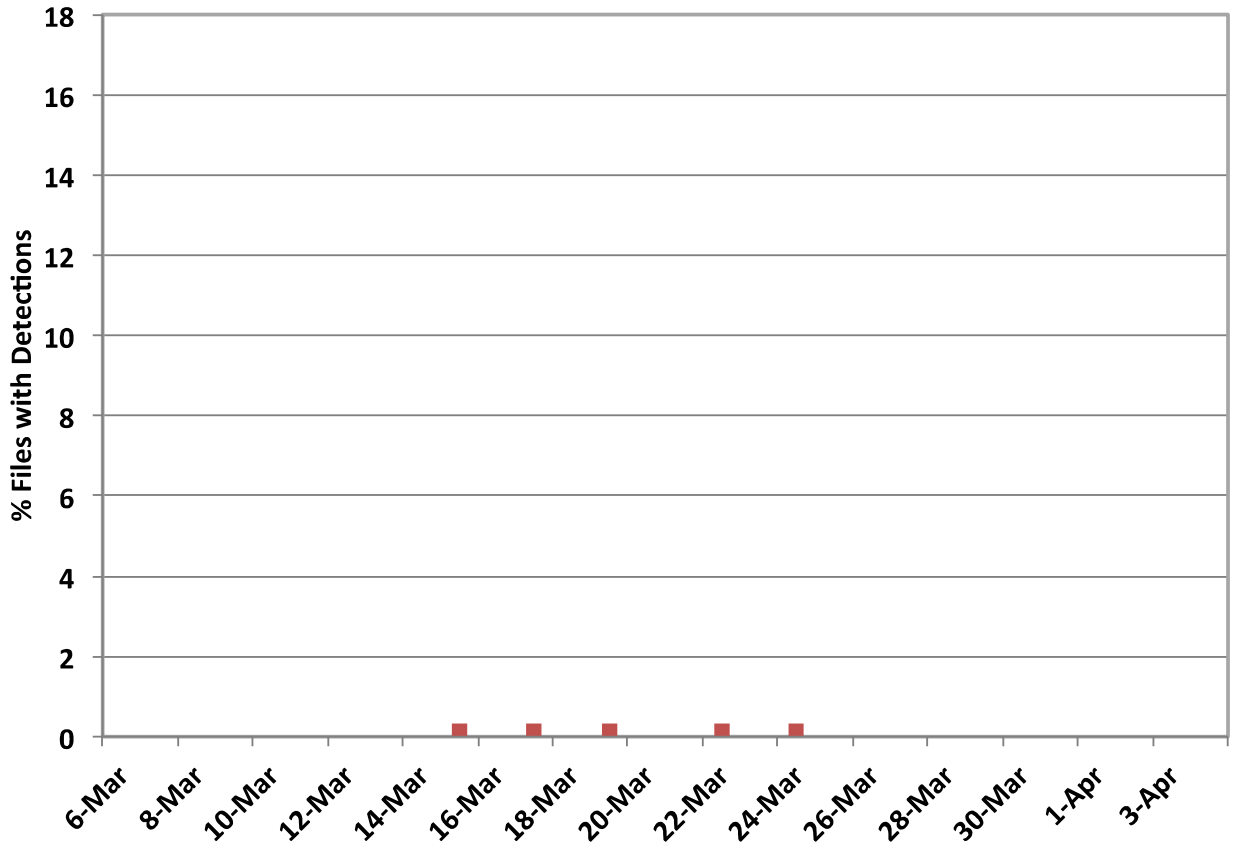


Figure 46. Histogram of the percentage of EAR recordings with dolphin detections made at site C1 (Bridge Alignment Area) during 30 days of the construction deployment period.

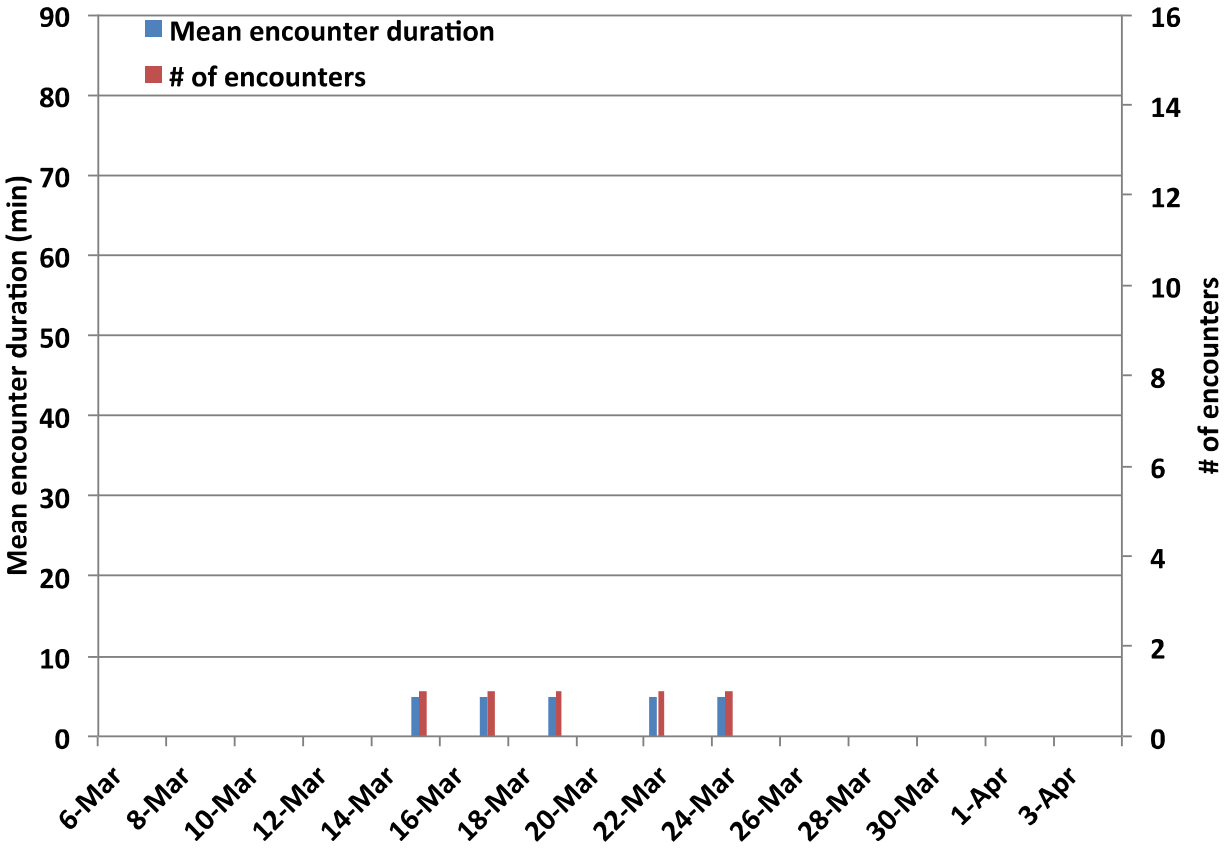


Figure 47. Number of dolphin encounters and the average encounter duration for each day recorded on the EAR at site C1 (Bridge Alignment Area) during the construction period.

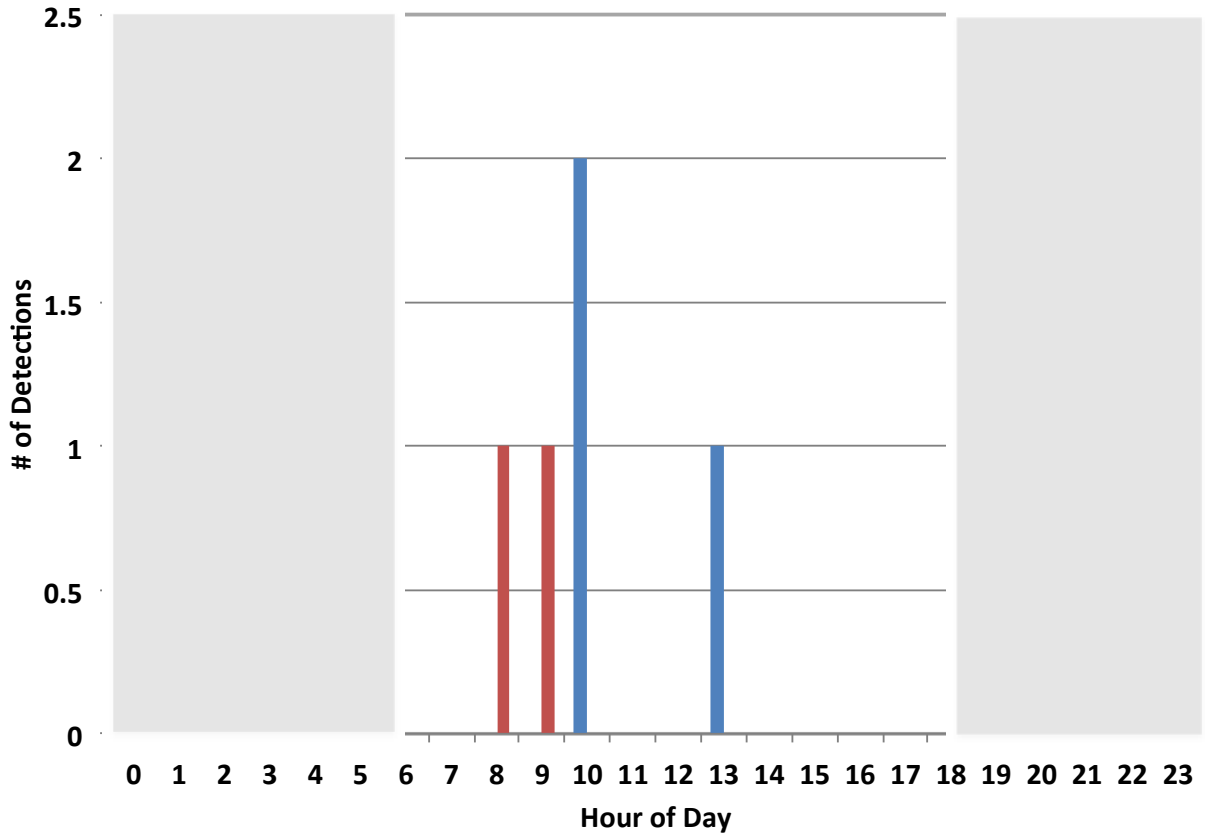


Figure 48. Detections of dolphin signals at site C1 (Bridge Alignment Area) as a function of the hour of the day during the construction period. Values are the total number of detections in each hour across the entire monitoring period.

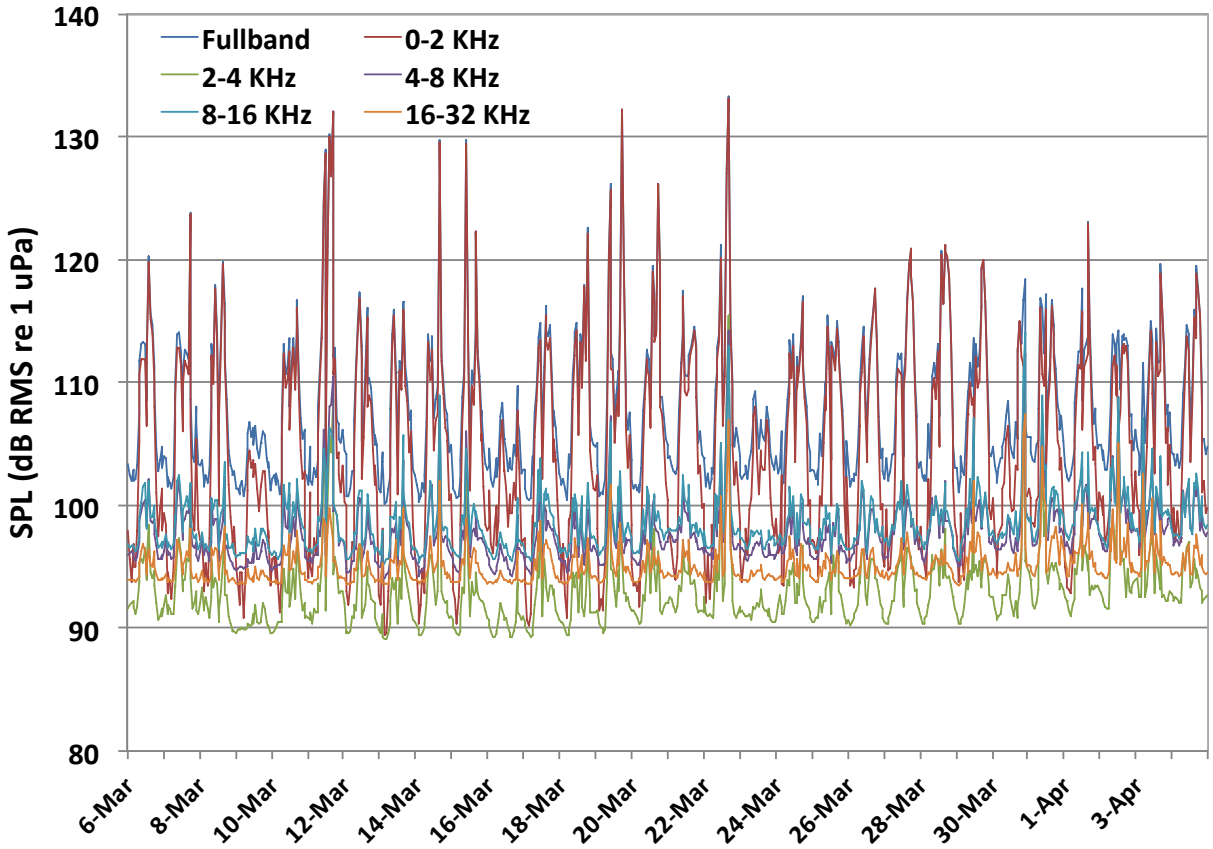


Figure 49. Root-mean-square (RMS) sound pressure level (SPL) in 1-octave bands and full bandwidth averaged hourly over the construction deployment period at site C1 (Bridge Alignment Area).

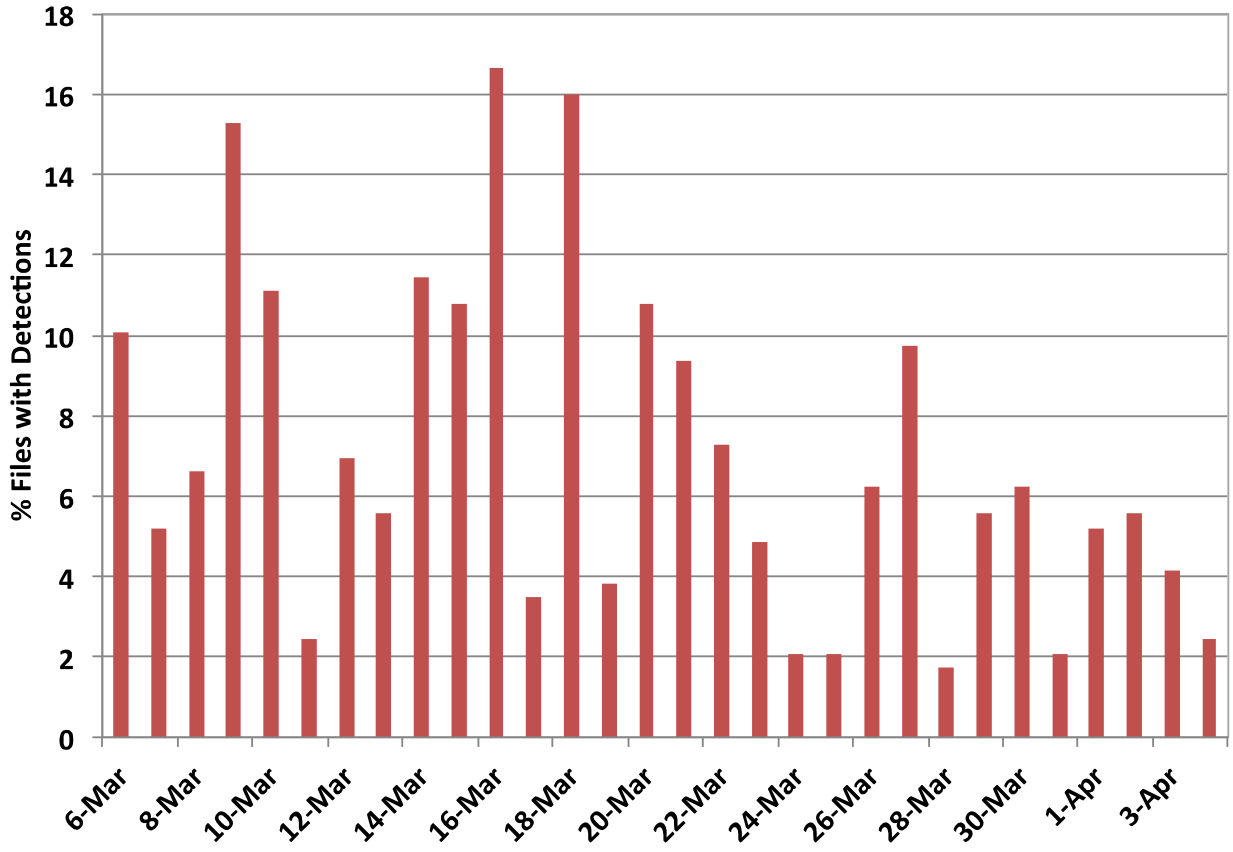


Figure 50. Histogram of the percentage of EAR recordings at site C2 (between Lung Kwu Chau and Sha Chau), with dolphin detections made during 30 days of the construction deployment period.

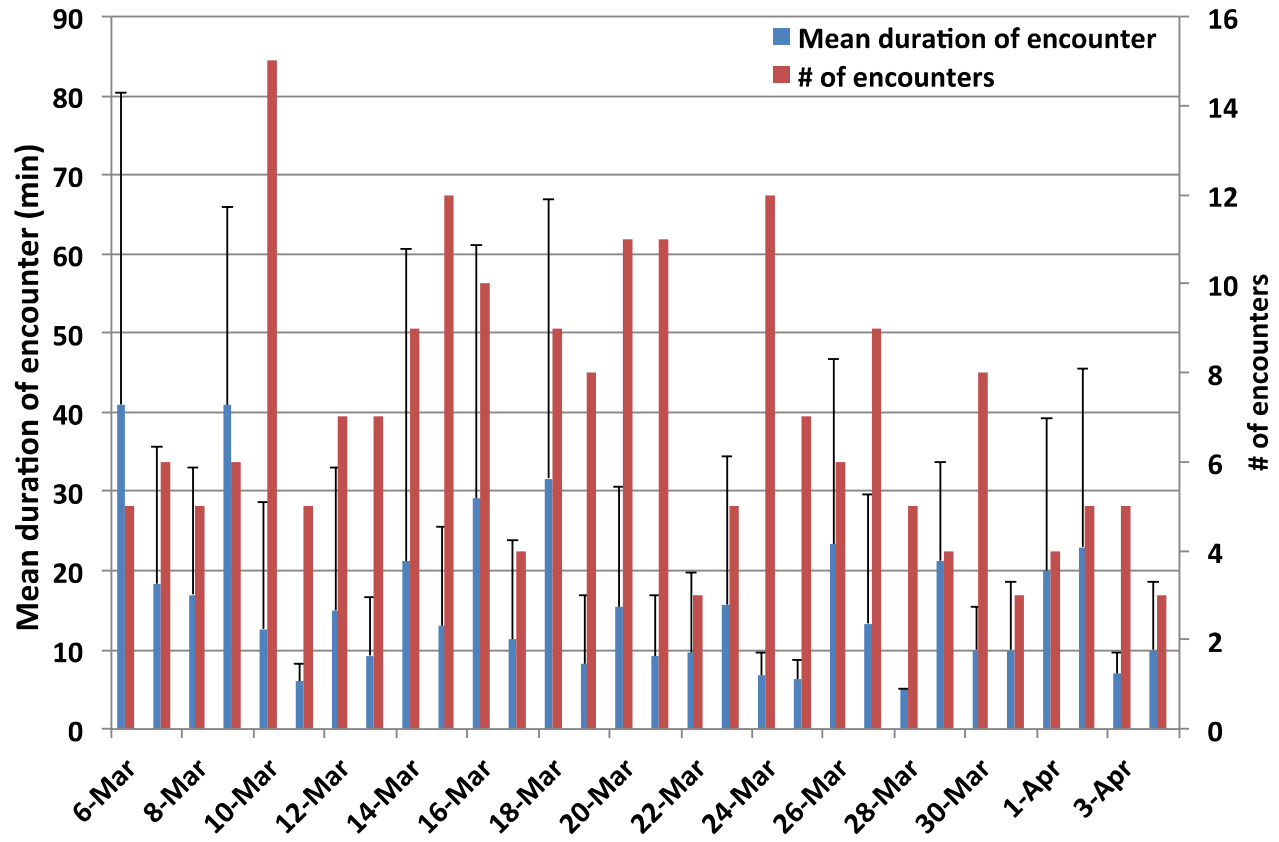


Figure 51. Number of dolphin encounters and the average encounter duration for each day recorded on the EAR at site C2 (between Lung Kwu Chau and Sha Chau) during the construction period. Error bars represent one standard deviation.

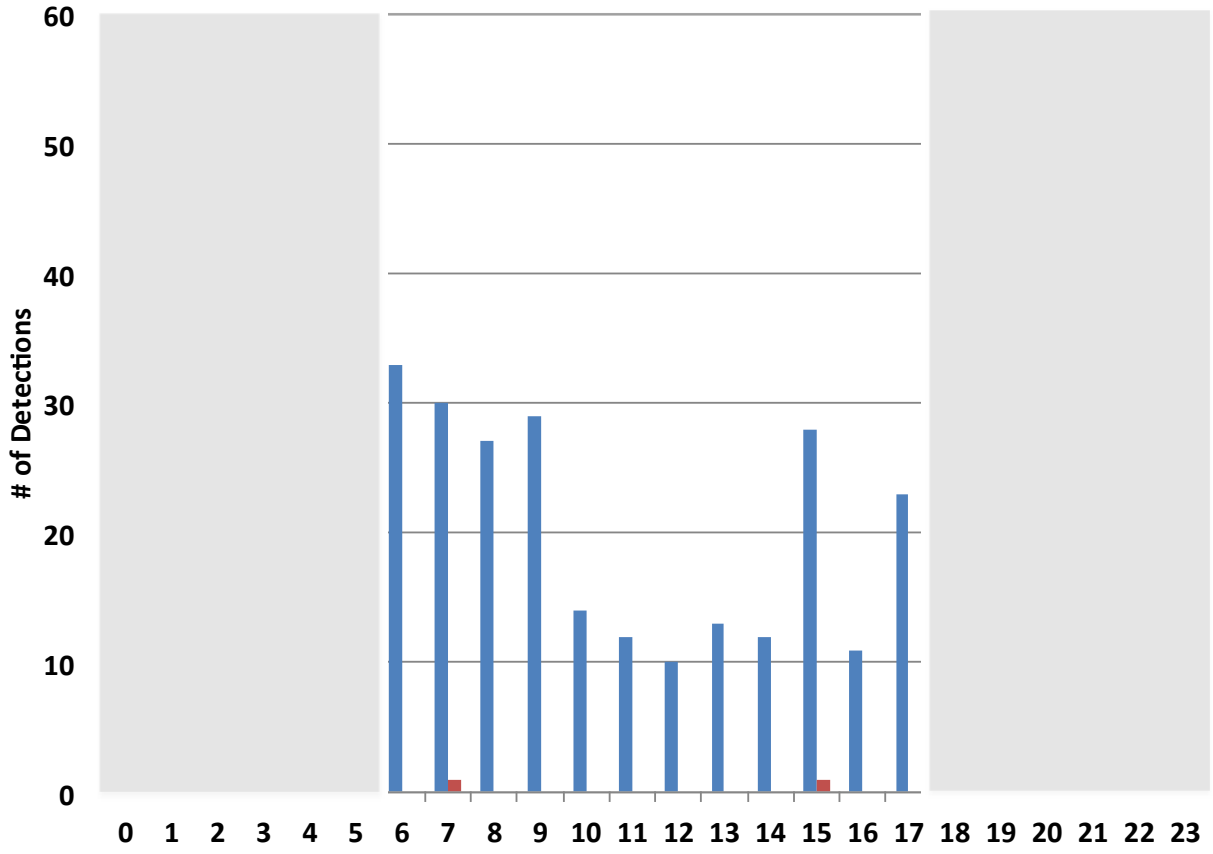


Figure 52. Detections of dolphin signals at site C2 (between Lung Kwu Chau and Sha Chau) as a function of the hour of the day during the construction period. Values are the total number of detections in each hour across the entire monitoring period.

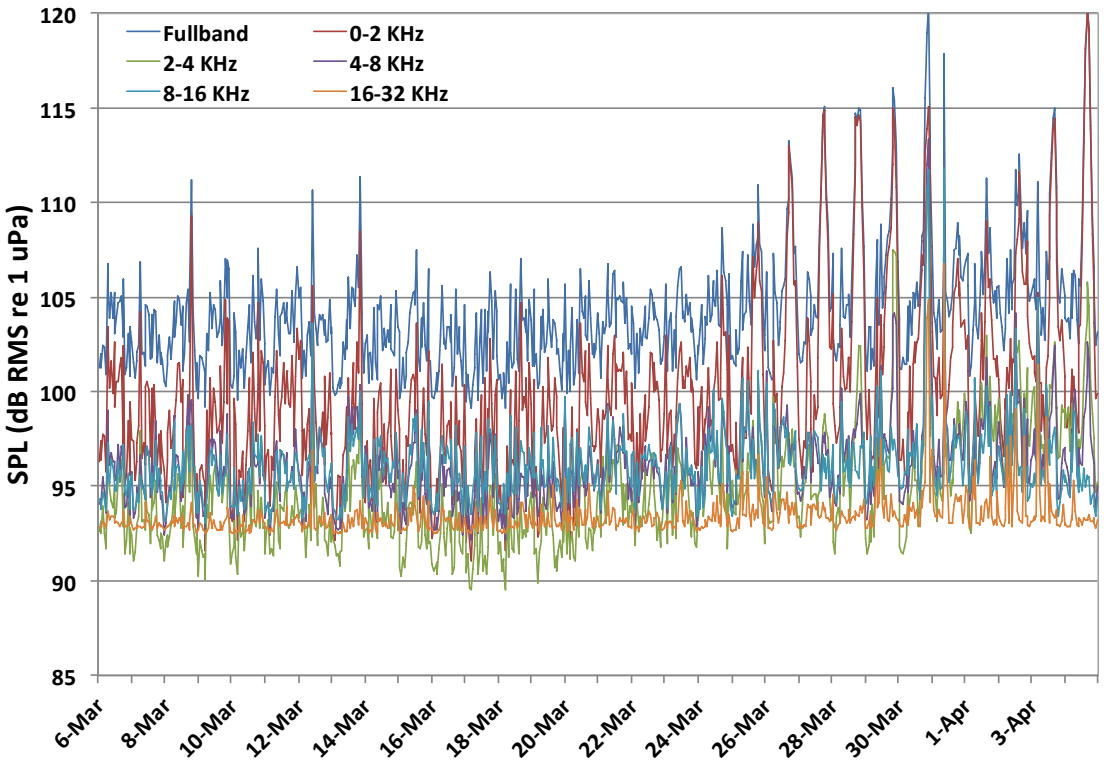


Figure 53. Root-mean-square (RMS) sound pressure level (SPL) in 1-octave bands and full bandwidth averaged hourly over the deployment period at site C2 (between Lung Kwu Chau and Sha Chau) during the construction period.

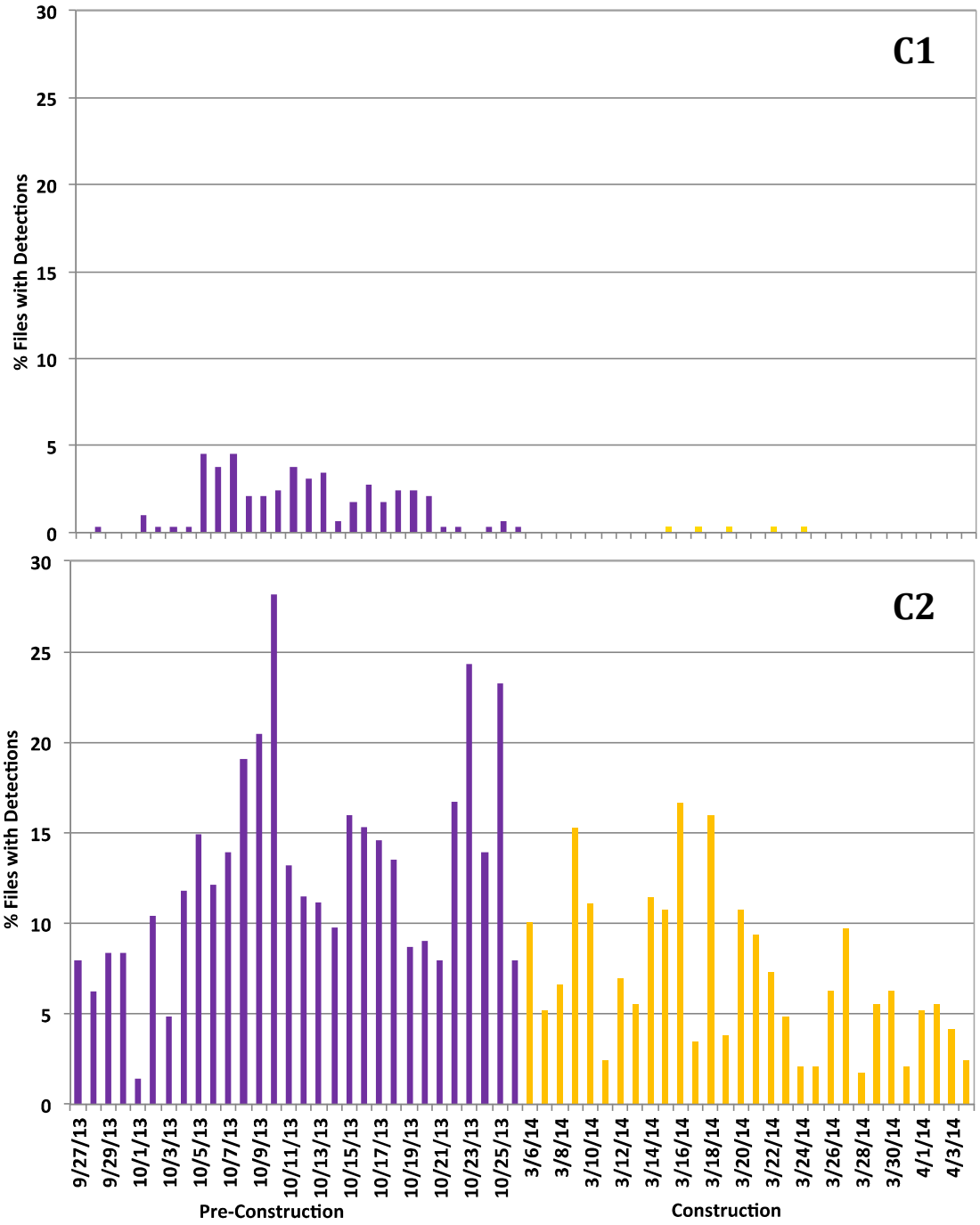


Figure 54. The percentage of files for each day that contained dolphin signals at site C1 (Bridge Alignment Area) and C2 (between Lung Kwu Chau and Sha Chau) for the pre- and construction phases of the study.

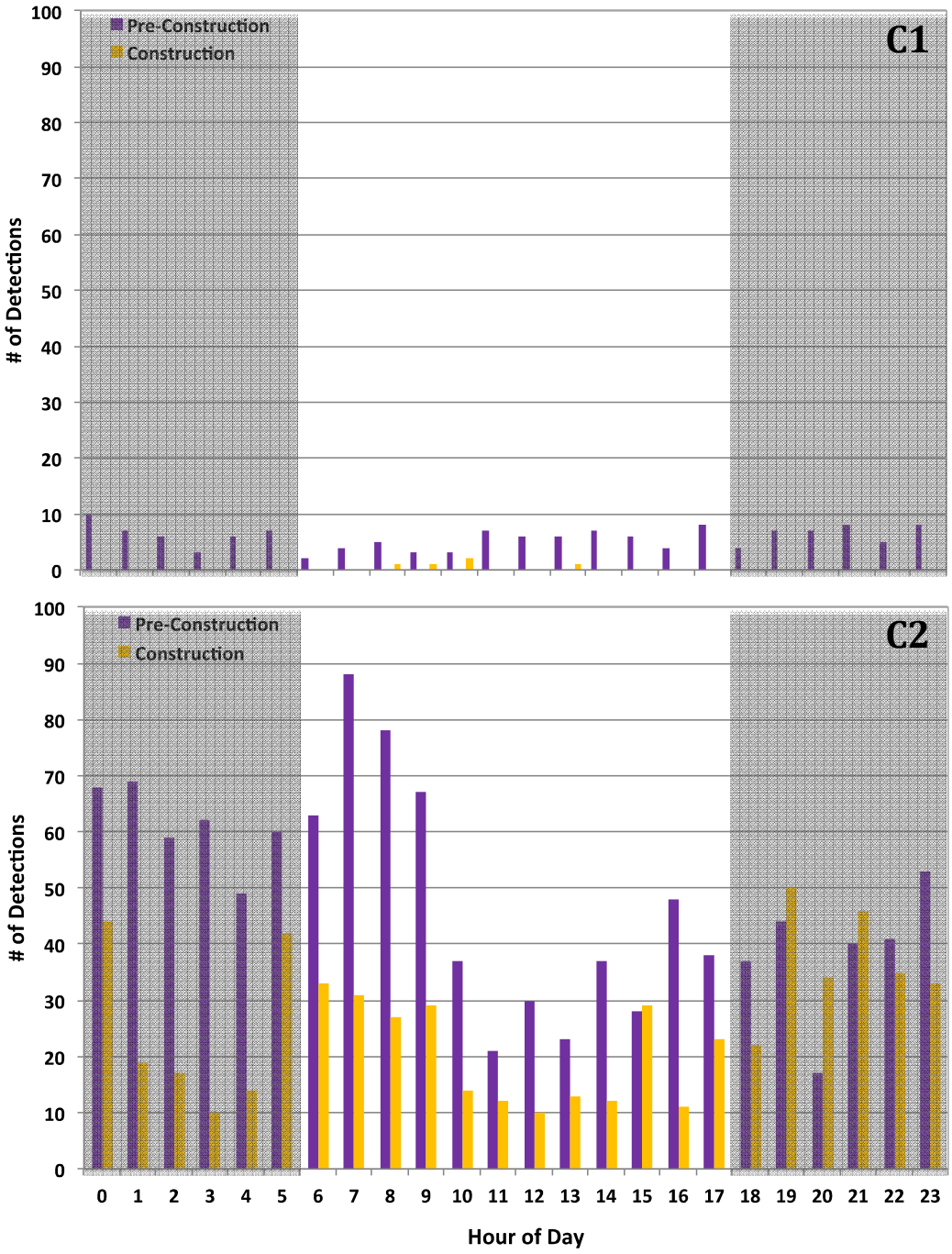


Figure 55. Detections of dolphin signals at site C1 (Bridge Alignment Area) and C2 (between Lung Kwu Chau and Sha Chau) as a function of the hour of the day during the pre- and construction periods. Values are the total number of detections in each hour across the entire monitoring period.

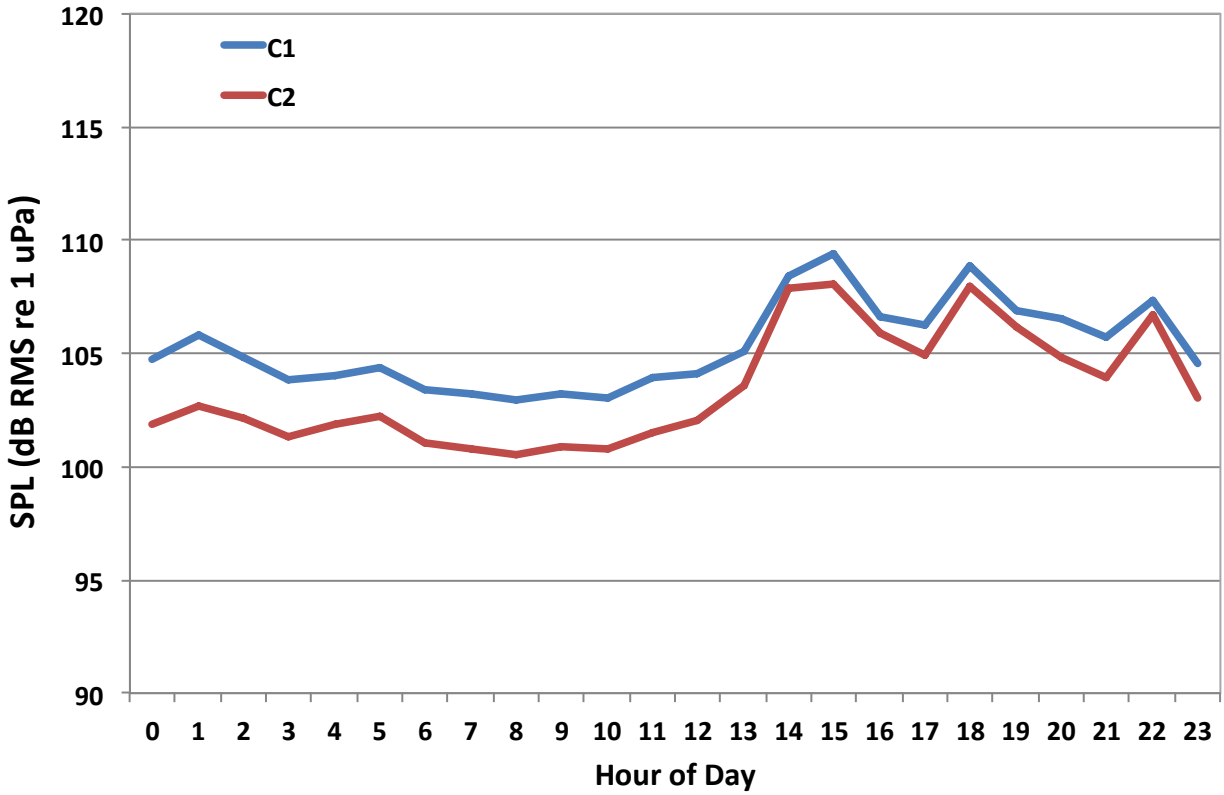


Figure 56. Comparison of Root-mean-square (RMS) sound pressure levels (SPLs) measured over the full frequency bandwidth during the 24-hour test deployment of the EAR used at C1 and C2.

Appendices

Appendix I. Impact Phase Monitoring on Acoustic Monitoring in relation to TM-CLKL bored-piling works

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
2-Mar	3-Mar	4-Mar	5-Mar	6-Mar	7-Mar	8-Mar
	Acoustic survey with dipping hydrophone	Acoustic survey with dipping hydrophone Pier site monitored: B1	Acoustic survey with dipping hydrophone *EAR Deployment* Pier site monitored: B1	*EAR Deployment* Pier site monitored: B1	Acoustic survey with dipping hydrophone *EAR Deployment* Pier site monitored: B1	*EAR Deployment* Pier site monitored: B1
9-Mar	10-Mar	11-Mar	12-Mar	13-Mar	14-Mar	15-Mar
EAR Deployment	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	Acoustic survey with dipping hydrophone *EAR Deployment* Pier site monitored: B1	Acoustic survey with dipping hydrophone *EAR Deployment* Pier site monitored: B1	*EAR Deployment* Pier site monitored: B1	*EAR Deployment* Pier site monitored: B1
16-Mar	17-Mar	18-Mar	19-Mar	20-Mar	21-Mar	22-Mar
EAR Deployment	Acoustic survey with dipping hydrophone *EAR Deployment* Pier site monitored: B1	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	Acoustic survey with dipping hydrophone *EAR Deployment* Pier site monitored: B1	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	*EAR Deployment* Pier sites monitored: B1 / B2
23-Mar	24-Mar	25-Mar	26-Mar	27-Mar	28-Mar	29-Mar
EAR Deployment	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	Acoustic survey with dipping hydrophone *EAR Deployment* Pier site monitored: B2	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	*EAR Deployment* Pier sites monitored: B1 / B2
30-Mar	31-Mar					
EAR Deployment	*EAR Deployment* Pier sites monitored: B1 / B2					

Appendix I. (cont'd)

Sunday	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday
		1-Apr	2-Apr	3-Apr	4-Apr	5-Apr
		Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	*EAR Deployment* Pier sites monitored: B1 / B2	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	*EAR Deployment*
6-Apr	7-Apr	8-Apr	9-Apr	10-Apr	11-Apr	12-Apr
EAR Deployment	*EAR Deployment* Pier sites monitored: B1 / B2	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	*EAR Deployment* Pier sites monitored: B1 / B2
13-Apr	14-Apr	15-Apr	16-Apr	17-Apr	18-Apr	19-Apr
EAR Deployment	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2	*EAR Deployment* Pier sites monitored: B1 / B2	*EAR Deployment* Pier sites monitored: B1 / B2 / B3	*EAR Deployment* Pier sites monitored: B1 / B2 / B3	*EAR Deployment* Pier sites monitored: B1 / B2 / B3
20-Apr	21-Apr	22-Apr	23-Apr	24-Apr	25-Apr	26-Apr
EAR Deployment	*EAR Deployment*	*EAR Deployment* Pier sites monitored: B1 / B2 / B3	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B3	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B2 / B3	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B3	*EAR Deployment* Pier sites monitored: B1 / B3
27-Apr	28-Apr	29-Apr	30-Apr			
EAR Deployment Pier sites monitored: B1 / B3	Acoustic survey with dipping hydrophone *EAR Deployment* Pier sites monitored: B1 / B3					

Appendix II. Database of underwater sound recordings (including dolphin sound recordings) during baseline phase period (September-October 2013) and construction phase period (March-April 2014) of TM-CLKL acoustic monitoring

Date	File #	No. Cues	Begin Time	End Time	Duration	Begin LAT	Begin LONG	End LAT	End LONG	Area	Gain	Gain Change?	Water Depth	Hp Depth	BSS	Wind Speed	Prec.	Dolphin Record?	Note(s)
26-Sep-13	20	9	9:20:10	9:23:13	0:03:03	22.3048	113.9539	22.3048	113.9533	NE LANTAU	x10	N	6.4	5	2	2.1	0	N	near HKBCF
26-Sep-13	22	6	10:00:33	10:03:33	0:03:00	22.3077	113.9662	22.3065	113.9645	NE LANTAU	x10	N	3.9	3	2	0.3	0	N	near CMP and HKBCF; 2 minutes recordingy by Fostex recorder at same location
26-Sep-13	23	5	10:34:23	10:37:23	0:03:00	22.3035	113.9737	22.3030	113.9735	NE LANTAU	x20	N	3.9	3	2	2.5	0	N	weird sound @ 2:30
26-Sep-13	25	5	10:54:25	10:57:26	0:03:01	22.3138	113.9844	22.3133	113.9840	NE LANTAU	x20	N	9.9	5	2	2.1	0	N	
26-Sep-13	26	1	11:22:38	11:27:40	0:05:02	22.3262	113.9993	22.3253	113.9978	NE LANTAU	x10/x20	Y	14.7	5	3	2.5	0	N	gain change from 20dB to 10dB @ 1:26; snapping shrimp sound
26-Sep-13	27	4	11:52:00	11:55:00	0:03:00	22.3407	114.0115	22.3404	114.0102	NE LANTAU	x10	N	22.1	5	2	0.3	0	N	
26-Sep-13	28	6	12:24:10	12:27:12	0:03:02	22.3454	113.9940	22.3452	113.9929	NE LANTAU	x10	N	25.0	5	2	1.4	0	N	
26-Sep-13	29	5	12:51:40	12:54:50	0:03:10	22.3300	113.9762	22.3300	113.9756	NE LANTAU	x10	N	8.0	5	2	0.3	0	N	
26-Sep-13	30	10	13:23:20	13:26:40	0:03:20	22.3293	113.9710	22.3288	113.9705	NE LANTAU	x10	N	5.9	3	2	2.0	0	N	
26-Sep-13	32	15	13:55:30	14:00:45	0:05:15	22.3470	113.9600	22.3465	113.9588	NE LANTAU	x10	N	19.4	5	2	2.4	0	N	
26-Sep-13	33	1	16:26:35	16:30:20	0:03:45	22.2919	113.8784	22.2905	113.8780	NW LANTAU	x10/x20	Y	6.7	5	2	1.7	0	N	gain change from 20dB to 10dB @ 1:05; faint croaking sound
27-Sep-13	35	4	11:08:29	11:13:29	0:05:00	22.3772	113.8932	22.3744	113.8933	NW LANTAU	x10	N	10.3	5	3	2.2	0	Y	snapping shrimp sound
27-Sep-13	36	8	11:23:16	11:28:16	0:05:00	22.3849	113.8918	22.3831	113.8920	NW LANTAU	x10	N	21.5	5	2	3.3	0	Y	
27-Sep-13	37	7	11:28:18	11:33:20	0:05:02	22.3831	113.8920	22.3812	113.8925	NW LANTAU	x10	N	21.7	5	2	1.2	0	Y	
27-Sep-13	38	8	12:19:15	12:22:25	0:03:10	22.3326	113.9434	22.3328	113.9430	NW LANTAU	x10	N	11.2	5	2	1.8	0	N	
27-Sep-13	39	9	12:56:18	13:01:18	0:05:00	22.3342	113.9518	22.3343	113.9516	NE LANTAU	x10	N	7.4	5	3	0.8	0	Y	
27-Sep-13	40	5	13:10:05	13:13:05	0:03:00	22.3327	113.9441	22.3325	113.9437	NW LANTAU	x10	N	8.9	5	3	3.3	0	Y	
27-Sep-13	41	8	13:25:43	13:28:48	0:03:05	22.3327	113.9345	22.3332	113.9338	NW LANTAU	x10	N	7.8	5	3	0.6	0	N	
27-Sep-13	42	4	13:50:18	13:55:18	0:05:00	22.3362	113.9449	22.3364	113.9446	NW LANTAU	x10	N	16.9	5	2	1.6	0	Y	
27-Sep-13	43	8	13:55:25	14:00:25	0:05:00	22.3364	113.9446	22.3367	113.9445	NW LANTAU	x10	N	16.9	5	2	0.6	0	Y	
27-Sep-13	44	0	14:00:33	14:02:33	0:02:00	22.3367	113.9445	22.3367	113.9443	NW LANTAU	x10	N	27.8	5	2	0.6	0	Y	
27-Sep-13	45	0	14:04:01	14:09:00	0:04:59	22.3367	113.9442	22.3368	113.9440	NW LANTAU	x10	N	27.8	5	2	1.2	0	Y	
27-Sep-13	46	7	14:19:37	14:25:37	0:06:00	22.3375	113.9463	22.3375	113.9459	NW LANTAU	x10	N	8.3	5	2	1.2	0	Y	
27-Sep-13	47	6	14:26:51	14:29:51	0:03:00	22.3375	113.9459	22.3376	113.9456	NW LANTAU	x10	N	17.2	5	2	0.7	0	Y	
27-Sep-13	48	0	15:12:55	15:15:55	0:03:00	22.3321	113.9966	22.3319	113.9958	NE LANTAU	x10	N	9.2	5	2	3.7	0	N	
27-Sep-13	49	4	15:42:06	15:45:36	0:03:30	22.3363	114.0060	22.3366	114.0052	NE LANTAU	x10	N	14.1	5	2	2.5	0	N	
27-Sep-13	50	4	16:16:30	16:19:30	0:03:00	22.3286	113.9866	22.3286	113.9862	NE LANTAU	x10	N	10.4	5	2	1.3	0	N	near CMP
27-Sep-13	51	5	16:42:34	16:45:44	0:03:10	22.3119	113.9752	22.3124	113.9747	NE LANTAU	x10	N	5.9	3	2	2.6	0	N	
27-Sep-13	52	9	17:11:50	17:14:52	0:03:02	22.2998	113.9588	22.3002	113.9588	NE LANTAU	x10	N	3.8	3	2	1.1	0	N	
28-Sep-13	53	7	9:42:09	9:47:09	0:05:00	22.3111	113.9650	22.3107	113.9653	NE LANTAU	x10	N	4.3	3	2	1.8	0	N	near HKBCF
28-Sep-13	54	5	10:08:10	10:11:10	0:03:00	22.3045	113.9750	22.3038	113.9750	NE LANTAU	x10	N	4.0	3	2	3.6	0	N	snapping shrimp sound
28-Sep-13	56	3	10:40:49	10:43:48	0:02:59	22.3190	113.9906	22.3188	113.9906	NE LANTAU	x10	N	11.1	5	3	4.1	0	N	engine sound @ 1:04; weird sound @ 2:17 & 2:41
28-Sep-13	57	6	11:08:25	11:11:35	0:03:10	22.3331	114.0132	22.3323	114.0128	NE LANTAU	x10	N	17.3	5	3	4.3	0	N	
28-Sep-13	59	8	11:40:37	11:45:37	0:05:00	22.3528	114.0155	22.3522	114.0152	NE LANTAU	x10	N	15.8	5	3	4.0	0	N	
28-Sep-13	61	9	12:07:00	12:10:00	0:03:00	22.3541	114.0018	22.3542	114.0008	NE LANTAU	x10	N	10.6	5	2		0	N	
28-Sep-13	65	7	13:26:00	13:29:00	0:03:00	22.3511	113.9633	22.3510	113.9630	NE LANTAU	x20	N	12.2	5	3	2.9	0	N	
29-Sep-13	69	7	13:34:55	13:37:55	0:03:00	22.3280	113.9647	22.3279	113.9636	NE LANTAU	x0	N	11.1	5	3	3.8	0	N	near HKBCF
29-Sep-13	70	6	15:25:52	15:28:52	0:03:00	22.3482	114.0044	22.3477	114.0025	NE LANTAU	x10	N	17.7	5	2	1.4	0	N	starting recording at 2:20
29-Sep-13	72	7	16:01:43	16:04:43	0:03:00	22.3320	114.0018	22.3311	114.0000	NE LANTAU	x10	N	12.0	5	2	0.6	0.1-0.5	N	
30-Sep-13	73	5	9:39:47	9:42:49	0:03:02	22.3052	113.9709	22.3053	113.9708	NE LANTAU	x0/x10	Y	4.6	3	2	2.7	0	N	gain change from 0dB to 10dB @ 0:45; start recording at 1:10
30-Sep-13	74	8	10:11:45	10:14:43	0:02:58	22.3182	113.9789	22.3180	113.9791	NE LANTAU	x10	N	7.9	5	3	2.2	0	N	start recording at 2:45
30-Sep-13	75	8	10:39:00	10:43:03	0:04:03	22.3329	113.9988	22.3330	113.9989	NE LANTAU	x10	N	9.8	5	3	3.5	0	N	
30-Sep-13	77	2	11:28:13	11:32:23	0:04:10	22.3427	114.0001	22.3428	114.0003	NE LANTAU	x0/x10	Y	33.0	5	3	1.2	5.1	N	gain change from 0dB to 10dB @ 1:50; start recording at 1:50
30-Sep-13	80	1	12:39:17	12:42:18	0:03:01	22.3352	113.9680	22.3349	113.9683	NE LANTAU	x0	N	6.7	5	3	1.2	7	N	near Tai Mo To; start recording at 0:10
30-Sep-13	81	6	13:09:26	13:12:56	0:03:30	22.3498	113.9529	22.3492	113.9526	NE LANTAU	x0	N	14.4	5	2	3.2	0.1-0.5	N	start recording at 2:00
30-Sep-13	82	2	16:08:20	16:10:20	0:02:00	22.3047	113.9714	22.3047	113.9714	NE LANTAU	x0/x10/x20	Y	4.3	3	1	0.9	0	N	gain change from 0dB to 10dB @ 0:22; from 10dB to 20dB @ 0:44
30-Sep-13	84	6	16:13:09	16:16:11	0:03:02	22.3047	113.9713	22.3047	113.9708	NE LANTAU	x20	N	4.3	3	1	0.9	0	N	
30-Sep-13	85	6	16:22:37	16:26:36	0:03:59	22.3017	113.9665	22.3015	113.9658	NE LANTAU	x0/x10	Y	4.1	3	1	0.5	0	N	gain change from 0dB to 10dB @ 0:19
1-Oct-13	86	7	10:32:14	10:37:13	0:04:59	22.3766	113.8934	22.3749	113.8938	NW LANTAU	x10	N	31.0	5	3	1.8	0	Y	lots of cargo ships in shipping channel; snapping shrimp sound
1-Oct-13	87	5	10:37:26	10:42:31	0:05:05	22.3748	113.8938	22.3727	113.8941	NW LANTAU	x10	N	29.0	5	3	3.5	0	Y	lots of cargo ships in shipping channel; snapping shrimp sound
1-Oct-13	88	4	10:42:51	10:47:57	0:05:06	22.3726	113.8941	22.3702	113.8946	NW LANTAU	x10	N	29.0	5	3	1.6	0	Y	lots of cargo ships in shipping channel; snapping shrimp sound
1-Oct-13	89	3	10:49:18	10:54:18	0:05:00	22.3696	113.8946	22.3672	113.8946	NW LANTAU	x10	N	12.2	5	3	1.7	0	Y	snapping shrimp sound; 11:00 am - purse seine finish hauling net
1-Oct-13	90	3	11:24:43	11:29:42	0:04:59	22.3751	113.8908	22.3720	113.8909	NW LANTAU	x10	N	29.0	5	2	1.3	0	Y	snapping shrimp sound
1-Oct-13	92	1	11:44:50	11:49:50	0:05:00	22.3817	113.8879	22.3796	113.8882	NW LANTAU	x10	N	18.2	5	2	1.2	0	Y	snapping shrimp sound
1-Oct-13	93	6	13:09:40	13:12:40	0:03:00	22.3408	113.9535	22.3405	113.9544	NE LANTAU	x10	N	11.3	5	2	1.7	0	N	
1-Oct-13	94	3	13:39:39	13:42:39	0:03:00	22.3492	113.9664	22.3495	113.9673	NE LANTAU	x10	N	30.0	5	2	1.2	0	N	
1-Oct-13	95	3	14:01:22	14:05:21	0:03:59	22.3252	113.9765	22.3249	113.9773	NE LANTAU	x10	N	9.1	5	1	2.2	0	Y	
1-Oct-13	96	10	14:11:11	14:16:11	0:05:00	22.3274	113.9762	22.3275	113.9772	NE LANTAU	x10	N	10.2	5	2	1.2	0	Y	engine sound @ 2:45
1-Oct-13	97	7	14:16:15	14:20:16	0:04:01	22.3275	113.9772	22.3275	113.9777	NE LANTAU	x10	N	14.0	5	2	1.2	0	Y	
1-Oct-13	98	11	14:25:41	14:31:41	0:06:00	22.3275	113.9777	22.3270	113.9765	NE LANTAU	x10	N	13.7	5	2	0.7	0	Y	
1-Oct-13	99	8	14:32:40	14:37:40	0:05:00	22.3270	113.9766	22.3267	113.9774	NE LANTAU	x10	N	14.9	5	2	1.4	0	Y	

Appendix II. (cont'd)

Date	File #	No. Cues	Begin Time	End Time	Duration	Begin LAT	Begin LONG	End LAT	End LONG	Area	Gain	Gain Change?	Water Depth	Hp Depth	BSS	Wind Speed	Prec.	Dolphin Record?	Note(s)
1-Oct-13	100	9	14:47:24	14:52:24	0:05:00	22.3279	113.9767	22.3277	113.9772	NE LANTAU	x10	N	13.0	5	2	1.5	0	Y	
1-Oct-13	101	9	15:04:28	15:09:38	0:05:10	22.3244	113.9843	22.3240	113.9849	NE LANTAU	x10	N	10.5	5	2	2.1	0	Y	
1-Oct-13	102	5	15:20:48	15:24:48	0:04:00	22.3204	113.9925	22.3202	113.9927	NE LANTAU	x10	N	11.4	5	2	2.7	0	Y	
1-Oct-13	103	6	15:34:07	15:39:07	0:05:00	22.3176	113.9942	22.3168	113.9945	NE LANTAU	x10	N	7.0	5	2	2.5	0	Y	near Shum Shui Kok
1-Oct-13	104	8	16:12:50	16:15:50	0:03:00	22.3130	113.9658	22.3128	113.9657	NE LANTAU	x10	N	30.0	5	2	1.1	0	N	near HKBCF
1-Oct-13	105	8	16:21:28	16:24:28	0:03:00	22.3133	113.9653	22.3137	113.9649	NE LANTAU	x10	N	5.4	3	2	2.5	0	N	near HKBCF
2-Oct-13	106	7	9:28:08	9:31:08	0:03:00	22.3035	113.9656	22.3033	113.9658	NE LANTAU	x10	N	4.6	3	2	1.1	0	N	near HKBCF
2-Oct-13	108	3	10:01:20	10:04:20	0:03:00	22.3133	113.9813	22.3132	113.9816	NE LANTAU	x10	N	6.6	5	2	1.5	0	N	
2-Oct-13	109	5	10:27:11	10:30:11	0:03:00	22.3282	113.9989	22.3281	113.9995	NE LANTAU	x10	N	14.1	5	3	2.7	0	N	
2-Oct-13	110	2	10:59:56	11:02:56	0:03:00	22.3478	114.0016	22.3471	114.0031	NE LANTAU	x10	N	32.0	5	3	2.7	0	N	start recording at 1:00
2-Oct-13	111	9	11:30:50	11:33:50	0:03:00	22.3471	113.9872	22.3471	113.9882	NE LANTAU	x10	N	28.4	5	3	2.8	0	N	
2-Oct-13	112	3	11:57:58	12:00:58	0:03:00	22.3362	113.9768	22.3355	113.9776	NE LANTAU	x10	N	4.5	3	2	0.6	0	N	snapping shrimp sound
2-Oct-13	113	8	12:29:37	12:32:37	0:03:00	22.3269	113.9648	22.3268	113.9660	NE LANTAU	x10	N	11.8	5	2	1.4	0	N	
2-Oct-13	114	6	12:58:10	13:01:10	0:03:00	22.3409	113.9511	22.3398	113.9521	NW LANTAU	x10	N	11.2	5	2	1.2	0	N	
2-Oct-13	115	4	14:36:03	14:41:03	0:05:00	22.3848	113.8883	22.3825	113.8892	NW LANTAU	x10	N	18.8	5	2	1.4	0	Y	
2-Oct-13	116	5	14:51:32	14:56:32	0:05:00	22.3869	113.8925	22.3830	113.8935	NW LANTAU	x10	N	18.7	5	2	2.9	0	Y	
2-Oct-13	117	2	15:09:03	15:12:03	0:03:00	22.3808	113.9015	22.3791	113.9025	NW LANTAU	x10	N	20.0	5	3	3.7	0	Y	
2-Oct-13	118	7	15:40:11	15:44:11	0:04:00	22.3736	113.9135	22.3727	113.9143	NW LANTAU	x10/x0	Y	17.4	5	3	2.4	0	Y	near Power Plant and Lung Kwu Tan; gain change from 10dB to 0dB @ 2:00
3-Oct-13	119	2	12:33:10	12:36:15	0:03:05	22.3236	113.9906	22.3241	113.9921	NE LANTAU	x10	N	13.3	5	2	0.6	0	N	croaking sound heard
3-Oct-13	120	7	13:02:09	13:05:09	0:03:00	22.3107	113.9754	22.3108	113.9758	NE LANTAU	x10	N	4.9	3	1	0.6	0	N	
3-Oct-13	121	9	13:27:00	13:30:10	0:03:10	22.3097	113.9627	22.3097	113.9634	NE LANTAU	x20	N	4.1	3	2	2.5	0	N	
3-Oct-13	123	8	14:47:30	14:50:30	0:03:00	22.3396	113.9532	22.3396	113.9546	NE LANTAU	x10	N	9.6	5	3	2.8	0	N	
3-Oct-13	124	12	15:17:15	15:20:24	0:03:09	22.3498	113.9662	22.3503	113.9680	NE LANTAU	x10	N	13.3	5	2	3.7	0	N	
3-Oct-13	125	7	15:47:00	15:50:01	0:03:01	22.3402	113.9862	22.3407	113.9864	NE LANTAU	x20	N	8.8	5	2	1.5	0	N	
3-Oct-13	126	4	17:16:24	17:20:14	0:03:50	22.3341	113.9988	22.3343	113.9972	NE LANTAU	x20	N	9.2	5	2	2.8	0	N	croaking sound heard
3-Oct-13	127	4	17:51:09	17:54:09	0:03:00	22.3420	114.0003	22.3422	113.9993	NE LANTAU	x20	N	32.1	5	2	2.2	0	N	
3-Oct-13	128	13	18:16:40	18:20:10	0:03:30	22.3149	113.9674	22.3156	113.9664	NE LANTAU	x10/x20	Y	11.4	5	2	1.2	0	N	gain change from 20dB to 10dB @ 2:50
3-Oct-13	129	9	18:48:20	18:51:20	0:03:00	22.3044	113.9668	22.3044	113.9668	NE LANTAU	x10/x20	Y	4.1	3	2	2.1	0	N	gain change from 20dB to 10dB @ 2:12
3-Oct-13	130	6	19:45:30	19:48:30	0:03:00	22.3045	113.9668	22.3044	113.9668	NE LANTAU	x10/x20	Y	4.3	3	2	3.5	0	N	gain change from 10dB to 20dB @ 0:15; croaking sound heard
3-Oct-13	131	4	20:06:05	20:08:05	0:02:00	22.3039	113.9700	22.3040	113.9698	NE LANTAU	x20	N	4.3	3	2	3.0	0	N	at Pier B1 (0m); croaking sound heard
3-Oct-13	132	4	20:08:27	20:10:27	0:02:00	22.3040	113.9698	22.3042	113.9697	NE LANTAU	x20	N	4.8	3	2	3.1	0	N	at Pier B1 (10m); croaking sound heard
3-Oct-13	133	4	20:11:46	20:13:45	0:01:59	22.3044	113.9697	22.3047	113.9695	NE LANTAU	x20	N	4.8	3	2	3.9	0	N	at Pier B1 (20m); croaking sound heard
3-Oct-13	134	4	20:20:46	20:22:45	0:01:59	22.3039	113.9624	22.3041	113.9690	NE LANTAU	x20	N	4.8	3	2	4.2	0	N	at Pier B1 (50m); croaking sound heard
3-Oct-13	135	4	20:23:55	20:25:55	0:02:00	22.3042	113.9690	22.3046	113.9689	NE LANTAU	x20	N	4.8	3	2	4.4	0	N	at Pier B1 (100m); croaking sound heard
3-Oct-13	136	4	20:33:05	20:35:05	0:02:00	22.3040	113.9681	22.3045	113.9680	NE LANTAU	x20	N	4.9	3	2	5.8	0	N	at Pier B1 (200m); croaking sound heard
3-Oct-13	137	4	20:40:25	20:42:25	0:02:00	22.3038	113.9669	22.3042	113.9668	NE LANTAU	x20	N	4.8	3	2	4.7	0	N	at Pier B1 (300m); croaking sound heard
3-Oct-13	138	4	20:45:35	20:47:35	0:02:00	22.3039	113.9651	22.3042	113.9652	NE LANTAU	x20	N	4.8	3	2	3.6	0	N	at Pier B1 (500m); croaking sound heard
3-Oct-13	139	4	21:01:45	21:03:45	0:02:00	22.3037	113.9703	22.3040	113.9700	NE LANTAU	x20	N	4.8	3	2	4.6	0	N	at Pier B2 (0m); croaking sound heard
3-Oct-13	140	4	21:10:35	21:12:35	0:02:00	22.3032	113.9707	22.3035	113.9706	NE LANTAU	x20	N	4.7	3	2	4.5	0	N	at Pier B3 (0m)
3-Oct-13	141	4	21:18:30	21:20:30	0:02:00	22.3031	113.9707	22.3036	113.9708	NE LANTAU	x20	N	4.8	3	2	4.7	0	N	at Pier B3 (10m)
3-Oct-13	142	5	21:34:00	21:36:00	0:02:00	22.3033	113.9706	22.3040	113.9709	NE LANTAU	x20	N	4.9	3	2	4.3	0	N	at Pier B3 (20m); faint croaking sound
3-Oct-13	143	3	21:42:30	21:44:30	0:02:00	22.3031	113.9702	22.3035	113.9702	NE LANTAU	x20	N	4.8	3	2	4.5	0	N	at Pier B3 (50m); faint croaking sound
3-Oct-13	144	4	21:47:25	21:49:25	0:02:00	22.3031	113.9697	22.3034	113.9696	NE LANTAU	x20	N	4.8	3	2	4.1	0	N	at Pier B3 (100m); faint croaking sound
3-Oct-13	145	4	21:53:50	21:55:50	0:02:00	22.3031	113.9689	22.3034	113.9688	NE LANTAU	X20	N	4.8	3	2	4.8	0	N	at Pier B3 (200m)
3-Oct-13	146	4	22:00:22	22:02:20	0:01:58	22.3031	113.9678	22.3034	113.9676	NE LANTAU	x20	N	4.8	3	2	3.6	0	N	at Pier B3 (300m)
3-Oct-13	147	4	22:06:45	22:08:45	0:02:00	22.3032	113.9658	22.3034	113.9659	NE LANTAU	x20	N	5.2	3	2	3.8	0	N	at Pier B3 (500m)
4-Oct-13	148	19	9:50:05	9:55:05	0:05:00	22.2835	113.8826	22.2835	113.8820	NW LANTAU	x10	N	7.0	5	2	2.9	0	N	near HKLR09 bored pile sites; with 25-30 vessels within 500m
4-Oct-13	149	14	9:55:09	10:01:09	0:06:00	22.2835	113.8820	22.2832	113.8815	NW LANTAU	x10	N	7.0	5	2	2.9	0	N	near HKLR09 bored pile sites; with 25-30 vessels within 500m
4-Oct-13	150	6	10:05:14	10:10:44	0:05:30	22.2831	113.8813	22.2831	113.8811	NW LANTAU	x10	N	7.0	5	2	1.7	0	N	near HKLR09 bored pile sites; with 25-30 vessels within 500m
4-Oct-13	151	4	10:10:59	10:13:59	0:03:00	22.2831	113.8811	22.2830	113.8810	NW LANTAU	x10	N	7.0	5	2	2.4	0	N	near HKLR09 bored pile sites; with 25-30 vessels within 500m
4-Oct-13	152	3	11:43:09	11:47:09	0:04:00	22.3626	113.8728	22.3617	113.8725	NW LANTAU	x20	N	6.7	5	2	1.1	0	Y	faint croaking sound
4-Oct-13	153	7	12:41:42	12:44:42	0:03:00	22.3326	113.9433	22.3323	113.9440	NW LANTAU	x10	N	9.4	5	2	1.1	0	N	near HKBCF
4-Oct-13	154	23	13:12:57	13:17:58	0:05:01	22.3198	113.9691	22.3198	113.9691	NE LANTAU	x10	N	11.3	5	1	1.3	0	N	
4-Oct-13	155	8	14:13:42	14:17:27	0:03:45	22.3048	113.9703	22.3048	113.9703	NE LANTAU	x10	N	3.9	3	2	2.6	0	N	
4-Oct-13	156	5	14:42:46	14:45:46	0:03:00	22.3135	113.9795	22.3136	113.9799	NE LANTAU	x10	N	5.8	3	2	2.0	0	N	
4-Oct-13	157	0	15:13:10	15:16:10	0:03:00	22.3374	114.0001	22.3377	114.0006	NE LANTAU	x10	N	11.8	5	2	1.4	0	N	
4-Oct-13	158	2	15:41:30	15:44:30	0:03:00	22.3326	114.0134	22.3333	114.0133	NE LANTAU	x10	N	16.3	5	2	3.6	0	N	
5-Oct-13	159	8	8:27:20	8:30:20	0:03:00	22.3010	113.9612	22.3008	113.9609	NE LANTAU	x20	N	4.3	3	2	1.6	0	N	
5-Oct-13	160	6	8:57:03	9:00:03	0:03:00	22.3104	113.9761	22.3104	113.9760	NE LANTAU	x20	N	5.7	3	2	1.3	0	N	
5-Oct-13	161	2	9:30:10	9:33:10	0:03:00	22.3313	113.9992	22.3310	113.9992	NE LANTAU	x20	N	11.8	5	2	1.7	0	N	
5-Oct-13	162	3	9:58:11	10:01:11	0:03:00	22.3462	114.0013	22.3460	114.0006	NE LANTAU	x10	N	31.5	5	2	1.9	0	N	
5-Oct-13	163	4	10:28:22	10:31:22	0:03:00	22.3294	113.9837	22.3282	113.9842	NE LANTAU	x20	N	11.7	5	2	1.3	0	N	
5-Oct-13	164	9	10:57:55	11:00:56	0:03:01	22.3446	113.9697	22.3435	113.9698	NE LANTAU	x10	N	26.9	5	2	1.3	0	N	

Appendix II. (cont'd)

Date	File #	No. Cues	Begin Time	End Time	Duration	Begin LAT	Begin LONG	End LAT	End LONG	Area	Gain	Gain Change?	Water Depth	Hp Depth	BSS	Wind Speed	Prec.	Dolphin Record?	Note(s)
5-Oct-13	165	5	11:27:18	11:30:19	0:03:01	22.3503	113.9550	22.3500	113.9553	NE LANTAU	x10	N	14.7	5	2	2.4	0	N	
5-Oct-13	166	1	12:20:20	12:24:19	0:03:59	22.3521	113.8926	22.3503	113.8933	NW LANTAU	x10	N	9.8	5	2	3.4	0	Y	
5-Oct-13	167	2	12:38:01	12:42:01	0:04:00	22.3538	113.9002	22.3524	113.9014	NW LANTAU	x10	N	9.8	5	2	4.1	0	Y	
5-Oct-13	168	0	12:54:45	12:59:45	0:05:00	22.3595	113.9031	22.3577	113.9049	NW LANTAU	x10	N	12.0	5	3	3.0	0	Y	snapping shrimp sound
5-Oct-13	169	0	13:17:33	13:22:33	0:05:00	22.3667	113.8940	22.3645	113.8953	NW LANTAU	x10	N	11.7	5	2	3.4	0	Y	
5-Oct-13	170	1	13:41:53	13:45:49	0:03:56	22.3770	113.8907	22.3753	113.8919	NW LANTAU	x10	N	16.9	5	2	3.1	0	Y	
5-Oct-13	171	4	14:29:03	14:34:03	0:05:00	22.3653	113.8717	22.3631	113.8724	NW LANTAU	x10	N	6.2	5	2	3.0	0	Y	
6-Oct-13	172	2	11:09:28	11:14:28	0:05:00	22.3538	113.8913	22.3528	113.8916	NW LANTAU	x0	N	10.1	5	3	3.4	0	Y	
6-Oct-13	173	2	11:30:44	11:35:44	0:05:00	22.3548	113.8832	22.3544	113.8844	NW LANTAU	x0	N	8.0	5	4	5.1	0	Y	
6-Oct-13	174	5	12:06:29	12:11:29	0:05:00	22.3367	113.8973	22.3360	113.8990	NW LANTAU	x0	N	9.4	5	3	1.8	0	Y	
6-Oct-13	175	6	12:19:32	12:24:32	0:05:00	22.3379	113.8928	22.3366	113.8935	NW LANTAU	x0	N	9.7	5	3	2.1	0	Y	
6-Oct-13	177	1	12:35:06	12:40:06	0:05:00	22.3394	113.8879	22.3378	113.8895	NW LANTAU	x0	N	5.5	3	4	5.2	0	Y	
6-Oct-13	178	8	13:29:52	13:32:52	0:03:00	22.3341	113.9548	22.3338	113.9563	NE LANTAU	x10	N	7.0	5	3	1.6	0	N	
6-Oct-13	179	5	13:57:32	14:00:32	0:03:00	22.3419	113.9753	22.3416	113.9765	NE LANTAU	x10	N	14.7	5	2	1.8	0	N	
6-Oct-13	180	7	14:27:05	14:30:05	0:03:00	22.3467	113.9922	22.3463	113.9938	NE LANTAU	x10	N	31.0	5	3	2.7	0	N	
6-Oct-13	181	2	14:59:25	15:02:25	0:03:00	22.3398	114.0112	22.3395	114.0136	NE LANTAU	x10	N	20.1	5	3	3.0	0	N	
6-Oct-13	182	5	15:28:20	15:31:20	0:03:00	22.3229	113.9982	22.3232	113.9999	NE LANTAU	x10	N	7.9	5	4	3.5	0	N	
6-Oct-13	183	7	15:57:57	16:00:57	0:03:00	22.3102	113.9803	22.3101	113.9812	NE LANTAU	x10	N	5.5	3	4	5.0	0	N	
6-Oct-13	184	7	16:16:26	16:19:26	0:03:00	22.3086	113.9716	22.3084	113.9724	NE LANTAU	x10	N	4.3	3	4	4.5	0	N	
6-Oct-13	185	10	16:46:02	16:49:02	0:03:00	22.3048	113.9528	22.3041	113.9531	NE LANTAU	x10	N	5.6	3	3	4.8	0	N	
7-Oct-13	186	7	9:32:10	9:35:10	0:03:00	22.3081	113.9688	22.3076	113.9690	NE LANTAU	x20	N	4.8	3	3	5.0	0	N	
7-Oct-13	187	3	10:02:03	10:05:03	0:03:00	22.3238	113.9828	22.3232	113.9828	NE LANTAU	x20	N	11.3	5	3	5.8	0	N	
7-Oct-13	188	1	10:31:35	10:34:35	0:03:00	22.3318	114.0061	22.3311	114.0062	NE LANTAU	x20	N	16.0	5	4	5.6	0	N	
7-Oct-13	189	2	11:02:35	11:05:35	0:03:00	22.3353	113.9952	22.3344	113.9952	NE LANTAU	x20	N	9.1	5	4	5.9	0	N	
7-Oct-13	190	4	11:33:30	11:36:30	0:03:00	22.3249	113.9792	22.3244	113.9800	NE LANTAU	x20	N	12.8	5	4	7.1	0	N	
7-Oct-13	191	3	11:45:22	11:48:28	0:03:06	22.3318	113.9764	22.3312	113.9772	NE LANTAU	x10	N	8.6	5	5	7.7	0	N	
7-Oct-13	192	6	12:23:30	12:28:30	0:05:00	22.3436	113.9789	22.3434	113.9805	NE LANTAU	x10	N	30.1	5	3	3.8	0	Y	
7-Oct-13	193	6	13:01:30	13:06:30	0:05:00	22.3454	113.9765	22.3449	113.9887	NE LANTAU	x10	N	33.6	5	5	4.8	0	Y	
7-Oct-13	194	4	13:07:40	13:12:40	0:05:00	22.3449	113.9787	22.3451	113.9813	NE LANTAU	x10	N	31.8	5	4	4.9	0	Y	
7-Oct-13	195	0	13:51:48	13:54:48	0:03:00	22.3429	113.9598	22.3425	113.9623	NE LANTAU	x10	N	16.1	5	5	6.3	0	N	
7-Oct-13	196	5	14:22:15	14:25:15	0:03:00	22.3499	113.9543	22.3494	113.9572	NE LANTAU	x10	N	14.8	5	5	5.9	0	N	
7-Oct-13	197	8	14:46:10	14:51:10	0:05:00	22.3397	113.9477	22.3385	113.9508	NE LANTAU	x10	N	9.8	5	3	5.5	0	Y	
7-Oct-13	198	4	15:15:55	15:19:55	0:04:00	22.3427	113.9367	22.3406	113.9392	NE LANTAU	x10	N	9.8	5	4	3.5	0	Y	
8-Oct-13	199	2	12:24:51	12:27:51	0:03:00	22.3021	113.9713	22.3021	113.9714	NE LANTAU	x0/x10	Y	4.8	3	3	4.6	0	N	at Pier B5 (0m); gain change from 0dB to 10dB @ 0:10
8-Oct-13	200	4	12:34:25	12:37:25	0:03:00	22.3023	113.9712	22.3022	113.9712	NE LANTAU	x10	N	4.8	3	3	4.6	0	N	at Pier B5 (10m)
8-Oct-13	201	3	12:43:39	12:46:39	0:03:00	22.3022	113.9710	22.3020	113.9710	NE LANTAU	x10	N	4.8	3	3	5.0	0	N	at Pier B5 (20m)
8-Oct-13	202	4	12:54:20	12:57:20	0:03:00	22.3020	113.9703	22.3020	113.9703	NE LANTAU	x10	N	4.7	3	3	2.0	0	N	at Pier B5 (100m)
8-Oct-13	203	6	13:10:05	13:13:05	0:03:00	22.3022	113.9708	22.3022	113.9707	NE LANTAU	x10	N	4.8	3	4	3.4	0	N	at Pier B5 (50m)
8-Oct-13	204	6	13:19:15	13:22:15	0:03:00	22.3021	113.9694	22.3020	113.9694	NE LANTAU	x10	N	4.8	3	3	3.5	0	N	at Pier B5 (200m)
8-Oct-13	205	4	13:28:49	13:31:48	0:02:59	22.3021	113.9684	22.3020	113.9685	NE LANTAU	x10	N	4.6	3	3	3.9	0	N	at Pier B5 (300m)
8-Oct-13	206	4	13:42:28	13:45:28	0:03:00	22.3022	113.9664	22.3021	113.9664	NE LANTAU	x10	N	4.6	3	3	5.1	0	N	at Pier B5 (500m)
8-Oct-13	207	4	13:59:50	14:02:50	0:03:00	22.3012	113.9712	22.3012	113.9713	NE LANTAU	x10	N	5.0	3	3	3.0	0	N	at Pier B7 (20m)
8-Oct-13	208	5	14:03:18	14:06:18	0:03:00	22.3011	113.9713	22.3011	113.9713	NE LANTAU	x10	N	4.8	3	3	3.8	0	N	at Pier B7 (10m)
8-Oct-13	209	4	14:27:40	14:30:40	0:03:00	22.3010	113.9713	22.3009	113.9713	NE LANTAU	x10	N	4.5	3	3	3.9	0	N	at Pier B7 (0m); very close to shore
8-Oct-13	210	5	14:39:50	14:42:55	0:03:05	22.3010	113.9709	22.3009	113.9709	NE LANTAU	x10	N	4.8	3	2	3.7	0	N	at Pier B7 (50m)
8-Oct-13	211	8	14:48:40	14:51:40	0:03:00	22.3010	113.9703	22.3009	113.9702	NE LANTAU	x10	N	5.0	3	2	2.7	0	N	at Pier B7 (100m)
8-Oct-13	213	4	15:03:10	15:06:11	0:03:01	22.3010	113.9695	22.3009	113.9694	NE LANTAU	x10	N	4.8	3	3	2.7	0	N	at Pier B7 (200m)
8-Oct-13	214	4	15:15:10	15:18:10	0:03:00	22.3009	113.9685	22.3009	113.9685	NE LANTAU	x20	N	5.0	3	3	3.4	0	N	at Pier B7 (300m)
8-Oct-13	215	6	15:23:35	15:26:35	0:03:00	22.3010	113.9666	22.3010	113.9666	NE LANTAU	x20	N	4.9	3	3	3.3	0	N	at Pier B7 (500m)
8-Oct-13	216	4	16:02:40	16:05:40	0:03:00	22.3241	113.9892	22.3234	113.9907	NE LANTAU	x10	N	12.4	5	2	3.2	0	N	
8-Oct-13	217	1	16:33:34	16:36:34	0:03:00	22.3329	114.0133	22.3333	114.0139	NE LANTAU	x10	N	16.5	5	3	2.4	0	N	
8-Oct-13	218	6	16:59:26	17:04:26	0:05:00	22.3524	114.0070	22.3519	114.0080	NE LANTAU	x0	N	10.5	5	2	2.1	0	Y	
8-Oct-13	219	13	17:09:36	17:14:36	0:05:00	22.3511	114.0024	22.3504	114.0041	NE LANTAU	x0	N	11.1	5	2	3.1	0	Y	
8-Oct-13	220	7	17:21:10	17:25:10	0:04:00	22.3482	113.9975	22.3477	113.9984	NE LANTAU	x0	N	32.0	5	2	1.5	0	Y	
8-Oct-13	221	0	18:01:25	18:04:25	0:03:00	22.3369	113.9863	22.3366	113.9853	NE LANTAU	x10	N	4.6	3	2	3.6	0	N	
8-Oct-13	222	5	20:08:45	20:11:45	0:03:00	22.3017	113.9694	22.3018	113.9695	NE LANTAU	x0/x10	Y	4.8	3	2	1.8	0	N	gain change from 0 dB to 10dB @ 0:15
8-Oct-13	223	3	20:48:10	20:51:10	0:03:00	22.3018	113.9694	22.3018	113.9694	NE LANTAU	x20	N	5.0	3	2	1.3	0	N	croaking sound heard
8-Oct-13	224	5	21:16:31	21:19:31	0:03:00	22.3017	113.9694	22.3017	113.9694	NE LANTAU	x10	N	5.2	3	2	1.8	0	N	croaking sound heard
8-Oct-13	225	2	21:44:08	21:47:08	0:03:00	22.3017	113.9695	22.3017	113.9694	NE LANTAU	x10	N	5.3	3	2	1.8	0	N	croaking sound heard
8-Oct-13	226	2	22:18:00	22:21:00	0:03:00	22.3017	113.9695	22.3017	113.9695	NE LANTAU	x20	N	5.4	3	2	1.0	0	N	
8-Oct-13	227	2	22:49:37	22:52:37	0:03:00	22.3017	113.9695	22.3018	113.9694	NE LANTAU	x20/x10	Y	5.5	3	2	0.4	0	N	gain change from 20dB to 10dB @ 0:22
8-Oct-13	228	2	23:17:05	23:20:04	0:02:59	22.3017	113.9696	22.3017	113.9695	NE LANTAU	x10	N	5.5	3	2	2.4	0	N	
9-Oct-13	229	2	0:16:35	0:19:35	0:03:00	22.3017	113.9698	22.3017	113.9698	NE LANTAU	x10	N	5.5	3	1	2.9	0	N	

Appendix II. (cont'd)

Date	File #	No. Cues	Begin Time	End Time	Duration	Begin LAT	Begin LONG	End LAT	End LONG	Area	Gain	Gain Change?	Water Depth	Hp Depth	BSS	Wind Speed	Prec.	Dolphin Record?	Note(s)
9-Oct-13	231	2	1:19:55	1:21:55	0:02:00	22.3018	113.9693	22.3018	113.9693	NE LANTAU	x10	N	5.3	3	2	2.6	0	N	
9-Oct-13	232	2	2:15:55	2:18:55	0:03:00	22.3023	113.9698	22.3023	113.9698	NE LANTAU	x10	N	4.8	3	1	1.1	0	N	
9-Oct-13	233	2	3:17:33	3:20:33	0:03:00	22.3022	113.9700	22.3021	113.9701	NE LANTAU	x10	N	4.3	3	2	1.1	0	N	
9-Oct-13	234	2	4:18:50	4:21:50	0:03:00	22.3021	113.9701	22.3022	113.9701	NE LANTAU	x10	N	4.5	3	1	1.9	0	N	
9-Oct-13	235	2	5:52:43	5:55:44	0:03:01	22.3022	113.9700	22.3021	113.9701	NE LANTAU	x10	N	3.5	3	2	2.7	0	N	
9-Oct-13	236	3	6:18:23	6:21:23	0:03:00	22.3021	113.9701	22.3020	113.9701	NE LANTAU	x10	N	3.3	3	2	0.8	0	N	
9-Oct-13	237	5	6:48:23	6:51:23	0:03:00	22.3022	113.9700	22.3022	113.9700	NE LANTAU	x10	N	3.4	3	2	1.4	0	N	
9-Oct-13	238	9	7:32:30	7:35:30	0:03:00	22.3234	113.9692	22.3234	113.9693	NE LANTAU	x0	N	10.3	5	1	0.6	0	N	
9-Oct-13	239	3	8:03:20	8:06:20	0:03:00	22.3395	113.9553	22.3391	113.9552	NE LANTAU	x0	N	10.3	5	1	1.0	0	N	
9-Oct-13	240	8	8:21:50	8:24:50	0:03:00	22.3282	113.9694	22.3281	113.9682	NE LANTAU	x0	N	7.7	5	1	0.3	0	N	
9-Oct-13	241	4	8:41:59	8:44:59	0:03:00	22.3495	113.9634	22.3496	113.9626	NE LANTAU	x0	N	14.4	5	2	0.7	0	N	
9-Oct-13	242	8	9:02:18	9:05:18	0:03:00	22.3346	113.9755	22.3352	113.9751	NE LANTAU	x0	N	5.5	3	2	1.7	0	N	
9-Oct-13	243	4	9:33:10	9:38:10	0:05:00	22.3466	113.9897	22.3464	113.9886	NE LANTAU	x0	N	31.1	5	2	2.0	0	Y	
9-Oct-13	244	3	9:49:35	9:54:35	0:05:00	22.3477	113.9967	22.3474	113.9955	NE LANTAU	x0	N	33.7	5	2	1.1	0	Y	
9-Oct-13	245	2	10:09:50	10:14:50	0:05:00	22.3430	114.0015	22.3428	114.0023	NE LANTAU	x0	N	30.3	5	2	1.3	0	Y	
9-Oct-13	246	0	10:47:20	10:50:21	0:03:01	22.3330	114.0059	22.3327	114.0054	NE LANTAU	x0	N	15.1	5	2	0.8	0	N	
9-Oct-13	247	0	11:11:10	11:16:10	0:05:00	22.3332	113.9973	22.3328	113.9965	NE LANTAU	x0	N	9.1	5	2	1.4	0	Y	
9-Oct-13	248	9	11:43:44	11:46:44	0:03:00	22.3152	113.9721	22.3152	113.9712	NE LANTAU	x10	N	13.1	5	3	4.1	0	N	
10-Oct-13	249	1	10:01:49	10:06:49	0:05:00	22.3267	113.8798	22.3272	113.8781	NW LANTAU	x10	N	6.6	5	3	3.0	0	Y	
10-Oct-13	250	11	10:16:15	10:21:15	0:05:00	22.3282	113.8838	22.3286	113.8824	NW LANTAU	x10	N	6.5	5	2	2.8	0	Y	
10-Oct-13	251	1	10:28:50	10:33:50	0:05:00	22.3370	113.8818	22.3380	113.8802	NW LANTAU	x10	N	4.8	3	2	3.3	0	Y	
10-Oct-13	253	0	10:46:10	10:51:10	0:05:00	22.3421	113.8799	22.3432	113.8791	NW LANTAU	x10	N	5.8	5	2	1.8	0	Y	
10-Oct-13	254	2	10:53:32	10:58:37	0:05:05	22.3435	113.8787	22.3441	113.8781	NW LANTAU	x10	N	6.8	5	2	2.4	0	Y	
10-Oct-13	255	3	11:04:04	11:09:04	0:05:00	22.3452	113.8787	22.3458	113.8781	NW LANTAU	x10	N	7.0	5	2	2.9	0	Y	
10-Oct-13	256	2	12:23:40	12:27:40	0:04:00	22.3563	113.9109	22.3571	113.9035	NW LANTAU	x10/x0	Y	13.3	5	3	3.0	0	Y	gain change from 10dB to 0dB @ 2:05
10-Oct-13	257	6	13:02:28	13:07:28	0:05:00	22.3489	113.9530	22.3492	113.9522	NE LANTAU	x0	N	5.0	3	2	1.7	0	N	
10-Oct-13	258	4	13:35:34	13:40:34	0:05:00	22.3375	113.9591	22.3381	113.9591	NE LANTAU	x0	N	9.5	5	2	1.6	0	Y	
10-Oct-13	259	7	13:48:10	13:53:10	0:05:00	22.3370	113.9529	22.3380	113.9527	NE LANTAU	x0	N	8.4	5	2	0.3	0	Y	near HKBCF; sound of mud pit dredger
10-Oct-13	262	1	14:31:59	14:34:59	0:03:00	22.3351	113.9763	22.3347	113.9766	NE LANTAU	x0	N	5.9	5	1	1.6	0	N	
10-Oct-13	263	2	15:03:35	15:06:35	0:03:00	22.3388	113.9919	22.3389	113.9926	NE LANTAU	x0	N	10.4	5	2	2.8	0	N	
10-Oct-13	264	5	15:32:29	15:35:29	0:03:00	22.3467	114.0096	22.3462	114.0106	NE LANTAU	x10/x0	Y	24.7	5	2	3.0	0	N	gain change from 10dB to 0dB @ 1:45
10-Oct-13	265	6	16:16:35	16:19:35	0:03:00	22.3340	113.9986	22.3339	113.9994	NE LANTAU	x10	N	9.5	5	2	1.6	0	N	croaking sound heard
11-Oct-13	266	6	9:47:53	9:50:53	0:03:00	22.3057	113.9730	22.3052	113.9728	NE LANTAU	x10	N	3.3	3	1	0.6	0	N	
11-Oct-13	267	7	10:17:13	10:20:23	0:03:10	22.3212	113.9810	22.3212	113.9811	NE LANTAU	x20	N	11.1	5	1	0.0	0	N	
11-Oct-13	269	5	10:48:59	10:51:59	0:03:00	22.3367	114.0060	22.3363	114.0051	NE LANTAU	x10	N	13.4	5	1	1.1	0	N	
11-Oct-13	270	8	11:20:44	11:23:45	0:03:01	22.3444	114.0012	22.3441	114.0009	NE LANTAU	x10	N	33.0	5	2	2.1	0	N	
11-Oct-13	271	6	11:47:23	11:50:23	0:03:00	22.3446	113.9862	22.3441	113.9855	NE LANTAU	x10	N	29.3	5	2	1.5	0	N	
11-Oct-13	272	6	12:18:04	12:20:04	0:02:00	22.3508	113.9762	22.3508	113.9755	NE LANTAU	x10	N	13.2	5	2	2.1	0	N	
11-Oct-13	273	9	12:45:25	12:50:55	0:05:30	22.3437	113.9765	22.3436	113.9760	NE LANTAU	x10	N	30.4	5	2	0.4	0	Y	
11-Oct-13	274	9	13:00:00	13:05:00	0:05:00	22.3443	113.9725	22.3442	113.9715	NE LANTAU	x10	N	28.8	5	2	1.3	0	Y	
11-Oct-13	275	7	13:15:37	13:20:37	0:05:00	22.3449	113.9757	22.3452	113.9755	NE LANTAU	x10	N	32.0	5	2	2.3	0	Y	
11-Oct-13	276	1	13:26:32	13:30:32	0:04:00	22.3450	113.9786	22.3456	113.9787	NE LANTAU	x10	N	31.5	5	2	3.1	0	Y	
11-Oct-13	277	7	14:18:22	14:21:22	0:03:00	22.3354	113.9438	22.3355	113.9440	NE LANTAU	x10	N	8.7	5	2	2.7	0	N	
11-Oct-13	278	2	15:00:32	15:02:32	0:02:00	22.3039	113.9699	22.3039	113.9701	NE LANTAU	x10/x20	Y	4.3	3	2	0.8	0	N	gain change from 10dB to 20dB @ 0:25; at Pier B1 (0m)
11-Oct-13	279	4	15:12:48	15:14:48	0:02:00	22.3039	113.9697	22.3038	113.9699	NE LANTAU	x20	N	4.3	3	2	2.5	0	N	at Pier B1 (20m)
11-Oct-13	280	2	15:29:02	15:31:02	0:02:00	22.3038	113.9697	22.3037	113.9698	NE LANTAU	x20	N	4.4	3	2	1.2	0	N	at Pier B1 (10m)
11-Oct-13	281	3	15:38:24	15:40:24	0:02:00	22.3039	113.9694	22.3040	113.9696	NE LANTAU	x20	N	4.3	3	2	2.4	0	N	at Pier B1 (50m)
11-Oct-13	282	5	15:43:42	15:45:42	0:02:00	22.3039	113.9689	22.3039	113.9690	NE LANTAU	x20	N	4.3	3	2	0.3	0	N	at Pier B1 (100m)
11-Oct-13	283	4	15:49:58	15:51:58	0:02:00	22.3039	113.9680	22.3039	113.9682	NE LANTAU	x20	N	4.4	3	2	2.3	0	N	at Pier B1 (200m)
11-Oct-13	284	5	15:55:28	15:57:28	0:02:00	22.3039	113.9670	22.3039	113.9672	NE LANTAU	x20	N	4.3	3	2	2.5	0	N	at Pier B1 (300m)
11-Oct-13	285	3	16:01:34	16:03:34	0:02:00	22.3039	113.9650	22.3039	113.9651	NE LANTAU	x20	N	4.3	3	2	1.0	0	N	at Pier B1 (500m)
11-Oct-13	286	3	16:12:54	16:14:54	0:02:00	22.3032	113.9707	22.3031	113.9708	NE LANTAU	x20	N	4.3	3	2	1.2	0	N	at Pier B3 (0m)
11-Oct-13	287	5	16:18:02	16:20:03	0:02:01	22.3031	113.9705	22.3031	113.9705	NE LANTAU	x20	N	4.3	3	2	0.5	0	N	at Pier B3 (20m)
11-Oct-13	288	6	16:20:50	16:22:50	0:02:00	22.3031	113.9706	22.3031	113.9707	NE LANTAU	x20	N	4.3	3	2	0.6	0	N	at Pier B3 (10m)
11-Oct-13	289	3	16:26:29	16:28:29	0:02:00	22.3033	113.9702	22.3033	113.9702	NE LANTAU	x20	N	4.4	3	2	1.7	0	N	at Pier B3 (50m)
11-Oct-13	290	3	16:32:43	16:34:43	0:02:00	22.3032	113.9696	22.3032	113.9697	NE LANTAU	x20	N	4.3	3	2	1.0	0	N	at Pier B3 (100m)
11-Oct-13	291	4	16:39:08	16:41:08	0:02:00	22.3032	113.9688	22.3032	113.9690	NE LANTAU	x20	N	4.3	3	2	1.6	0	N	at Pier B3 (200m)
11-Oct-13	292	3	16:44:51	16:46:51	0:02:00	22.3032	113.9677	22.3031	113.9678	NE LANTAU	x20	N	4.3	3	2	1.2	0	N	at Pier B3 (300m)
11-Oct-13	293	5	16:50:30	16:52:30	0:02:00	22.3032	113.9658	22.3033	113.9659	NE LANTAU	x20	N	4.3	3	2	1.7	0	N	at Pier B3 (500m)
12-Oct-13	294	10	10:45:23	10:50:24	0:05:01	22.3785	113.9046	22.3770	113.9047	NW LANTAU	x0	N	19.8	5	2	4.5	0	Y	
12-Oct-13	295	6	11:04:50	11:10:05	0:05:15	22.3724	113.9125	22.3721	113.9132	NW LANTAU	x0	N	20.7	5	2	1.8	0	Y	
12-Oct-13	296	9	11:22:16	11:27:17	0:05:01	22.3739	113.9131	22.3734	113.9137	NW LANTAU	x0	N	17.6	5	2	1.3	0	Y	Near Power Plant ; a fuel tanker (~160m away) stopped next to power plant

Appendix II. (cont'd)

Date	File #	No. Cues	Begin Time	End Time	Duration	Begin LAT	Begin LONG	End LAT	End LONG	Area	Gain	Gain Change?	Water Depth	Hp Depth	BSS	Wind Speed	Prec.	Dolphin Record?	Note(s)
12-Oct-13	297	4	12:34:44	12:37:59	0:03:15	22.3332	113.9432	22.3333	113.9427	NW LANTAU	x0/x10	Y	7.7	5	2	2.9	0	N	
12-Oct-13	298	9	13:07:02	13:11:04	0:04:02	22.3501	113.9514	22.3509	113.9500	NE LANTAU	x10	N	14.3	5	3	5.4	0	N	
12-Oct-13	299	2	13:37:00	13:40:00	0:03:00	22.3374	113.9678	22.3379	113.9669	NE LANTAU	x20	N	10.7	5	3	4.1	0	N	
12-Oct-13	300	6	14:07:05	14:10:05	0:03:00	22.3230	113.9793	22.3235	113.9785	NE LANTAU	x20	N	11.0	5	2	3.5	0	N	
12-Oct-13	301	0	14:36:55	14:39:55	0:03:00	22.3395	113.9913	22.3399	113.9901	NE LANTAU	x20	N	11.9	5	2	2.3	0	N	
12-Oct-13	302	3	15:06:33	15:09:33	0:03:00	22.3326	114.0135	22.3330	114.0129	NE LANTAU	x20	N	16.7	5	2	2.5	0	N	
12-Oct-13	303	2	15:27:06	15:30:06	0:03:00	22.3258	113.9996	22.3262	113.9986	NE LANTAU	x20	N	13.8	5	2	2.1	0	N	
12-Oct-13	304	4	15:59:45	16:04:45	0:05:00	22.3294	113.9777	22.3301	113.9762	NE LANTAU	x10	N	9.6	5	3	2.4	0	Y	
12-Oct-13	305	1	16:05:19	16:10:18	0:04:59	22.3302	113.9760	22.3310	113.9746	NE LANTAU	x10	N	6.8	5	3	3.2	0	Y	
13-Oct-13	306	6	10:25:25	10:28:30	0:03:05	22.3103	113.9754	22.3098	113.9751	NE LANTAU	x10	N	4.5	3	2	2.9	0	N	
13-Oct-13	307	8	11:49:23	11:52:23	0:03:00	22.3360	113.9471	22.3357	113.9470	NE LANTAU	x10	N	7.5	5	3	2.4	0	N	
13-Oct-13	308	6	12:17:05	12:20:05	0:03:00	22.3293	113.9604	22.3293	113.9598	NE LANTAU	x10	N	7.7	5	2	1.5	0	N	
13-Oct-13	309	4	12:48:55	12:51:55	0:03:00	22.3394	113.9759	22.3394	113.9753	NE LANTAU	x10	N	7.3	5	3	3.3	0	N	
13-Oct-13	310	7	13:17:40	13:20:40	0:03:00	22.3492	113.9914	22.3491	113.9905	NE LANTAU	x10	N	20.3	5	2	0.7	0	N	
13-Oct-13	311	7	13:43:40	13:46:40	0:03:00	22.3460	113.9952	22.3428	113.9946	NE LANTAU	x10	N	32.9	5	2	1.4	0	Y	
13-Oct-13	312	5	14:16:57	14:19:57	0:03:00	22.3306	114.0114	22.3297	114.0109	NE LANTAU	x10	N	15.4	5	1	0.9	0	N	
13-Oct-13	313	4	14:47:14	14:50:14	0:03:00	22.3264	113.9838	22.3260	113.9823	NE LANTAU	x10	N	10.3	5	2	0.4	0	N	
13-Oct-13	314	4	15:18:50	15:21:50	0:03:00	22.3029	113.9651	22.3026	113.9646	NE LANTAU	x20	N	4.0	3	1	0.6	0	N	
13-Oct-13	315	5	15:49:40	15:52:40	0:03:00	22.3247	113.9698	22.3245	113.9692	NE LANTAU	x10	N	11.7	5	1	0.9	0	N	
13-Oct-13	316	4	16:20:05	16:23:07	0:03:02	22.3333	113.9768	22.3332	113.9762	NE LANTAU	x10	N	8.0	5	2	0.7	0	N	
14-Oct-13	318	2	9:53:53	9:56:53	0:03:00	22.3395	113.9948	22.3393	113.9947	NE LANTAU	x20	N	13.0	5	3	6.0	0	N	
14-Oct-13	319	1	10:22:55	10:25:55	0:03:00	22.3308	113.9854	22.3308	113.9861	NE LANTAU	x20	N	9.8	5	3	4.9	0	N	
14-Oct-13	320	5	10:59:53	11:02:53	0:03:00	22.3521	113.9753	22.3524	113.9761	NE LANTAU	x20	N	11.3	5	2	4.0	0	N	
14-Oct-13	321	6	11:27:15	11:30:15	0:03:00	22.3277	113.9618	22.3271	113.9620	NE LANTAU	x0	N	9.9	5	3	5.0	0	N	
14-Oct-13	322	6	11:58:37	12:01:37	0:03:00	22.3404	113.9466	22.3401	113.9468	NE LANTAU	x10	N	18.3	5	2	3.0	0	N	
14-Oct-13	323	1	13:14:28	13:19:28	0:05:00	22.3775	113.8749	22.3763	113.8742	NW LANTAU	x10	N	10.0	5	2	1.1	0	Y	
14-Oct-13	324	0	13:21:07	13:25:07	0:04:00	22.3759	113.8740	22.3748	113.8737	NW LANTAU	x10/x20	Y	10.0	5	1	0.9	0	Y	
14-Oct-13	325	3	13:46:14	13:51:16	0:05:02	22.3744	113.8876	22.3726	113.8869	NW LANTAU	x10	N	10.1	5	2	1.7	0	Y	
14-Oct-13	326	7	15:09:55	15:12:55	0:03:00	22.3021	113.9606	22.3027	113.9604	NE LANTAU	x20	N	3.5	3	2	1.2	0	N	
14-Oct-13	327	7	15:38:00	15:41:00	0:03:00	22.3158	113.9705	22.3163	113.9700	NE LANTAU	x10	N	14.4	5	1	1.1	0.5-2.0	N	
14-Oct-13	328	4	16:09:05	16:12:05	0:03:00	22.3235	113.9902	22.3226	113.9897	NE LANTAU	x10	N	13.1	5	0	0.6	0.5-2.0	N	
14-Oct-13	329	6	16:39:31	16:42:31	0:03:00	22.3309	114.0136	22.3308	114.0127	NE LANTAU	x10	N	9.6	5	1	0.6	0.5-2.0	N	
15-Oct-13	330	8	14:22:59	14:27:59	0:05:00	22.3664	113.9123	22.3655	113.9120	NW LANTAU	x10	N	20.5	5	3	4.2	0	Y	
15-Oct-13	331	10	14:46:55	14:51:55	0:05:00	22.3735	113.9137	22.3739	113.9133	NW LANTAU	x0	N	17.3	5	3	4.7	0	Y	Near Plant Power
15-Oct-13	332	5	15:06:20	15:09:20	0:03:00	22.3552	113.9213	22.3560	113.9211	NW LANTAU	x10	N	17.7	5	3	4.0	0	N	
15-Oct-13	333	5	15:21:50	15:24:50	0:03:00	22.3410	113.9307	22.3413	113.9301	NW LANTAU	x10	N	8.4	5	3	2.2	0	N	
15-Oct-13	334	7	15:47:00	15:50:00	0:03:00	22.3505	113.9532	22.3514	113.9523	NE LANTAU	x0	N	14.3	5	3	4.5	0	N	
15-Oct-13	335	5	16:16:42	16:19:47	0:03:05	22.3380	113.9667	22.3391	113.9649	NE LANTAU	x10	N	10.5	5	2	3.2	0	N	
15-Oct-13	336	11	16:47:15	16:50:15	0:03:00	22.3255	113.9800	22.3258	113.9790	NE LANTAU	x10	N	12.1	5	3	3.5	0	N	
15-Oct-13	337	2	17:17:50	17:20:50	0:03:00	22.3370	113.9985	22.3375	113.9976	NE LANTAU	x10	N	11.2	5	2	4.8	0	N	
15-Oct-13	338	1	19:17:20	19:19:35	0:02:15	22.3022	113.9711	22.3023	113.9712	NE LANTAU	x20	N	4.8	3	2	3.1	0	N	croaking sound heard
15-Oct-13	339	1	19:20:05	19:22:05	0:02:00	22.3022	113.9711	22.3023	113.9712	NE LANTAU	x20	N	4.8	3	2	1.6	0	N	at Pier B5 (20m)
15-Oct-13	340	1	19:22:52	19:24:52	0:02:00	22.3023	113.9711	22.3022	113.9711	NE LANTAU	x20	N	4.8	3	2	2.6	0	N	
15-Oct-13	341	1	19:50:01	19:52:01	0:02:00	22.3023	113.9712	22.3022	113.9711	NE LANTAU	x20	N	4.8	3	2	3.1	0	N	at Pier B5 (10m); croaking sound
15-Oct-13	342	1	19:55:08	19:57:08	0:02:00	22.3022	113.9713	22.3022	113.9713	NE LANTAU	x20	N	5.0	3	3	2.7	0	N	at Pier B5 (0m)
15-Oct-13	343	3	20:07:52	20:09:52	0:02:00	22.3022	113.9707	22.3022	113.9707	NE LANTAU	x20	N	4.8	3	2	3.5	0	N	at Pier B5 (50m); croaking sound
15-Oct-13	344	3	20:19:17	20:21:28	0:02:11	22.3021	113.9702	22.3022	113.9702	NE LANTAU	x20	N	4.9	3	2	3.4	0	N	at Pier B5 (100m)
15-Oct-13	345	3	20:30:13	20:32:13	0:02:00	22.3022	113.9695	22.3023	113.9693	NE LANTAU	x20	N	4.7	3	2	3.3	0	N	at Pier B5 (200m)
15-Oct-13	346	3	20:39:15	20:41:15	0:02:00	22.3021	113.9684	22.3022	113.9684	NE LANTAU	x20	N	4.8	3	2	2.6	0	N	at Pier B5 (300m)
15-Oct-13	347	4	20:50:40	20:52:40	0:02:00	22.3021	113.9664	22.3021	113.9964	NE LANTAU	x20	N	4.7	3	2	1.4	0	N	at Pier B5 (500m)
15-Oct-13	348	1	21:08:10	21:10:10	0:02:00	22.3012	113.9715	22.3012	113.9715	NE LANTAU	x10	N	4.9	3	2	2.7	0	N	at Pier B7 (0m)
15-Oct-13	349	1	21:17:05	21:19:05	0:02:00	22.3012	113.9713	22.3012	113.9713	NE LANTAU	x10	N	5.1	3	2	3.1	0	N	at Pier B7 (10m)
15-Oct-13	350	2	21:25:03	21:28:03	0:03:00	22.3012	113.9711	22.3011	113.9711	NE LANTAU	x10	N	5.1	3	2	3.5	0	N	at Pier B7 (20m)
15-Oct-13	352	3	21:34:03	21:36:03	0:02:00	22.3012	113.9709	22.3011	113.9709	NE LANTAU	x10	N	5.0	3	2	4.2	0	N	at Pier B7 (50m)
15-Oct-13	353	3	21:43:29	21:45:29	0:02:00	22.3011	113.9704	22.3011	113.9703	NE LANTAU	x10	N	5.1	3	2	4.1	0	N	at Pier B7 (100m)
15-Oct-13	354	3	21:54:20	21:56:20	0:02:00	22.3010	113.9694	22.3010	113.9694	NE LANTAU	x10	N	5.1	3	2	2.6	0	N	at Pier B7 (200m)
15-Oct-13	355	5	22:05:45	22:07:45	0:02:00	22.3011	113.9685	22.3010	113.9684	NE LANTAU	x10	N	5.2	3	2	3.8	0	N	at Pier B7 (300m)
15-Oct-13	356	4	22:17:03	22:19:03	0:02:00	22.3011	113.9665	22.3010	113.9664	NE LANTAU	x10	N	5.2	3	2	3.9	0	N	at Pier B7 (500m)
15-Oct-13	357	3	23:09:35	23:12:35	0:03:00	22.3022	113.9687	22.3022	113.9687	NE LANTAU	x10	N	4.3	3	2	2.9	0	N	
15-Oct-13	358	3	23:35:58	23:38:58	0:03:00	22.3024	113.9689	22.3024	113.9689	NE LANTAU	x20	N	4.1	3	2	1.7	0	N	
16-Oct-13	359	4	0:07:25	0:10:25	0:03:00	22.3023	113.9688	22.3023	113.9688	NE LANTAU	x20	N	4.2	3	2	2.6	0	N	
16-Oct-13	360	3	1:05:10	1:08:10	0:03:00	22.3022	113.9687	22.3023	113.9688	NE LANTAU	x20	N	3.9	3	2	3.8	0	N	

Appendix II. (cont'd)

		No.	Begin	End		Begin		End				Gain	Water	Hp		Wind		Dolphin	
Date	File #	Cues	Time	Time	Duration	LAT	LONG	LAT	LONG	Area	Gain	Change?	Depth	Depth	BSS	Speed	Prec.	Record?	Note(s)
16-Oct-13	361	3	1:59:27	2:02:27	0:03:00	22.3019	113.9687	22.3018	113.9687	NE LANTAU	x20	N	4.0	3	2	1.6	0	N	
16-Oct-13	362	3	3:03:40	3:06:40	0:03:00	22.3018	113.9687	22.3019	113.9687	NE LANTAU	x20	N	4.4	3	2	1.2	0	N	
16-Oct-13	363	3	4:03:50	4:05:50	0:02:00	22.3018	113.9687	22.3018	113.9687	NE LANTAU	x20	N	4.4	3	2	2.1	0	N	
16-Oct-13	364	3	6:03:55	6:06:56	0:03:01	22.3015	113.9689	22.3017	113.9687	NE LANTAU	x20	N	5.5	3	2	2.3	0	N	
16-Oct-13	365	3	6:28:30	6:30:30	0:02:00	22.3016	113.9688	22.3017	113.9687	NE LANTAU	x20	N	5.2	3	2	2.9	0	N	
16-Oct-13	366	3	6:52:44	6:55:44	0:03:00	22.3016	113.9687	22.3016	113.9688	NE LANTAU	x20	N	5.2	3	3	2.8	0	N	
16-Oct-13	367	5	7:22:46	7:25:46	0:03:00	22.3061	113.9616	22.3059	113.9611	NE LANTAU	x10	N	5.0	3	3	3.8	0	N	
16-Oct-13	368	5	7:43:01	7:46:01	0:03:00	22.3080	113.9710	22.3075	113.9708	NE LANTAU	x20	N	5.3	3	3	4.5	0	N	
16-Oct-13	369	5	8:02:35	8:05:35	0:03:00	22.3066	113.9778	22.3065	113.9778	NE LANTAU	x20	N	5.8	3	3	3.9	0	N	
16-Oct-13	370	1	8:22:59	8:26:01	0:03:02	22.3237	113.9886	22.3234	113.9883	NE LANTAU	x10/x0	Y	13.2	5	3	4.7	0	N	snapping shrimp sound
16-Oct-13	371	5	8:43:50	8:46:50	0:03:00	22.3351	113.9981	22.3345	113.9980	NE LANTAU	x10	N	9.8	5	4	4.3	0	N	
16-Oct-13	372	0	9:03:00	9:06:00	0:03:00	22.3352	114.0137	22.3351	114.0139	NE LANTAU	x10	N	11.6	5	3	2.9	0	N	
16-Oct-13	373	0	9:32:35	9:35:35	0:03:00	22.3401	113.9961	22.3397	113.9967	NE LANTAU	x10	N	15.3	5	4	4.0	0	N	
16-Oct-13	374	7	10:02:00	10:05:00	0:03:00	22.3252	113.9798	22.3249	113.9799	NE LANTAU	x10	N	13.0	5	4	4.5	0	N	
16-Oct-13	375	2	10:32:33	10:35:33	0:03:00	22.3387	113.9668	22.3389	113.9670	NE LANTAU	x10	N	11.6	5	4	4.2	0	N	
16-Oct-13	376	5	11:09:30	11:13:00	0:03:30	22.3302	113.9255	22.3295	113.9255	NW LANTAU	x10	N	8.5	5	3	4.8	0	N	
16-Oct-13	377	4	11:25:25	11:28:25	0:03:00	22.3215	113.9044	22.3211	113.9037	NW LANTAU	x10	N	6.6	5	3	2.0	0	N	
17-Oct-13	378	4	9:32:16	9:35:16	0:03:00	22.3361	113.9981	22.3366	113.9975	NE LANTAU	x20	N	11.0	5	3	3.7	0	N	
17-Oct-13	379	5	10:02:26	10:05:26	0:03:00	22.3259	113.9802	22.3264	113.9799	NE LANTAU	x10	N	12.3	5	3	3.0	0	N	
17-Oct-13	380	7	10:32:02	10:35:02	0:03:00	22.3426	113.9675	22.3427	113.9679	NE LANTAU	x10	N	15.6	5	4	4.3	0	N	
17-Oct-13	381	10	11:02:38	11:05:41	0:03:03	22.3480	113.9599	22.3476	113.9604	NE LANTAU	x10	N	16.5	5	3	5.0	0	N	
17-Oct-13	382	5	11:31:55	11:34:55	0:03:00	22.3356	113.9315	22.3354	113.9316	NW LANTAU	x10	N	8.2	5	3	3.8	0	N	
17-Oct-13	383	0	12:58:52	13:01:52	0:03:00	22.3305	113.9039	22.3287	113.9026	NW LANTAU	x10	N	6.6	3	4	4.0	0	N	snapping shrimp sound
17-Oct-13	384	6	13:20:04	13:23:04	0:03:00	22.3314	113.9323	22.3309	113.9323	NW LANTAU	x20	N	8.2	5	4	3.8	0	N	
17-Oct-13	385	7	14:04:14	14:07:15	0:03:01	22.3064	113.9618	22.3060	113.9612	NE LANTAU	x20	N	3.9	3	3	2.9	0	N	
17-Oct-13	386	7	14:32:20	14:35:22	0:03:02	22.3133	113.9747	22.3135	113.9742	NE LANTAU	x20	N	13.4	5	2	1.4	0	N	
17-Oct-13	387	2	15:01:54	15:04:54	0:03:00	22.3170	113.9926	22.3172	113.9921	NE LANTAU	x20	N	7.0	5	2	3.3	0	N	snapping shrimp sound
17-Oct-13	388	2	15:32:16	15:35:46	0:03:30	22.3310	114.0134	22.3313	114.0126	NE LANTAU	x10	N	10.5	5	2	2.9	0	N	
17-Oct-13	389	8	16:03:23	16:06:23	0:03:00	22.3449	113.9761	22.3453	113.9750	NE LANTAU	x10	N	32.4	5	2	3.7	0	N	
18-Oct-13	390	4	9:33:43	9:36:43	0:03:00	22.3395	114.0014	22.3394	114.0008	NE LANTAU	x10	N	18.4	5	3	2.7	0	N	
18-Oct-13	391	3	10:02:35	10:05:35	0:03:00	22.3345	113.9854	22.3342	113.9852	NE LANTAU	x20	N	6.4	5	3	4.1	0	N	
18-Oct-13	392	6	10:33:18	10:36:18	0:03:00	22.3459	113.9696	22.3455	113.9694	NE LANTAU	x10	N	27.8	5	3	3.2	0	N	
18-Oct-13	393	6	11:03:08	11:06:08	0:03:00	22.3458	113.9600	22.3459	113.9602	NE LANTAU	x10	N	21.8	5	3	5.2	0	N	
18-Oct-13	394	6	12:24:18	12:30:18	0:06:00	22.3714	113.8931	22.3676	113.8940	NW LANTAU	x20/x10	Y	14.2	5	3	5.9	0	Y	
18-Oct-13	395	2	12:30:50	12:35:50	0:05:00	22.3676	113.8940	22.3641	113.8949	NW LANTAU	x10	N	14.2	5	3	5.0	0	Y	
18-Oct-13	396	3	12:51:35	12:56:35	0:05:00	22.3751	113.8931	22.3724	113.8936	NW LANTAU	x10	N	18.1	5	3	3.6	0	Y	snapping shrimp sound
18-Oct-13	397	1	13:05:36	13:10:36	0:05:00	22.3811	113.8923	22.3782	113.8932	NW LANTAU	x10	N	21.7	5	2	2.6	0	Y	
18-Oct-13	398	1	13:20:08	13:25:08	0:05:00	22.3856	113.8887	22.3825	113.8888	NW LANTAU	x10	N	20.5	5	2	2.6	0	Y	
18-Oct-13	399	0	13:25:19	13:30:19	0:05:00	22.3824	113.8888	22.3793	113.8894	NW LANTAU	x10	N	20.5	5	2	2.1	0	Y	snapping shrimp sound
18-Oct-13	400	5	14:10:12	14:13:14	0:03:02	22.3242	113.9019	22.3226	113.9014	NW LANTAU	x10/x20	Y	6.9	5	2	2.7	0	N	
18-Oct-13	401	4	14:21:00	14:24:00	0:03:00	22.3241	113.9119	22.3232	113.9119	NW LANTAU	x10/x20	Y	5.5	3	3	2.7	0	N	
18-Oct-13	402	3	14:32:09	14:35:09	0:03:00	22.3286	113.9217	22.3283	113.9219	NW LANTAU	x20/x10	Y	5.5	3	2	0.4	0	Y	
18-Oct-13	403	5	15:24:58	15:27:26	0:02:28	22.3091	113.9642	22.3094	113.9643	NE LANTAU	x20	N	3.9	3	0	0.4	0	N	
18-Oct-13	404	4	15:56:35	15:59:34	0:02:59	22.3127	113.9809	22.3131	113.9803	NE LANTAU	x20	N	5.1	3	1	3.4	0	N	
18-Oct-13	405	4	16:22:22	16:25:22	0:03:00	22.3305	113.9993	22.3305	113.9993	NE LANTAU	x10	N	11.8	5	2	3.3	0	N	
19-Oct-13	406	3	10:22:25	10:25:25	0:03:00	22.3318	113.9848	22.3313	113.9847	NE LANTAU	x20	N	10.6	5	2	1.1	0	N	
19-Oct-13	407	10	10:48:40	10:54:00	0:05:20	22.3337	113.9728	22.3320	113.9732	NE LANTAU	x20/x10	Y	8.2	5	3	3.6	0	Y	
19-Oct-13	409	7	11:04:01	11:09:01	0:05:00	22.3350	113.9680	22.3339	113.9688	NE LANTAU	x0	N	7.8	5	3	2.8	0	Y	
19-Oct-13	410	7	11:22:47	11:27:47	0:05:00	22.3397	113.9627	22.3391	113.9649	NE LANTAU	x0/x10	Y	12.0	5	3	2.1	0	Y	
19-Oct-13	411	5	11:36:10	11:39:10	0:03:00	22.3393	113.9582	22.3393	113.9587	NE LANTAU	x10	N	11.0	5	2	2.8	0	Y	
19-Oct-13	412	9	12:03:03	12:08:03	0:05:00	22.3429	113.9456	22.3426	113.9469	NW LANTAU	x0	N	14.2	5	2	2.1	0	Y	
19-Oct-13	413	5	12:20:50	12:24:52	0:04:02	22.3491	113.9434	22.3488	113.9448	NW LANTAU	x0	N	22.9	5	2	0.5	0	Y	
19-Oct-13	414	8	12:34:09	12:37:18	0:03:09	22.3523	113.9412	22.3517	113.9424	NW LANTAU	x0	N	22.3	5	2	0.6	0	Y	
19-Oct-13	415	9	12:50:10	12:55:10	0:05:00	22.3537	113.9362	22.3523	113.9382	NW LANTAU	x0	N	24.3	5	2	3.2	0	Y	
19-Oct-13	416	6	13:15:10	13:20:10	0:05:00	22.3578	113.9283	22.3560	113.9296	NW LANTAU	x0	N	21.6	5	2	1.6	0	Y	
19-Oct-13	417	4	14:07:30	14:10:30	0:03:00	22.3357	113.9088	22.3342	113.9097	NW LANTAU	x10	N	4.6	3	3	4.9	0	N	
19-Oct-13	418	4	14:25:50	14:28:50	0:03:00	22.3304	113.9253	22.3294	113.9264	NW LANTAU	x10	N	7.9	5	2	3.2	0	N	
19-Oct-13	419	4	14:36:50	14:39:50	0:03:00	22.3322	113.9393	22.3316	113.9410	NW LANTAU	x10	N	9.6	5	3	2.7	0	N	
19-Oct-13	420	6	15:26:10	15:29:10	0:03:00	22.3086	113.9713	22.3090	113.9715	NE LANTAU	x10	N	4.2	3	2	2.6	0	N	
19-Oct-13	421	4	16:20:00	16:23:00	0:03:00	22.3315	114.0145	22.3319	114.0146	NE LANTAU	x10	N	10.5	5	2	0.8	0	N	
20-Oct-13	422	2	9:40:40	9:45:40	0:05:00	22.3302	113.9892	22.3301	113.9886	NE LANTAU	x20/x10	Y	10.0	5	2	0.9	0	Y	
20-Oct-13	423	2	10:17:55	10:23:10	0:05:15	22.3173	113.9774	22.3172	113.9775	NE LANTAU	x10	N	9.8	5	1	1.8	0	Y	

Appendix II. (cont'd)

Date	File #	No. Cues	Begin Time	End Time	Duration	Begin LAT	Begin LONG	End LAT	End LONG	Area	Gain	Gain Change?	Water Depth	Hp Depth	BSS	Wind Speed	Prec.	Dolphin Record?	Note(s)
20-Oct-13	424	0	10:23:20	10:28:20	0:05:00	22.3172	113.9775	22.3173	113.9778	NE LANTAU	x10	N	9.7	5	1	0.6	0	Y	
20-Oct-13	425	1	10:28:30	10:33:30	0:05:00	22.3173	113.9778	22.3174	113.9781	NE LANTAU	x10	N	9.9	5	1	1.4	0	Y	
20-Oct-13	426	6	10:41:47	10:46:47	0:05:00	22.3192	113.9794	22.3195	113.9798	NE LANTAU	x10	N	11.4	5	1	0.3	0	Y	
20-Oct-13	427	7	10:55:11	11:00:11	0:05:00	22.3157	113.9848	22.3162	113.9855	NE LANTAU	x10	N	10.4	5	1	0.3	0	Y	
20-Oct-13	428	8	11:59:44	12:02:44	0:03:00	22.3295	113.9600	22.3297	113.9607	NE LANTAU	x10	N	8.3	5	2	1.3	0	N	
20-Oct-13	429	3	12:23:15	12:26:15	0:03:00	22.3361	113.9273	22.3356	113.9282	NW LANTAU	x10	N	8.5	5	2	2.7	0	N	
20-Oct-13	430	2	12:57:57	13:02:57	0:05:00	22.3388	113.8924	22.3377	113.8926	NW LANTAU	x10	N	9.7	5	2	2.4	0	Y	
20-Oct-13	431	5	13:14:08	13:19:08	0:05:00	22.3449	113.8949	22.3433	113.8958	NW LANTAU	x10	N	11.1	5	2	2.3	0	Y	
20-Oct-13	432	2	13:34:55	13:39:55	0:05:00	22.3511	113.8932	22.3493	113.8943	NW LANTAU	x10	N	9.1	5	2	2.7	0	Y	
20-Oct-13	433	0	13:49:15	13:54:15	0:05:00	22.3548	113.8930	22.3526	113.8944	NW LANTAU	x10	N	9.0	5	3	4.2	0	Y	
20-Oct-13	434	0	14:21:40	14:24:40	0:03:00	22.3284	113.9145	22.3273	113.9156	NW LANTAU	x10	N	6.7	5	3	4.2	0	N	
20-Oct-13	435	3	14:37:00	14:40:00	0:03:00	22.3303	113.9358	22.3295	113.9382	NW LANTAU	x0	N	7.1	5	3	2.8	0	N	
20-Oct-13	436	9	15:22:44	15:25:44	0:03:00	22.3495	113.9758	22.3493	113.9776	NE LANTAU	x10	N	15.6	5	2	3.4	0	N	
20-Oct-13	437	0	16:09:05	16:12:05	0:03:00	22.3379	114.0048	22.3375	114.0057	NE LANTAU	x10	N	14.8	5	2	2.5	0	N	
21-Oct-13	438	4	9:37:24	9:41:24	0:04:00	22.3309	113.9868	22.3303	113.9861	NE LANTAU	x10	N	9.8	5	1	0.7	0	Y	
21-Oct-13	439	1	10:17:23	10:20:23	0:03:00	22.3358	113.9773	22.3359	113.9775	NE LANTAU	x20	N	5.8	3	2	0.5	0	N	
21-Oct-13	440	5	10:57:41	11:03:01	0:05:20	22.3436	113.9660	22.3428	113.9651	NE LANTAU	X10	N	23.7	5	2	2.2	0	Y	
21-Oct-13	441	5	11:11:19	11:16:19	0:05:00	22.3397	113.9549	22.3395	113.9540	NE LANTAU	x10/x0	Y	11.0	5	2	1.0	0	Y	
21-Oct-13	442	6	11:25:33	11:30:33	0:05:00	22.3398	113.9432	22.3403	113.9428	NE LANTAU	x20	N	28.7	5	2	0.3	0	Y	
21-Oct-13	443	3	12:03:53	12:06:23	0:02:30	22.3037	113.9703	22.3037	113.9705	NE LANTAU	x20	N	4.8	3	2	1.3	0	N	at Pier B2 (0m)
21-Oct-13	444	4	12:11:01	12:13:01	0:02:00	22.3036	113.9702	22.3036	113.9701	NE LANTAU	x20	N	4.9	3	2	1.9	0	N	at Pier B2 (10m)
21-Oct-13	445	4	12:14:51	12:16:51	0:02:00	22.3036	113.9701	22.3036	113.9701	NE LANTAU	x20	N	4.9	3	2	1.0	0	N	at Pier B2 (20m)
21-Oct-13	446	4	12:22:12	12:24:12	0:02:00	22.3036	113.9698	22.3037	113.9698	NE LANTAU	x20	N	4.9	3	2	2.4	0	N	at Pier B2 (50m)
21-Oct-13	447	6	12:28:28	12:30:28	0:02:00	22.3034	113.9693	22.3034	113.9693	NE LANTAU	x20	N	5.0	3	2	3.5	0	N	at Pier B2 (100m)
21-Oct-13	448	4	12:37:00	12:39:00	0:02:00	22.3035	113.9683	22.3035	113.9683	NE LANTAU	x20	N	4.7	3	2	2.6	0	N	at Pier B2 (200m)
21-Oct-13	449	5	12:45:00	12:47:00	0:02:00	22.3037	113.9673	22.3037	113.9673	NE LANTAU	x20	N	4.6	3	2	3.3	0	N	at Pier B2 (300m)
21-Oct-13	450	4	12:54:30	12:56:30	0:02:00	22.3037	113.9654	22.3037	113.9654	NE LANTAU	x20	N	4.7	3	2	2.9	0	N	at Pier B2 (500m)
21-Oct-13	451	4	13:13:33	13:15:33	0:02:00	22.3017	113.9713	22.3018	113.9715	NE LANTAU	x20	N	5.2	3	2	3.2	0	N	at Pier B6 (10m)
21-Oct-13	452	4	13:20:32	13:22:33	0:02:01	22.3017	113.9712	22.3017	113.9712	NE LANTAU	x20	N	5.1	3	2	3.3	0	N	at Pier B6 (20m)
21-Oct-13	453	2	13:27:18	13:29:18	0:02:00	22.3017	113.9714	22.3017	113.9714	NE LANTAU	x20	N	5.1	3	2	1.1	0	N	at Pier B6 (0m)
21-Oct-13	454	5	13:33:35	13:35:35	0:02:00	22.3017	113.9709	22.3018	113.9709	NE LANTAU	x20	N	5.1	3	2	2.6	0	N	at Pier B6 (50m)
21-Oct-13	455	3	13:41:18	13:43:22	0:02:04	22.3017	113.9704	22.3016	113.9703	NE LANTAU	x20	N	4.9	3	2	2.8	0	N	at Pier B6 (100m)
21-Oct-13	456	4	13:45:37	13:47:37	0:02:00	22.3017	113.9703	22.3016	113.9703	NE LANTAU	x20	N	4.9	3	2	2.6	0	N	at Pier B6 (100m)
21-Oct-13	457	8	13:54:33	13:56:33	0:02:00	22.3018	113.9695	22.3018	113.9695	NE LANTAU	x20	N	4.8	3	2	1.0	0	N	at Pier B6 (200m)
21-Oct-13	458	6	14:03:12	14:05:12	0:02:00	22.3017	113.9685	22.3017	113.9685	NE LANTAU	x20	N	4.5	3	2	2.1	0	N	at Pier B6 (300m)
21-Oct-13	459	5	14:11:46	14:13:46	0:02:00	22.3017	113.9665	22.3017	113.9665	NE LANTAU	x20	N	4.4	3	2	1.8	0	N	at Pier B6 (500m)
21-Oct-13	460	0	15:22:30	15:25:30	0:03:00	22.3253	113.9998	22.3255	114.0019	NE LANTAU	x20	N	13.4	5	2	2.1	0	N	snapping shrimp and croaker sound
21-Oct-13	461	3	16:27:25	16:31:25	0:04:00	22.3419	113.9781	22.3420	113.9799	NE LANTAU	x10/x0	Y	13.3	5	2	2.9	0	Y	noise generated by boat propeller from 02:00-04:00
22-Oct-13	462	5	12:59:20	13:02:20	0:03:00	22.3260	113.9771	22.3258	113.9771	NE LANTAU	x10	N	8.1	5	2	2.0	0	N	
22-Oct-13	463	6	13:37:36	13:40:36	0:03:00	22.3292	113.9615	22.3292	113.9624	NE LANTAU	x0	N	8.4	5	2	3.7	0	N	
22-Oct-13	464	7	14:24:25	14:27:25	0:03:00	22.3153	113.9669	22.3152	113.9675	NE LANTAU	x10	N	7.3	5	2	4.3	0	N	
22-Oct-13	465	0	16:17:12	16:22:12	0:05:00	22.3379	113.9746	22.3377	113.9760	NE LANTAU	x0	N	5.5	3	2	5.3	0	Y	
22-Oct-13	466	4	16:47:55	16:52:55	0:05:00	22.3389	113.9742	22.3394	113.9750	NE LANTAU	x0	N	6.5	3	2	3.3	0	Y	
22-Oct-13	467	9	17:09:49	17:14:49	0:05:00	22.3280	113.9732	22.3284	113.9736	NE LANTAU	x10	N	8.4	5	2	1.7	0	Y	
22-Oct-13	468	2	17:22:22	17:27:22	0:05:00	22.3235	113.9789	22.3231	113.9790	NE LANTAU	x10	N	11.5	5	2	2.3	0	Y	croaking sound heard
22-Oct-13	469	3	17:37:03	17:42:18	0:05:15	22.3172	113.9844	22.3169	113.9840	NE LANTAU	x10	N	7.5	5	2	3.5	0	Y	
22-Oct-13	470	1	17:54:00	17:59:00	0:05:00	22.3190	113.9897	22.3186	113.9892	NE LANTAU	x10	N	10.8	5	2	2.7	0	Y	croaking sound heard
22-Oct-13	473	1	18:02:40	18:07:40	0:05:00	22.3183	113.9888	22.3179	113.9881	NE LANTAU	x10	N	10.3	5	2	2.6	0	Y	croaking sound heard
22-Oct-13	474	3	19:05:13	19:08:13	0:03:00	22.3017	113.9684	22.3017	113.9684	NE LANTAU	x20	N	4.5	3	2	2.0	0	N	croaking sound heard
22-Oct-13	475	3	20:14:10	20:17:10	0:03:00	22.3016	113.9684	22.3016	113.9684	NE LANTAU	x20	N	5.1	3	2	1.4	0	N	croaking sound heard
22-Oct-13	477	3	20:48:15	20:51:15	0:03:00	22.3017	113.9684	22.3017	113.9684	NE LANTAU	x20	N	4.9	3	2	1.8	0	N	croaking sound heard
22-Oct-13	478	6	21:16:50	21:19:50	0:03:00	22.3017	113.9684	22.3018	113.9684	NE LANTAU	x20	N	5.0	3	2	1.7	0	N	croaking sound heard
22-Oct-13	479	3	21:50:28	21:53:28	0:03:00	22.3018	113.9684	22.3019	113.9685	NE LANTAU	x20	N	5.0	3	2	2.6	0	N	
22-Oct-13	480	3	22:15:41	22:18:41	0:03:00	22.3019	113.9685	22.3019	113.9686	NE LANTAU	x20	N	5.1	3	2	1.8	0	N	
22-Oct-13	481	3	22:47:53	22:49:53	0:02:00	22.3019	113.9686	22.3019	113.9687	NE LANTAU	x20	N	5.3	3	2	1.2	0	N	
22-Oct-13	482	4	23:20:40	23:23:40	0:03:00	22.3019	113.9685	22.3019	113.9686	NE LANTAU	x20	N	5.3	3	2	2.1	0	N	
22-Oct-13	483	3	23:52:55	23:55:55	0:03:00	22.3019	113.9686	22.3019	113.9686	NE LANTAU	x20	N	5.2	3	3	1.6	0	N	
23-Oct-13	484	3	0:48:10	0:51:10	0:03:00	22.3013	113.9686	22.3013	113.9686	NE LANTAU	x20	N	5.6	3	2	0.8	0	N	
23-Oct-13	485	3	1:46:05	1:49:05	0:03:00	22.3019	113.9687	22.3019	113.9687	NE LANTAU	x20	N	5.0	3	2	2.8	0	N	
23-Oct-13	486	3	2:49:15	2:52:15	0:03:00	22.3018	113.9689	22.3019	113.9689	NE LANTAU	x20	N	4.7	3	2	0.9	0	N	
23-Oct-13	487	3	3:45:58	3:48:58	0:03:00	22.3013	113.9690	22.3013	113.9687	NE LANTAU	x20	N	4.6	3	3	3.3	0	N	
23-Oct-13	488	3	4:46:07	4:49:07	0:03:00	22.3019	113.9689	22.3019	113.9689	NE LANTAU	x30	N	3.8	3	2	1.1	0	N	

Appendix II. (cont'd)

Date	File #	No. Cues	Begin Time	End Time	Duration	Begin LAT	Begin LONG	End LAT	End LONG	Area	Gain	Gain Change?	Water Depth	Hp Depth	BSS	Wind Speed	Prec.	Dolphin Record?	Note(s)
23-Oct-13	489	3	5:48:00	5:51:00	0:03:00	22.3019	113.9686	22.3019	113.9686	NE LANTAU	x20	N	3.6	3	2	1.6	0	N	
23-Oct-13	490	4	6:17:53	6:20:53	0:03:00	22.3018	113.9685	22.3018	113.9685	NE LANTAU	x20	N	3.4	3	1	1.2	0	N	
23-Oct-13	491	5	6:45:48	6:48:48	0:03:00	22.3012	113.9685	22.3012	113.9685	NE LANTAU	x20	N	4.1	3	2	1.2	0	N	
23-Oct-13	492	4	7:21:47	7:24:47	0:03:00	22.3099	113.9623	22.3094	113.9619	NE LANTAU	x20	N	4.9	3	2	2.1	0	N	
23-Oct-13	493	5	7:57:30	8:00:30	0:03:00	22.3123	113.9806	22.3121	113.9799	NE LANTAU	x20	N	4.9	3	2	3.2	0	N	
23-Oct-13	494	2	8:18:22	8:21:22	0:03:00	22.3182	113.9911	22.3173	113.9908	NE LANTAU	x20	N	10.3	5	2	1.6	0	N	
23-Oct-13	495	3	8:49:12	8:54:12	0:05:00	22.3309	113.9942	22.3298	113.9923	NE LANTAU	x20	N	8.8	5	3	4.7	0	Y	
23-Oct-13	496	0	9:32:28	9:35:28	0:03:00	22.3316	114.0135	22.3309	114.0129	NE LANTAU	x20	N	12.8	5	3	3.8	0	N	
23-Oct-13	497	4	10:19:36	10:22:36	0:03:00	22.3444	113.9850	22.3441	113.9839	NE LANTAU	x20/x10	Y	29.3	5	3	2.5	0	N	
23-Oct-13	498	5	11:01:40	11:06:40	0:05:00	22.3439	113.9739	22.3431	113.9730	NE LANTAU	x10	N	29.7	5	3	4.4	0	Y	
24-Oct-13	499	3	9:48:33	9:51:33	0:03:00	22.3347	113.9854	22.3338	113.9842	NE LANTAU	x20	N	5.2	3	3	4.3	0	N	
24-Oct-13	500	5	10:32:50	10:35:50	0:03:00	22.3294	113.9605	22.3294	113.9593	NE LANTAU	x10	N	8.4	5	4	5.7	0	N	
24-Oct-13	501	4	12:35:19	12:40:19	0:05:00	22.3860	113.8951	22.3858	113.8958	NW LANTAU	x20	N	21.7	5	3	6.2	0	Y	
24-Oct-13	502	5	13:04:04	13:09:04	0:05:00	22.3861	113.9032	22.3867	113.9039	NW LANTAU	x0	N	17.3	5	3	3.0	0	Y	
24-Oct-13	503	8	13:15:37	13:20:39	0:05:02	22.3856	113.9045	22.3860	113.9047	NW LANTAU	x10	N	15.3	5	3	3.8	0	Y	
24-Oct-13	504	5	13:20:51	13:26:05	0:05:14	22.3860	113.9047	22.3866	113.9054	NW LANTAU	x10	N	14.3	5	3	5.6	0	Y	
24-Oct-13	505	2	13:26:23	13:31:23	0:05:00	22.3866	113.9054	22.3871	113.9061	NW LANTAU	x10	N	12.3	5	3	3.6	0	Y	
24-Oct-13	506	7	13:31:35	13:36:35	0:05:00	22.3872	113.9061	22.3875	113.9067	NW LANTAU	x10	N	11.6	5	3	3.6	0	Y	
24-Oct-13	507	7	13:36:55	13:41:55	0:05:00	22.3875	113.9067	22.3878	113.9071	NW LANTAU	x10	N	10.5	5	3	3.2	0	Y	
24-Oct-13	508	5	13:52:45	13:57:47	0:05:02	22.3881	113.9089	22.3875	113.9096	NW LANTAU	x10	N	6.8	5	2	2.0	0	Y	
24-Oct-13	509	6	13:58:54	14:03:54	0:05:00	22.3875	113.9099	22.3869	113.9107	NW LANTAU	x10	N	6.8	5	2	1.9	0	Y	
24-Oct-13	510	6	14:10:30	14:15:30	0:05:00	22.3862	113.9114	22.3851	113.9122	NW LANTAU	x10	N	4.9	3	2	2.5	0	Y	
24-Oct-13	511	4	14:45:12	14:50:12	0:05:00	22.3509	113.9105	22.3503	113.9117	NW LANTAU	x10	N	9.8	5	2	2.6	0	Y	
24-Oct-13	512	3	15:07:15	15:12:15	0:05:00	22.3503	113.9111	22.3494	113.9122	NW LANTAU	x10	N	9.9	5	3	4.0	0	Y	
24-Oct-13	514	3	15:28:23	15:31:23	0:03:00	22.3386	113.9171	22.3379	113.9182	NW LANTAU	x10	N	7.3	5	3	2.9	0	N	
24-Oct-13	515	3	13:36:00	13:39:05	0:03:05	22.3377	113.9229	22.3371	113.9238	NW LANTAU	x10	N	8.0	5	3	4.7	0	N	
24-Oct-13	516	1	16:32:49	16:35:49	0:03:00	22.3374	114.0140	22.3373	114.0147	NE LANTAU	x10	N	21.0	5	3	3.6	0	N	
25-Oct-13	517	5	10:10:50	10:13:50	0:03:00	22.3251	113.9800	22.3224	113.9774	NE LANTAU	x20	N	~13	5	3	2.3	0	N	
25-Oct-13	518	6	10:50:00	10:53:00	0:03:00	22.3274	113.9646	22.3275	113.9635	NE LANTAU	x10	N	~11	5	2	1.5	0	N	
25-Oct-13	519	6	11:29:00	11:32:00	0:03:00	22.3366	113.9209	22.3364	113.9205	NW LANTAU	x10	N	~8	5	3	3.5	0	N	
25-Oct-13	520	4	12:30:30	12:35:30	0:05:00	22.3817	113.8862	22.3812	113.8857	NW LANTAU	x10	N	~18	5	3	2.8	0	Y	
25-Oct-13	521	2	12:35:45	12:40:45	0:05:00	22.3812	113.8857	22.3806	113.8853	NW LANTAU	x10	N	~18	5	3	3.8	0	Y	
25-Oct-13	522	5	13:40:12	13:43:12	0:03:00	22.3362	113.9151	22.3357	113.9148	NW LANTAU	x10	N	~7	5	4	2.0	0	N	
25-Oct-13	523	4	14:47:30	14:50:30	0:03:00	22.3051	113.9722	22.3044	113.9720	NE LANTAU	x10	N	~4.5	3	3	4.5	0	N	
25-Oct-13	524	2	15:33:40	15:36:40	0:03:00	22.3238	113.9992	22.3235	113.9989	NE LANTAU	x10	N	~8	5	4	4.4	0	N	
3-Mar-14	2	8	9:31:46	9:36:46	0:05:00	22.3328	114.0130	22.3332	114.0113	NE LANTAU	x10	N	16.6	5	3	4.8	0	N	
3-Mar-14	3	10	10:12:30	10:17:31	0:05:01	22.3215	113.9800	22.3213	113.9791	NE LANTAU	x20	N	12.1	5	3	5.5	0	N	
3-Mar-14	4	17	10:46:14	10:50:12	0:03:58	22.3045	113.9708	22.3045	113.9699	NE LANTAU	x0	N	4.9	3	2	1.4	0	N	at Piling site B1 (100m) (casing)
3-Mar-14	5	13	10:56:08	11:01:08	0:05:00	22.3047	113.9724	22.3049	113.9718	NE LANTAU	x0	N	4.8	3	2	2.7	0	N	at Piling site B1 (300m) (casing)
3-Mar-14	6	12	11:05:36	11:10:36	0:05:00	22.3048	113.9715	22.3046	113.9706	NE LANTAU	x0	N	5.1	3	3	1.9	0	N	at Piling site B1 (200m) (casing)
3-Mar-14	7	11	11:20:55	11:25:55	0:05:00	22.3061	113.9749	22.3060	113.9747	NE LANTAU	x0	N	4.9	3	3	1.4	0	N	at Piling site B1 (500m) (maybe casing); not sure operate or not
3-Mar-14	8	8	12:12:12	12:17:12	0:05:00	22.3070	113.9608	22.3075	113.9594	NE LANTAU	x10	N	5.2	3	4	8.3	0	N	
3-Mar-14	9	8	12:42:20	12:47:20	0:05:00	22.3117	113.9741	22.3186	113.9732	NE LANTAU	x10	N	10.2	5	4	5.7	0	N	
3-Mar-14	10	1	13:14:48	13:19:48	0:05:00	22.3246	113.9815	22.3245	113.9808	NE LANTAU	x10	N	11.8	5	4	9.2	0	N	
3-Mar-14	11	6	14:20:05	14:25:05	0:05:00	22.3502	113.9724	22.3501	113.9728	NE LANTAU	x10	N	14.1	5	5	4.5	0	N	
3-Mar-14	12	5	15:12:18	15:17:18	0:05:00	22.3378	114.0012	22.3379	114.0004	NE LANTAU	x20	N	13.1	5	5	9.5	0	N	
3-Mar-14	13	1	15:50:07	15:55:07	0:05:00	22.3289	114.0017	22.3304	114.0011	NE LANTAU	x10	N	14.3	5	5	8.2	0	N	
3-Mar-14	14	6	16:20:53	16:25:53	0:05:00	22.3375	114.0096	22.3382	114.0086	NE LANTAU	x10	N	15.9	5	5	6.7	0	N	croaking sound heard
4-Mar-14	15	5	9:34:03	9:37:23	0:03:20	22.3379	114.0118	22.3379	113.0115	NE LANTAU	x10	N	20.5	5	2	4	0	N	
4-Mar-14	16	5	10:03:36	10:06:36	0:03:00	22.3229	113.9893	22.3228	113.9883	NE LANTAU	x10	N	13.3	5	2	2.6	0	N	
4-Mar-14	17	10	10:35:35	10:40:35	0:05:00	22.3051	113.9717	22.3048	113.9710	NE LANTAU	x10	N	4.9	3	3	6.1	0	N	
4-Mar-14	18	8	13:03:41	13:08:41	0:05:00	22.3296	113.9591	22.3300	113.9599	NE LANTAU	x10	N	8.8	5	2	3.4	0	N	NE of BCF reclamation site (~1km away)
4-Mar-14	19	12	15:06:18	15:11:18	0:05:00	22.3028	113.9689	22.3027	113.9692	NE LANTAU	x20	N	4.1	3	1	1	0	N	at Piling site B2 (150m) (pre-drilling)
4-Mar-14	20	7	15:17:38	15:20:38	0:03:00	22.3040	113.9709	22.3041	113.9711	NE LANTAU	x10/x0	Y	4.1	3	1	1.2	0	N	at Piling site B2 (100m) (pre-drilling); gain change from 10X to 0X @ 00:10
5-Mar-14	21	6	9:50:14	9:53:14	0:03:00	22.3306	113.9832	22.3301	113.9819	NE LANTAU	x10	N	11.7	5	2	0.9	0	N	
5-Mar-14	22	10	10:54:20	10:58:20	0:04:00	22.3510	113.9549	22.3510	113.9549	NE LANTAU	x10	N	14.8	5	2	1.5	0	N	
5-Mar-14	23	7	11:48:45	11:51:45	0:03:00	22.3023	113.9617	22.3024	113.9615	NE LANTAU	x10	N	4.2	3	1	2.2	0	N	few sampans idling near piling site B1&B2
5-Mar-14	24	8	12:10:35	12:14:35	0:04:00	22.3015	113.9715	22.3016	113.9718	NE LANTAU	x20/x10	Y	5.5	3	1	1.2	0	N	gain change from 20X to 10X @ 02:39
5-Mar-14	25	9	12:31:55	12:35:55	0:04:00	22.3122	113.9757	22.3119	113.9760	NE LANTAU	x20	N	5.6	3	1	0.7	0	N	
5-Mar-14	26	3	13:01:45	13:04:45	0:03:00	22.3211	113.9896	22.3213	113.9901	NE LANTAU	x10	N	13.3	5	1	1	0	N	
5-Mar-14	27	2	13:31:20	13:34:30	0:03:10	22.3330	114.0069	22.3340	114.0069	NE LANTAU	x10	N	16.2	5	3	4.7	0	N	
5-Mar-14	28	0	14:26:44	14:29:44	0:03:00	22.3227	113.9969	22.3233	113.9972	NE LANTAU	x10	N	6.4	5	3	3	0	N	
5-Mar-14	29	7	15:04:50	15:09:50	0:05:00	22.3067	113.9764	22.3066	113.9762	NE LANTAU	x10/x20	Y	4.6	3	2	3.5	0	N	construction noise heard @03:03; gain change from 10X to 20X @ 00:18

Appendix II. (cont'd)

Date	File #	No. Cues	Begin Time	End Time	Duration	Begin LAT	Begin LONG	End LAT	End LONG	Area	Gain	Gain Change?	Water Depth	Hp Depth	BSS	Wind Speed	Prec.	Dolphin Record?	Note(s)
5-Mar-14	30	11	15:32:52	15:37:52	0:05:00	22.3032	113.9717	22.3032	113.9715	NE LANTAU	x20	N	4.5	3	2	2.7	0	N	
7-Mar-14	31	7	10:52:10	10:57:30	0:05:20	22.3044	113.9704	22.3044	113.9704	NE LANTAU	x10	N	4.8	3	3	3.8	0	N	at Piling site B1 (100m) (soil grabbing)
7-Mar-14	32	9	11:11:08	11:16:08	0:05:00	22.3049	113.9709	22.3046	113.9709	NE LANTAU	x10	N	4.8	3	3	1	0	N	at Piling site B1 (150m) (soil grabbing)
7-Mar-14	33	9	11:24:35	11:30:35	0:06:00	22.3050	113.9718	22.3048	113.9719	NE LANTAU	x10	N	4.9	3	3	2.7	0	N	at Piling site B1 (200m) (soil grabbing)
7-Mar-14	34	5	11:44:00	11:49:00	0:05:00	22.3058	113.9724	22.3059	113.9724	NE LANTAU	x10	N	4.9	3	3	3.8	0	N	at Piling site B1 (300m) (soil grabbing)
7-Mar-14	35	7	11:58:05	12:03:45	0:05:40	22.3065	113.9742	22.3066	113.9743	NE LANTAU	x10	N	4.9	3	3	1.5	0	N	piling site B1 is probably not operating
7-Mar-14	36	7	13:49:00	13:52:20	0:03:20	22.3509	113.9688	22.3512	113.9675	NE LANTAU	x10	N	13.6	5	3	4.2	0	N	
7-Mar-14	37	4	14:41:15	14:44:15	0:03:00	22.3344	113.9986	22.3341	113.9980	NE LANTAU	x10	N	10.4	5	3	3.8	0	N	
7-Mar-14	38	10	15:38:00	15:43:10	0:05:10	22.3045	113.9701	22.3044	113.9701	NE LANTAU	x10	N	5.0	3	2	2.1	0	N	at Piling site B1 (50m) (welding)
7-Mar-14	39	11	15:52:10	15:57:10	0:05:00	22.3047	113.9709	22.3046	113.9709	NE LANTAU	x10	N	5.0	3	2	2.3	0	N	at Piling site B1 (100m) (welding)
7-Mar-14	40	11	16:05:30	16:10:30	0:05:00	22.3051	113.9718	22.3050	113.9718	NE LANTAU	x10	N	5.1	3	2	0.5	0	N	at Piling site B1 (200m) (welding)
7-Mar-14	41	7	16:17:00	16:22:10	0:05:10	22.3054	113.9726	22.3055	113.9726	NE LANTAU	x10	N	4.7	3	2	2.6	0	N	at Piling site B1 (300m) (welding)
7-Mar-14	43	9	16:30:45	16:35:45	0:05:00	22.3070	113.9736	22.3070	113.9734	NE LANTAU	x10	N	4.7	3	3	1.9	0	N	at Piling site B1 (500m) (welding)
7-Mar-14	44	9	16:40:30	16:45:30	0:05:00	22.3071	113.9734	22.3069	113.9735	NE LANTAU	x10	N	4.6	3	3	7	0	N	at Piling site B1 (500m) (welding), hammering sound @ 02:45
10-Mar-14	45	9	10:28:39	10:34:09	0:05:30	22.3044	113.9702	22.3045	113.9702	NE LANTAU	x20	N	4.3	3	2	3.3	0	N	at Piling site B1 (70m) (soil grabbing)
10-Mar-14	46	8	10:41:50	10:46:50	0:05:00	22.3045	113.9707	22.3045	113.9707	NE LANTAU	x10	N	4.4	3	2	3	0	N	at Piling site B1 (100m) (soil grabbing)
10-Mar-14	47	7	10:53:00	10:58:00	0:05:00	22.3053	113.9713	22.3053	113.9713	NE LANTAU	x20	N	4.4	3	3	4.3	0	N	at Piling site B1 (200m) (soil grabbing)
10-Mar-14	48	8	11:11:13	11:18:13	0:07:00	22.3061	113.9719	22.3061	113.9719	NE LANTAU	x20	N	4.5	3	2	5.2	0	N	at Piling site B1 (300m) (soil grabbing)
10-Mar-14	49	10	11:26:04	11:31:04	0:05:00	22.3066	113.9735	22.3068	113.9735	NE LANTAU	x20	N	4.3	3	2	4	0	N	at Piling site B1 (500m) (soil grabbing)
10-Mar-14	50	11	11:32:35	11:37:34	0:04:59	22.3068	113.9735	22.3068	113.9735	NE LANTAU	x20	N	4.3	3	2	4.5	0	N	at Piling site B1 (500m) (soil grabbing)
10-Mar-14	52	8	12:34:13	12:38:15	0:04:02	22.3283	113.9619	22.3286	113.9605	NE LANTAU	x10	N	9.6	5	2	3.7	0	N	388m from silt curtain of BCF
10-Mar-14	53	6	13:33:33	13:38:35	0:05:02	22.3483	113.9869	22.3485	113.9852	NE LANTAU	x10	Y	22.6	7	3	3.4	0	N	gain change from 10X to 0X @ 03:20
10-Mar-14	54	0	14:32:05	14:35:04	0:02:59	22.3220	113.9975	22.3223	113.9967	NE LANTAU	x10	N	9.8	5	2	2.8	0	N	
10-Mar-14	55	14	15:06:34	15:11:34	0:05:00	22.3046	113.9702	22.3047	113.9703	NE LANTAU	x10	N	4.7	3	2	3.1	0	N	at Piling site B1 (70m) (soil grabbing)
10-Mar-14	56	11	15:16:20	15:21:19	0:04:59	22.3046	113.9709	22.3048	113.9709	NE LANTAU	x20	Y	4.2	3	2	3.3	0	N	at Piling site B1 (100m) (soil grabbing), gain change from 20X to 10X @ 01:47
10-Mar-14	57	13	15:25:40	15:31:10	0:05:30	22.3050	113.9716	22.3052	113.9716	NE LANTAU	x10	N	4.8	3	2	2.1	0	N	at Piling site B1 (200m) (soil grabbing)
10-Mar-14	58	11	16:01:40	16:06:40	0:05:00	22.3055	113.9724	22.3056	113.9723	NE LANTAU	x10	N	4.8	3	2	1.6	0	N	at Piling site B1 (300m) (soil grabbing)
10-Mar-14	59	9	16:11:53	16:16:53	0:05:00	22.3065	113.9738	22.3068	113.9738	NE LANTAU	x10	N	4.7	3	2	2.4	0	N	at Piling site B1 (500m) (soil grabbing)
11-Mar-14	60	3	9:04:30	9:07:30	0:03:00	22.3335	113.9851	22.3336	113.9845	NE LANTAU	x10	N	8.5	5	3	3.3	0	N	
11-Mar-14	61	6	10:02:10	10:05:10	0:03:00	22.3402	113.9563	22.3404	113.9557	NE LANTAU	x10	N	11.9	5	4	4.8	0	N	
11-Mar-14	62	3	11:06:15	11:09:15	0:03:00	22.3075	113.9606	22.3076	113.9601	NE LANTAU	x0	N	4.2	3	3	5.1	0	N	at Construction platform near construction platform E9
11-Mar-14	63	9	11:15:04	11:20:04	0:05:00	22.3046	113.9620	22.3048	113.9612	NE LANTAU	x0	N	4.1	3	3	5.5	0	N	at Construction platform near construction platform E9
11-Mar-14	64	4	11:32:35	11:37:35	0:05:00	22.3037	113.9661	22.3037	113.9654	NE LANTAU	x0	N	4.1	3	3	4.2	0	N	
11-Mar-14	65	9	12:01:44	12:04:44	0:03:00	22.3066	113.9759	22.3065	113.9756	NE LANTAU	x20	N	4.6	3	3	4.1	0	N	
11-Mar-14	66	0	12:34:25	12:37:25	0:03:00	22.3222	113.9985	22.3221	113.9975	NE LANTAU	x10	N	12.3	5	4	8.4	0	N	snapping shrimp
11-Mar-14	67	8	13:19:25	13:22:25	0:03:00	22.3451	113.9981	22.3454	113.9979	NE LANTAU	x10	N	34.8	5	3	4.7	0	N	
11-Mar-14	68	7	14:29:40	14:34:40	0:05:00	22.3084	113.9704	22.3082	113.9701	NE LANTAU	x0	N	4.9	3	3	2.3	0	N	at Construction platform near construction platform E9 (800m)
11-Mar-14	69	11	14:39:18	14:44:18	0:05:00	22.3084	113.9674	22.3083	113.9671	NE LANTAU	x0	N	5.3	3	3	2.2	0	N	at Construction platform near construction platform E9 (500m)
11-Mar-14	70	12	14:48:22	14:53:22	0:05:00	22.3084	113.9660	22.3078	113.9656	NE LANTAU	x0	N	4.8	3	3	2.6	0	N	at Construction platform near construction platform E9 (400m)
11-Mar-14	71	10	15:24:33	15:28:33	0:04:00	22.3048	113.9574	22.3055	113.9565	NE LANTAU	x0	N	5.0	3	3	6.5	0	N	
12-Mar-14	72	12	9:43:20	9:48:20	0:05:00	22.3047	113.9709	22.3049	113.9702	NE LANTAU	x10	N	4.3	3	2	3.3	0	N	
12-Mar-14	73	7	10:10:10	10:14:10	0:04:00	22.3075	113.9787	22.3078	113.9788	NE LANTAU	x20	Y	5.5	3	2	2	0	N	gain change from 20X to 10X @ 02:30
12-Mar-14	74	6	10:41:46	10:45:46	0:04:00	22.3227	113.9995	22.3233	113.9989	NE LANTAU	x20	N	12.6	5	2	4.8	0	N	
12-Mar-14	75	3	11:41:34	11:46:34	0:05:00	22.3395	113.9941	22.3394	113.9943	NE LANTAU	x20	N	12.9	5	2	0.9	0	Y	
12-Mar-14	76	3	11:47:18	11:53:48	0:06:30	22.3393	113.9943	22.3391	113.9947	NE LANTAU	x20	N	12.9	5	2	0.6	0	Y	
12-Mar-14	77	0	12:01:21	12:06:21	0:05:00	22.3363	113.9950	22.3362	113.9952	NE LANTAU	x20	N	8.9	5	2	0.5	0	Y	
12-Mar-14	78	0	12:06:38	12:11:38	0:05:00	22.3362	113.9952	22.3364	113.9954	NE LANTAU	x20	N	8.9	5	2	0.4	0	Y	
12-Mar-14	79	4	12:23:27	12:28:27	0:05:00	22.3356	114.0002	22.3359	114.0001	NE LANTAU	x20	N	10.4	5	3	3.7	0	Y	
12-Mar-14	80	0	12:29:05	12:34:05	0:05:00	22.3360	114.0000	22.3365	113.9996	NE LANTAU	x20	N	10.4	5	3	3.6	0	Y	
12-Mar-14	81	0	12:41:38	12:46:38	0:05:00	22.3348	113.9991	22.3359	113.9991	NE LANTAU	x20	N	9.6	5	3	4	0	Y	
12-Mar-14	82	10	15:12:25	15:17:45	0:05:20	22.3046	113.9703	22.3046	113.9703	NE LANTAU	x10	N	4.3	3	2	3	0	N	at Piling site B1 (80m) (soil grabbing)
12-Mar-14	83	14	15:23:08	15:28:10	0:05:02	22.3050	113.9707	22.3051	113.9709	NE LANTAU	x10	N	4.3	3	2	4.3	0	N	at Piling site B1 (100m) (soil grabbing)
12-Mar-14	84	12	15:33:30	15:38:30	0:05:00	22.3056	113.9714	22.3059	113.9716	NE LANTAU	x10	N	4.6	3	3	6.7	0	N	at Piling site B1 (200m) (soil grabbing)
12-Mar-14	85	13	15:48:22	15:53:22	0:05:00	22.3066	113.9723	22.3066	113.9723	NE LANTAU	x10	N	4.2	3	2	6.4	0	N	at Piling site B1 (300m) (soil grabbing)
12-Mar-14	86	11	15:58:07	16:03:07	0:05:00	22.3072	113.9734	22.3075	113.9735	NE LANTAU	x20	N	4.4	3	3	6.1	0	N	at Piling site B1 (500m) (soil grabbing)
13-Mar-14	87	8	8:47:40	8:50:40	0:03:00	22.3401	113.9975	22.3402	113.9974	NE LANTAU	x10	N	16.2	5	2	0.8	0	N	snapping shrimp
13-Mar-14	88	2	9:51:45	9:54:45	0:03:00	22.3346	113.9681	22.3338	113.9682	NE LANTAU	x10	N	8.2	5	3	4.4	0	N	
13-Mar-14	89	13	11:02:29	11:07:29	0:05:00	22.3004	113.9611	22.3002	113.9613	NE LANTAU	x30	N	3.5	3	1	1.9	0	N	
13-Mar-14	90	10	11:23:24	11:28:29	0:05:05	22.3035	113.9657	22.3031	113.9658	NE LANTAU	x10	N	3.9	3	1	0.2	0	N	snapping shrimp
13-Mar-14	92	13	11:44:35	11:49:40	0:05:05	22.3156	113.9710	22.3144	113.9719	NE LANTAU	x10	N	12.3	5	2	2.9	0	N	
13-Mar-14	93	9	12:00:37	12:05:37	0:05:00	22.3052	113.9762	22.3047	113.9761	NE LANTAU	x10	N	4.6	3	2	3.1	0	N	snapping shrimp
13-Mar-14	94	5	13:04:34	13:07:44	0:03:10	22.3367	113.9853	22.3366	113.9853	NE LANTAU	x10	N	4.3	3	2	3.1	0	N	snapping shrimp
13-Mar-14	95	2	13:51:15	13:54:15	0:03:00	22.3356	113.9674	22.3352	113.9681	NE LANTAU	x10	N	8.7	5	2	0.5	0	N	

Appendix II. (cont'd)

Date	File #	No. Cues	Begin Time	End Time	Duration	Begin LAT	Begin LONG	End LAT	End LONG	Area	Gain	Gain Change?	Water Depth	Hp Depth	BSS	Wind Speed	Prec.	Dolphin Record?	Note(s)
13-Mar-14	96	12	14:57:56	15:02:56	0:05:00	22.2789	113.8637	22.2789	113.8637	NE LANTAU	x0	N	8.3	5	3	2.4	0	N	
13-Mar-14	97	14	15:08:18	15:13:18	0:05:00	22.2782	113.8705	22.2772	113.8708	NE LANTAU	x10	N	6.8	5	4	5.4	0	N	
17-Mar-14	98	9	11:30:10	11:35:10	0:05:00	22.3407	113.9684	22.3409	113.9702	NE LANTAU	x0	N	12.3	5	1	0.4	0	N	
17-Mar-14	99	8	12:11:15	12:16:18	0:05:03	22.3396	113.9425	22.3393	113.9439	NE LANTAU	x10	N	14.3	5	1	0.5	0	Y	
17-Mar-14	100	4	12:22:01	12:27:01	0:05:00	22.3385	113.9425	22.3382	113.9437	NE LANTAU	x10	N	18.9	5	1	0.4	0	Y	
17-Mar-14	101	11	12:27:15	12:32:15	0:05:00	22.3382	113.9437	22.3378	113.9453	NE LANTAU	x10	N	18.9	5	1	0.5	0	Y	
17-Mar-14	102	6	12:40:35	12:45:40	0:05:05	22.3401	113.9441	22.3399	113.9455	NE LANTAU	x0	N	14.6	5	1	0.8	0	Y	
17-Mar-14	103	5	12:52:06	12:57:06	0:05:00	22.3409	113.9451	22.3409	113.9451	NE LANTAU	x10	N	25.3	5	1	1.2	0	Y	
17-Mar-14	104	3	13:06:38	13:12:38	0:06:00	22.3387	113.9414	22.3385	113.9429	NE LANTAU	x10	N	10.1	5	1	0.6	0	Y	
17-Mar-14	105	5	13:22:00	13:27:00	0:05:00	22.3364	113.9430	22.3361	113.9442	NE LANTAU	x10	N	8.6	5	2	1.2	0	Y	
17-Mar-14	106	5	13:39:57	13:44:57	0:05:00	22.3372	113.9421	22.3367	113.9437	NE LANTAU	x10	N	9.0	5	2	1.3	0	Y	
17-Mar-14	107	2	13:55:20	14:00:20	0:05:00	22.3336	113.9483	22.3333	113.9500	NE LANTAU	x10	N	8.1	5	2	1.8	0	Y	
17-Mar-14	108	2	14:10:17	14:15:17	0:05:00	22.3361	113.9448	22.3352	113.9459	NE LANTAU	x10	N	13.4	5	2	1.5	0	Y	
17-Mar-14	109	7	15:15:15	15:20:15	0:05:00	22.3021	113.9692	22.3023	113.9693	NE LANTAU	x10	N	3.4	3	1	1.3	0	N	
17-Mar-14	110	12	15:41:46	15:46:46	0:05:00	22.3072	113.9753	22.3075	113.9752	NE LANTAU	x20	N	4.0	3	1	2	0	N	
17-Mar-14	111	2	16:34:20	16:37:20	0:03:00	22.3330	114.0074	22.3328	114.0074	NE LANTAU	x20	N	15.2	5	1	1	0	N	
17-Mar-14	112	6	16:57:27	17:00:27	0:03:00	22.3494	114.0124	22.3493	114.0126	NE LANTAU	x0	N	21.3	5	2	2.2	0	N	
18-Mar-14	113	7	9:49:20	9:52:21	0:03:01	22.3453	113.9851	22.3451	113.9842	NE LANTAU	x0	N	30.2	5	1	1	0	N	
18-Mar-14	114	9	10:47:51	10:51:21	0:03:30	22.3284	113.9621	22.3285	113.9620	NE LANTAU	x10	N	9.9	5	1	1.9	0	N	
18-Mar-14	115	9	11:47:15	11:50:15	0:03:00	22.3014	113.9550	22.3017	113.9551	NE LANTAU	x10	N	3.9	3	2	3.3	0	N	
18-Mar-14	116	6	12:09:45	12:13:45	0:04:00	22.3082	113.9654	22.3089	113.9648	NE LANTAU	x10	N	11.9	5	2	3.4	0	N	croaking sound heard
18-Mar-14	117	10	12:27:40	12:32:40	0:05:00	22.3049	113.9717	22.3054	113.9714	NE LANTAU	x20	N	4.5	3	2	2.5	0	N	
18-Mar-14	118	3	13:12:20	13:15:20	0:03:00	22.3236	113.9992	22.3245	113.9995	NE LANTAU	x10	N	12.9	5	2	2.1	0	N	
18-Mar-14	119	6	14:12:35	14:15:35	0:03:00	22.3448	113.9888	22.3452	113.9899	NE LANTAU	x10	N	31.0	5	3	4.1	0	N	
19-Mar-14	123	13	9:22:34	9:27:34	0:05:00	22.3074	113.9597	22.3077	113.9586	NE LANTAU	x0	N	5.5	3	2	2	0	N	182m from silt curtain of BCF
19-Mar-14	124	10	9:43:42	9:48:42	0:05:00	22.3053	113.9714	22.3057	113.9713	NE LANTAU	x10	N	4.8	3	2	1.5	0	N	
19-Mar-14	125	3	10:09:34	10:12:34	0:03:00	22.3083	113.9795	22.3085	113.9794	NE LANTAU	x10	N	6.7	5	2	1	0	N	
19-Mar-14	126	10	11:22:35	11:27:35	0:05:00	22.3388	114.0028	22.3392	114.0026	NE LANTAU	x10	N	17.1	5	2	1.8	0	N	
19-Mar-14	127	9	12:37:31	12:42:01	0:04:30	22.3265	113.9670	22.3258	113.9695	NE LANTAU	x10	N	7.2	5	2	1.6	0	N	515m from silt curtain of BCF
19-Mar-14	128	10	13:49:15	13:54:15	0:05:00	22.3036	113.9724	22.3036	113.9729	NE LANTAU	x20	N	4.1	3	1	1.1	0	N	
19-Mar-14	129	4	14:43:53	14:47:03	0:03:10	22.3093	113.9798	22.3091	113.9801	NE LANTAU	x20	N	6.8	3	1	1.5	0	N	
19-Mar-14	130	5	15:46:15	15:50:15	0:04:00	22.3486	114.0121	22.3482	114.0142	NE LANTAU	x10	N	23.7	5	2	2.4	0	N	
20-Mar-14	131	13	13:54:22	13:59:22	0:05:00	22.3042	113.9718	22.3042	114.9723	NE LANTAU	x10	N	4.6	3	1	0.8	0	N	
20-Mar-14	132	11	14:11:40	14:16:40	0:05:00	22.3067	113.9657	22.3067	113.9664	NE LANTAU	x10	N	4.6	3	2	2.6	0	N	croaking sound heard
20-Mar-14	133	13	14:27:20	14:32:20	0:05:00	22.3049	113.9609	22.3050	113.9618	NE LANTAU	x20/x10/x0	Y	3.8	3	2	2.7	0	N	gain change from 20X to 10X @ 01:20, from 10X to 0X @ 02:15
20-Mar-14	134	7	14:49:50	14:54:50	0:05:00	22.3101	113.9620	22.3104	113.9628	NE LANTAU	x0	N	6.6	5	1	1.4	0	N	croaking sound heard; 193m from silt curtain of BCF
20-Mar-14	135	11	16:05:20	16:10:20	0:05:00	22.3044	113.9709	22.3041	113.9712	NE LANTAU	x10	N	4.3	3	1	1.2	0	N	at Piling site B2 (100m) (soil grabbing)
20-Mar-14	136	14	16:14:33	16:19:33	0:05:00	22.3049	113.9718	22.3049	113.9719	NE LANTAU	x10	N	3.9	3	1	1.4	0	N	at Piling site B2 (200m) (soil grabbing)
20-Mar-14	137	14	17:07:00	17:12:00	0:05:00	22.3058	113.9726	22.3059	113.9728	NE LANTAU	x20	N	3.6	3	1	1.6	0	N	at Piling site B2 (300m) (soil grabbing)
20-Mar-14	138	12	17:17:30	17:22:30	0:05:00	22.3064	113.9742	22.3063	113.9745	NE LANTAU	x10	N	3.7	3	1	2.1	0	N	at Piling site B2 (500m) (soil grabbing)
20-Mar-14	139	8	17:28:00	17:33:00	0:05:00	22.3081	113.9767	22.3080	113.9770	NE LANTAU	x20	N	3.7	3	1	0.9	0	N	at Piling site B2 (850m) (soil grabbing)
20-Mar-14	140	13	17:41:14	17:46:14	0:05:00	22.3089	113.9702	22.3088	113.9703	NE LANTAU	x10	N	3.8	3	1	1.4	0	N	at Construction platform near construction boat M012 (1000m)
20-Mar-14	141	13	17:50:48	17:55:48	0:05:00	22.3087	113.9681	22.3087	113.9687	NE LANTAU	x0	N	3.7	3	1	2.6	0	N	at Construction platform near construction boat M012 (750m)
20-Mar-14	142	13	18:00:30	18:05:30	0:05:00	22.3086	113.9669	22.3087	113.9675	NE LANTAU	x0	N	3.6	3	2	2.9	0	N	at Construction platform near construction boat M012 (500m)
20-Mar-14	143	11	18:10:30	18:14:26	0:03:56	22.3087	113.9654	22.3090	113.9660	NE LANTAU	x0	N	10.6	5	2	3.4	0	N	at Construction platform near construction boat M012 (350m)
20-Mar-14	145	7	20:37:25	20:40:25	0:03:00	22.3053	113.9711	22.3054	113.9710	NE LANTAU	x20	N	3.7	3	3	3	0	N	
20-Mar-14	146	5	21:04:40	21:07:40	0:03:00	22.3055	113.9710	22.3054	113.9710	NE LANTAU	x20	N	4.1	3	3	1.3	0	N	croaking sound heard
20-Mar-14	147	5	21:36:03	21:40:03	0:04:00	22.3053	113.9711	22.3053	113.9711	NE LANTAU	x20/x10	Y	4.2	3	3	5.6	0	N	gain change from 20X to 10X @ 00:36; croaking sound heard
20-Mar-14	148	5	22:06:00	22:09:00	0:03:00	22.3054	113.9710	22.3054	113.9710	NE LANTAU	x10	N	4.2	3	3	3.7	0	N	
20-Mar-14	149	5	22:29:30	22:32:30	0:03:00	22.3054	113.9711	22.3054	113.9710	NE LANTAU	x10	N	4.5	3	3	5	0	N	
20-Mar-14	150	5	23:05:15	23:08:15	0:03:00	22.3053	113.9711	22.3053	113.9711	NE LANTAU	x10	N	4.4	3	3	4.7	0	N	
20-Mar-14	151	5	23:30:00	23:33:00	0:03:00	22.3053	113.9710	22.3054	113.9710	NE LANTAU	x10	N	4.6	3	3	3.4	0	N	1 tug boat and 1 construction boat passed by
21-Mar-14	152	5	0:09:40	0:12:40	0:03:00	22.3053	113.9711	22.3053	113.9711	NE LANTAU	x20	N	4.4	3	3	2.7	0	N	
21-Mar-14	153	5	1:03:26	1:06:56	0:03:30	22.3053	113.9711	22.3053	113.9711	NE LANTAU	x10	N	4.9	3	3	5.6	0	N	
21-Mar-14	154	5	2:01:05	2:04:10	0:03:05	22.3052	113.9711	22.3052	113.9712	NE LANTAU	x10	N	4.5	3	3	3.5	0	N	
21-Mar-14	155	5	3:02:25	3:05:25	0:03:00	22.3053	113.9711	22.3053	113.9711	NE LANTAU	x10	N	4.5	3	3	3.5	0	N	
21-Mar-14	156	5	3:58:46	4:01:47	0:03:01	22.3052	113.9712	22.3052	113.9712	NE LANTAU	x20	N	4.3	3	3	3.6	0	N	
21-Mar-14	157	5	5:05:42	5:08:42	0:03:00	22.3052	113.9712	22.3053	113.9711	NE LANTAU	x10	N	4.1	3	3	2.6	0	N	
21-Mar-14	158	5	6:01:35	6:04:35	0:03:00	22.3053	113.9711	22.3052	113.9712	NE LANTAU	x10	N	4.1	3	3	3	0	N	
21-Mar-14	159	10	7:01:08	7:04:08	0:03:00	22.3053	113.9711	22.3053	113.9711	NE LANTAU	x10	N	4.0	3	3	3.4	0	N	
21-Mar-14	160	6	8:30:46	8:33:46	0:03:00	22.3051	113.9715	22.3045	113.9711	NE LANTAU	x10	N	4.5	3	3	3.8	0	N	
21-Mar-14	161	12	10:43:11	10:48:11	0:05:00	22.3043	113.9704	22.3043	113.9704	NE LANTAU	x0	N	4.8	3	2	1	0	N	at Piling site B2 (80m) (soil grabbing before bore piling)
21-Mar-14	162	13	10:54:08	10:59:38	0:05:30	22.3046	113.9705	22.3045	113.9704	NE LANTAU	x0	N	5.1	3	2	1.8	0	N	at Piling site B2 (100m) (soil grabbing before bore piling)

Appendix II. (cont'd)

Date	File #	No. Cues	Begin Time	End Time	Duration	Begin LAT	Begin LONG	End LAT	End LONG	Area	Gain	Gain Change?	Water Depth	Hp Depth	BSS	Wind Speed	Prec.	Dolphin Record?	Note(s)
21-Mar-14	163	12	11:05:10	11:10:12	0:05:02	22.3051	113.9713	22.3051	113.9714	NE LANTAU	x10	N	5.2	3	2	4.3	0	N	at Piling site B2 (200m) (soil grabbing before bore piling)
21-Mar-14	164	13	11:16:35	11:21:35	0:05:00	22.3057	113.9724	22.3057	113.9723	NE LANTAU	x10	N	5.3	3	2	1.5	0	N	at Piling site B2 (300m) (soil grabbing before bore piling)
21-Mar-14	165	10	11:27:05	11:32:05	0:05:00	22.3062	113.9743	22.3062	113.9744	NE LANTAU	x10	N	5.1	3	2	2.3	0	N	at Piling site B2 (500m) (soil grabbing before bore piling)
21-Mar-14	166	13	14:13:52	14:18:52	0:05:00	22.3044	113.9705	22.3044	113.9706	NE LANTAU	x0	N	5.2	3	2	1.2	0	N	at Piling site B1 (90m) (soil grabbing)
21-Mar-14	167	13	14:24:06	14:29:06	0:05:00	22.3052	113.9713	22.3052	113.9715	NE LANTAU	x0	N	5.2	3	2	2.9	0	N	at Piling site B1 (200m) (soil grabbing)
21-Mar-14	168	11	14:34:40	14:39:40	0:05:00	22.3060	113.9721	22.3059	113.9723	NE LANTAU	x20	N	5.2	3	2	2.5	0	N	at Piling site B1 (300m) (soil grabbing)
21-Mar-14	169	13	14:45:15	14:50:15	0:05:00	22.3073	113.9734	22.3072	113.9734	NE LANTAU	x10	N	5.0	3	2	2.6	0	N	at Piling site B1 (500m) (soil grabbing)
24-Mar-14	170	12	9:42:50	9:47:50	0:05:00	22.3051	113.9709	22.3051	113.9701	NE LANTAU	x10	N	4.4	3	2	1.1	0	N	
24-Mar-14	171	9	10:07:10	10:10:10	0:03:00	22.3083	113.9789	22.3082	113.9782	NE LANTAU	x10	N	5.9	3	2	2.9	0	N	
24-Mar-14	172	8	11:13:00	11:16:05	0:03:05	22.3041	113.9709	22.3043	113.9709	NE LANTAU	x10	N	4.4	3	3	3.2	0	N	at Piling site B2 (100m) (casing)
24-Mar-14	173	7	11:21:22	11:24:22	0:03:00	22.3049	113.9717	22.3049	113.9717	NE LANTAU	x10	N	4.6	3	3	5.1	0	N	at Piling site B2 (200m) (casing)
24-Mar-14	174	7	11:29:10	11:32:10	0:03:00	22.3053	113.9724	22.3053	113.9724	NE LANTAU	x10	N	4.8	3	3	4.5	0	N	at Piling site B2 (300m) (casing)
24-Mar-14	175	1	14:04:10	14:05:40	0:01:30	22.3044	113.9712	22.3042	113.9713	NE LANTAU	x10	N	5.0	3	2	0.5	0	N	
25-Mar-14	176	10	10:54:10	10:59:10	0:05:00	22.3149	113.9703	22.3139	113.9706	NE LANTAU	x20	N	12.7	5	1	1.1	0	N	
25-Mar-14	177	8	11:08:52	11:11:51	0:02:59	22.3027	113.9719	22.3026	113.9720	NE LANTAU	x10	N	4.1	3	1	1.3	0	N	
25-Mar-14	178	8	11:34:45	11:37:45	0:03:00	22.3016	113.9541	22.3017	113.9543	NE LANTAU	x10	N	4.7	3	1	1.3	0	N	
25-Mar-14	179	4	13:20:23	13:23:53	0:03:30	22.3422	113.9861	22.3424	113.9860	NE LANTAU	x10	N	25.1	5	2	2.3	0	N	
25-Mar-14	180	2	14:06:05	14:09:05	0:03:00	22.3439	114.0122	22.3438	114.0121	NE LANTAU	x10	N	29.1	5	2	1.8	0	N	
25-Mar-14	181	7	15:13:45	15:16:45	0:03:00	22.3120	113.9706	22.3117	113.9709	NE LANTAU	x10	N	5.7	3	2	1.3	0	N	croaking sound heard
25-Mar-14	182	5	15:25:30	15:29:30	0:04:00	22.3029	113.9724	22.3030	113.9725	NE LANTAU	x10	N	4.7	3	1	1.1	0	N	
25-Mar-14	183	13	15:35:05	15:40:05	0:05:00	22.3020	113.9688	22.3019	113.9685	NE LANTAU	x10	N	4.8	3	1	1.7	0	N	
25-Mar-14	184	11	15:47:20	15:51:50	0:04:30	22.3071	113.9661	22.3070	113.9661	NE LANTAU	x10	N	5.0	3	1	1	0	N	
26-Mar-14	185	8	9:34:50	9:39:58	0:05:08	22.3046	113.9712	22.3044	113.9714	NE LANTAU	x10/x0	Y	4.2	3	1	0.8	0	N	gain change from 10X to 0X @ 04:18, piling platform B3 started piling @03:40
26-Mar-14	186	12	9:57:12	10:00:12	0:03:00	22.3070	113.9745	22.3070	113.9754	NE LANTAU	x10	N	4.0	3	1	0.6	0	N	at Piling site B2 (600m) (casing)
26-Mar-14	187	5	10:04:28	10:07:28	0:03:00	22.3055	113.9722	22.3054	113.9721	NE LANTAU	x0	N	4.1	3	1	1.2	0	N	at Piling site B2 (300m) (casing); probably the case reached the seabed
26-Mar-14	188	10	10:13:13	10:16:13	0:03:00	22.3047	113.9715	22.3045	113.9717	NE LANTAU	x0	N	4.1	3	1	1.4	0	N	at Piling site B2 (200m) (casing)
26-Mar-14	189	9	10:19:20	10:22:20	0:03:00	22.3044	113.9709	22.3044	113.9709	NE LANTAU	x0	N	4.1	3	1	0.9	0	N	at Piling site B2 (100m) (casing)
26-Mar-14	190	7	10:26:35	10:29:35	0:03:00	22.3050	113.9718	22.3049	113.9720	NE LANTAU	x0	N	4.2	3	1	1.1	0	N	at Piling site B2 (200m) (casing)
26-Mar-14	191	8	12:18:05	12:21:05	0:03:00	22.3459	114.0058	22.3457	114.0066	NE LANTAU	x10	N	11.5	5	2	3.5	0	N	
26-Mar-14	192	1	13:14:06	13:17:06	0:03:00	22.3402	113.9767	22.3404	113.9774	NE LANTAU	x10	N	8.3	5	2	3	0	N	
26-Mar-14	193	3	14:46:10	14:49:10	0:03:00	22.3217	113.9914	22.3214	113.9916	NE LANTAU	x20	N	12.8	5	1	1.6	0	N	croaking sound heard
26-Mar-14	194	10	15:19:55	15:23:20	0:03:25	22.3136	113.9743	22.3137	113.9742	NE LANTAU	x20	N	11.3	5	1	0.9	0	N	croaking sound heard
26-Mar-14	195	9	15:38:06	15:42:06	0:04:00	22.3047	113.9717	22.3046	113.9711	NE LANTAU	x10	N	4.7	3	1	1.5	0	N	croaking sound heard
26-Mar-14	196	4	16:00:20	16:03:20	0:03:00	22.3053	113.9602	22.3047	113.9597	NE LANTAU	x10	N	4.6	3	1	1	0	N	croaking sound heard
27-Mar-14	197	13	9:43:36	9:48:36	0:05:00	22.3050	113.9713	22.3048	113.9718	NE LANTAU	x10	N	4.4	3	1	1.1	0	N	
27-Mar-14	198	4	10:08:45	10:11:45	0:03:00	22.3109	113.9814	22.3111	113.9815	NE LANTAU	x10	N	7.6	5	1	0.6	0	N	
27-Mar-14	199	12	12:58:35	13:04:05	0:05:30	22.3504	113.9518	22.3498	113.9533	NE LANTAU	x0	N	14.5	5	1	1.4	0	N	the spar buoy collide with the bottom of our boat near the end of recording
27-Mar-14	200	1	14:48:10	14:51:10	0:03:00	22.3349	113.9921	22.3351	113.9906	NE LANTAU	x10	N	7.2	5	1	0.6	0	N	croaking sound heard
27-Mar-14	201	5	16:28:20	16:31:20	0:03:00	22.3084	113.9718	22.3090	113.9709	NE LANTAU	x10	N	5.0	3	3	5	0	N	croaking sound heard
28-Mar-14	202	4	10:15:51	10:18:51	0:03:00	22.3374	114.0077	22.3386	114.0077	NE LANTAU	X20	N	15.4	5	3	4.1	0	N	
28-Mar-14	203	9	11:28:40	11:32:40	0:04:00	22.3252	113.9761	22.3251	113.9767	NE LANTAU	X10	N	10.7	5	3	3.6	0	N	
28-Mar-14	204	8	12:35:32	12:39:32	0:04:00	22.3481	113.9484	22.3478	113.9493	NE LANTAU	X10	N	22.0	5	3	4	0	N	
28-Mar-14	205	5	13:50:20	13:53:20	0:03:00	22.3282	113.9998	22.3286	113.9998	NE LANTAU	X10	N	14.7	5	3	2.6	0	N	
28-Mar-14	206	6	14:22:42	14:25:42	0:03:00	22.3058	113.9744	22.3057	113.9744	NE LANTAU	X20	N	3.8	3	3	1.7	0	N	at Piling site B1 (500m) (RCD); pile isn't rotated.
28-Mar-14	207	6	14:33:15	14:36:15	0:03:00	22.3050	113.9726	22.3051	113.9726	NE LANTAU	X20	N	3.7	3	2	0.6	0	N	at Piling site B1 (300m) (RCD); pile isn't rotated.
28-Mar-14	208	8	14:51:26	14:54:26	0:03:00	22.3045	113.9715	22.3048	113.9715	NE LANTAU	X20	N	3.8	3	2	1.5	0	N	at Piling site B1 (200m) (RCD); pile isn't rotated.
28-Mar-14	209	7	14:59:17	15:02:27	0:03:10	22.3047	113.9715	22.3047	113.9715	NE LANTAU	X10	N	3.8	3	2	2	0	N	at Piling site B2 (200m) (casing)
1-Apr-14	210	13	10:05:00	10:10:00	0:05:00	22.3049	113.9713	22.3049	113.9713	NE LANTAU	x10	N	5.1	3	1	2.4	0	N	at Piling site B1 (200m) (RCD)
1-Apr-14	211	10	10:18:21	10:23:21	0:05:00	22.3050	113.9729	22.3053	113.9730	NE LANTAU	x20/x10	Y	4.8	3	1	1.7	0	N	at Piling site B1 (300m) (RCD); gain change from 20X to 10X @ 00:20
1-Apr-14	212	11	10:29:40	10:34:40	0:05:00	22.3059	113.9744	22.3062	113.9747	NE LANTAU	x10	N	4.9	3	1	1.8	0	N	at Piling site B1 (500m) (RCD)
1-Apr-14	213	10	14:07:37	14:11:37	0:04:00	22.3046	113.9726	22.3046	113.9728	NE LANTAU	x10	N	4.1	3	1	1	0	N	
2-Apr-14	214	12	15:09:11	15:13:11	0:04:00	22.3050	113.9716	22.3052	113.9716	NE LANTAU	x10	N	4.4	3	2	0.9	0	N	at Piling site B1 (200m) (RCD)
2-Apr-14	215	11	15:16:50	15:20:50	0:04:00	22.3060	113.9722	22.3062	113.9723	NE LANTAU	x10	N	4.2	3	2	1.3	0	N	at Piling site B1 (300m) (RCD)
2-Apr-14	216	10	15:24:26	15:29:26	0:05:00	22.3067	113.9738	22.3066	113.9736	NE LANTAU	x10	N	3.9	3	2	3.4	0	N	at Piling site B1 (500m) (RCD)
2-Apr-14	217	10	15:40:30	15:44:30	0:04:00	22.3048	113.9717	22.3049	113.9716	NE LANTAU	x10	N	3.9	3	2	2.3	0	N	at Piling site B1 (200m) (RCD)
2-Apr-14	218	12	15:48:02	15:52:02	0:04:00	22.3060	113.9718	22.3062	113.9717	NE LANTAU	x10	N	4.0	3	2	2.1	0	N	at Piling site B1 (300m) (RCD)
2-Apr-14	219	15	15:56:10	16:01:10	0:05:00	22.3076	113.9729	22.3078	113.9729	NE LANTAU	x10	N	3.7	3	2	1.9	0	N	at Piling site B1 (500m) (RCD)
4-Apr-14	220	8	13:57:25	14:00:25	0:03:00	22.3052	113.9716	22.3051	113.9716	NE LANTAU	x10	N	5.1	3	3	5.5	0	N	
4-Apr-14	221	12	14:01:55	14:06:35	0:04:40	22.3051	113.9716	22.3051	113.9716	NE LANTAU	x10	N	5.1	3	3	2.9	0	N	at Piling site B2 (200m) (casing)
4-Apr-14	223	11	14:15:30	14:19:30	0:04:00	22.3060	113.9721	22.3061	113.9721	NE LANTAU	x10	N	5.0	3	3	4.1	0	N	at Piling site B2 (300m) (casing)
4-Apr-14	224	12	14:24:53	14:29:23	0:04:30	22.3070	113.9734	22.3072	113.9734	NE LANTAU	x10	N	4.7	3	3	4.8	0	N	at Piling site B2 (500m) (casing)
4-Apr-14	225	11	14:37:33	14:41:53	0:04:20	22.3052	113.9714	22.3052	113.9713	NE LANTAU	x10	N	4.9	3	3	5	0	N	at Piling site B2 (200m) (casing)
4-Apr-14	226	12	14:48:05	14:52:05	0:04:00	22.3060	113.9721	22.3060	113.9721	NE LANTAU	x10	N	4.9	3	3	4.3	0	N	at Piling site B2 (300m) (casing)

Appendix II. (cont'd)

Date	File #	No. Cues	Begin Time	End Time	Duration	Begin LAT	Begin LONG	End LAT	End LONG	Area	Gain	Gain Change?	Water Depth	Hp Depth	BSS	Wind Speed	Prec.	Dolphin Record?	Note(s)
4-Apr-14	227	11	14:58:15	15:02:20	0:04:05	22.3071	113.9733	22.3073	113.9734	NE LANTAU	x10	N	4.6	3	3	4.2	0	N	at Piling site B2 (500m) (casing)
8-Apr-14	228	12	14:24:10	14:29:10	0:05:00	22.3046	113.9706	22.3046	113.9705	NE LANTAU	X10	N	4.7	3	1	1.1	0	N	at Piling site B1 (100m) (RCD)
8-Apr-14	229	7	14:32:35	14:37:35	0:05:00	22.3046	113.9705	22.3046	113.9705	NE LANTAU	x10	N	4.7	3	1	1.5	0	N	at Piling site B1 (100m) (RCD)
8-Apr-14	230	12	14:44:55	14:50:15	0:05:20	22.3041	113.9702	22.3041	113.9702	NE LANTAU	x10	N	4.6	3	1	1.1	0	N	at Piling site B1 (30m) (RCD)
8-Apr-14	231	12	14:52:50	14:57:50	0:05:00	22.3041	113.9702	22.3041	113.9701	NE LANTAU	x10	N	4.6	3	2	0.8	>0.1	N	at Piling site B1 (30m) (RCD), Rain stops at ~3:30
8-Apr-14	232	11	14:59:22	15:04:22	0:05:00	22.3041	113.9702	22.3041	113.9702	NE LANTAU	x10	N	4.6	3	2	1.1	0	N	at Piling site B1 (30m) (RCD)
8-Apr-14	233	13	15:11:47	15:16:47	0:05:00	22.3044	113.9709	22.3044	113.9710	NE LANTAU	x10	N	4.7	3	1	1.9	0	N	at Piling stie B1 (100m) (RCD)
9-Apr-14	234	7	11:24:33	11:30:33	0:06:00	22.3469	113.9410	22.3467	113.9419	NW LANTAU	x10	N	18.6	5	2	1.4	0	Y	snapping shrimp
9-Apr-14	236	6	11:40:15	11:45:15	0:05:00	22.3461	113.9393	22.3459	113.9397	NW LANTAU	x0	N	16.2	5	1	2.8	0	Y	snapping shrimp
9-Apr-14	237	3	11:46:35	11:51:35	0:05:00	22.3459	113.9399	22.3462	113.9404	NW LANTAU	x0	N	15.8	5	1	1.7	0	Y	
9-Apr-14	238	2	11:59:04	12:04:04	0:05:00	22.3460	113.9373	22.3459	113.9379	NW LANTAU	x0	N	14.8	5	2	2	0	Y	
9-Apr-14	239	7	12:05:00	12:11:00	0:06:00	22.3459	113.9381	22.3455	113.9402	NW LANTAU	x0	N	15.2	5	2	2.5	0	Y	
9-Apr-14	240	2	12:22:17	12:27:17	0:05:00	22.3464	113.9375	22.3463	113.9387	NW LANTAU	x0	N	15.1	5	2	1	0	Y	
9-Apr-14	241	9	12:35:15	12:40:15	0:05:00	22.3451	113.9343	22.3450	113.9353	NW LANTAU	x0	N	12.3	5	2	1.6	0	Y	
9-Apr-14	242	4	12:54:05	12:59:06	0:05:01	22.3466	113.9323	22.3466	113.9335	NW LANTAU	x0	N	13.7	5	2	2.8	0	Y	
9-Apr-14	243	9	15:01:00	15:06:00	0:05:00	22.3043	113.9706	22.3043	113.9706	NE LANTAU	x0	N	4.8	3	2	1.5	0	N	at Piling site B1 (100m) (RCD)
9-Apr-14	244	14	15:07:35	15:12:35	0:05:00	22.3043	113.9707	22.3043	113.9707	NE LANTAU	x0	N	4.8	3	2	1.6	0	N	at Piling site B1 (100m) (RCD)
9-Apr-14	245	9	15:21:00	15:26:00	0:05:00	22.3042	113.9704	22.3041	113.9705	NE LANTAU	x10/ x0	Y	4.5	3	2	2.2	0	N	at Piling site B1 (50m) (RCD), gain change from 10X to 0X @ 02:55
9-Apr-14	246	11	15:26:56	15:31:56	0:05:00	22.3041	113.9705	22.3043	113.9704	NE LANTAU	x0	N	4.5	3	2	0.4	0	N	at Piling site B1 (50m) (RCD)
9-Apr-14	247	14	15:39:10	15:44:15	0:05:05	22.3040	113.9707	22.3041	113.9708	NE LANTAU	x0	N	4.5	3	2	1	0	N	at Piling site B2 (50m) (RCD)
9-Apr-14	248	12	15:45:25	15:50:25	0:05:00	22.3041	113.9707	22.3041	113.9707	NE LANTAU	x0	N	4.5	3	2	2.6	0	N	at Piling site B2 (50m) (RCD)
9-Apr-14	249	13	15:54:55	15:59:55	0:05:00	22.3045	113.9710	22.3047	113.9708	NE LANTAU	x0	N	4.7	3	2	3.6	0	N	at Piling site B2 (100m) (RCD)
9-Apr-14	250	11	16:00:40	16:05:40	0:05:00	22.3047	113.9703	22.3047	113.9707	NE LANTAU	x0	N	4.7	3	2	5.7	0	N	at Piling site B2 (100m) (RCD)
10-Apr-14	251	4	11:51:25	11:54:25	0:03:00	22.3047	113.9603	22.3048	113.9598	NE LANTAU	x0/ x10	Y	4.0	3	2	1.8	0	N	437m from silt curtain of BCF, gain change from 0X to 10X @ 00:30
10-Apr-14	252	1	14:10:00	14:15:15	0:05:15	22.3413	113.9996	22.3414	113.9984	NE LANTAU	X10	N	29.7	5	3	2.5	0	Y	
10-Apr-14	253	5	14:25:48	14:30:48	0:05:00	22.3405	114.0065	22.3408	114.0048	NE LANTAU	x0	N	21.9	5	3	1.8	0	Y	
10-Apr-14	254	12	14:41:15	14:46:15	0:05:00	22.3391	114.0126	22.3397	114.0112	NE LANTAU	x0	N	23.7	5	3	3.9	0	Y	
10-Apr-14	255	10	16:00:05	16:05:05	0:05:00	22.3056	113.9728	22.3061	113.9726	NE LANTAU	x10	N	4.6	3	3	2.9	0	N	
10-Apr-14	256	8	16:16:27	16:19:27	0:03:00	22.3103	113.9644	22.3104	113.9640	NE LANTAU	x0	N	8.8	3	3	3.5	0	N	
10-Apr-14	257	8	16:31:20	16:34:30	0:03:10	22.3022	113.9655	22.3025	113.9657	NE LANTAU	x10	N	4.2	3	2	3.3	0	N	
11-Apr-14	258	10	14:42:40	14:46:40	0:04:00	22.3060	113.9727	22.3059	113.9728	NE LANTAU	x10	N	3.9	3	2	1.1	0	N	
11-Apr-14	259	11	15:21:37	15:26:37	0:05:00	22.3041	113.9706	22.3041	113.9706	NE LANTAU	x10	N	4.2	3	2	2	0	N	at Piling site B2 (50m) (RCD)
11-Apr-14	260	12	15:27:48	15:33:00	0:05:12	22.3041	113.9706	22.3042	113.9706	NE LANTAU	x10	N	4.2	3	2	3.4	0	N	at Piling site B2 (50m) (RCD)
11-Apr-14	261	8	15:39:49	15:44:49	0:05:00	22.3044	113.9710	22.3043	113.9710	NE LANTAU	x10	N	4.3	3	2	2.9	0	N	at Piling site B2 (100m) (RCD)
11-Apr-14	262	9	15:46:00	15:51:00	0:05:00	22.3043	113.9710	22.3043	113.9710	NE LANTAU	x10	N	4.3	3	2	3	0	N	at Piling site B2 (100m) (RCD)
14-Apr-14	263	11	13:31:50	13:36:50	0:05:00	22.3053	113.9714	22.3050	113.9712	NE LANTAU	x20	Y	4.1	3	2	0.4	0	N	gain change from 20X to 10X @ 02:05, at Piling site B1 (200m) (air lifting)
14-Apr-14	264	15	13:42:22	13:47:22	0:05:00	22.3055	113.9726	22.3054	113.9727	NE LANTAU	x10	N	4.0	3	2	0.9	0	N	at Piling site B1 (300m) (air lifting)
14-Apr-14	265	12	13:52:33	13:57:33	0:05:00	22.3063	113.9740	22.3064	113.9740	NE LANTAU	x10	N	3.7	3	2	1	0	N	at Piling site B1 (500m) (air lifting)
14-Apr-14	266	13	13:59:21	14:04:21	0:05:00	22.3064	113.9740	22.3064	113.9740	NE LANTAU	x10	N	3.7	3	2	1.4	0	N	at Piling site B2 (500m) (RCD)
14-Apr-14	267	13	14:11:55	14:16:53	0:04:58	22.3055	113.9724	22.3057	113.9724	NE LANTAU	x10	N	3.7	3	2	2.5	0	N	at Piling site B2 (300m) (RCD)
14-Apr-14	268	17	14:24:45	14:29:45	0:05:00	22.3051	113.9716	22.3051	113.9716	NE LANTAU	x10	N	3.8	3	2	0.9	0	N	at Piling site B2 (200m) (RCD)
15-Apr-14	270	15	15:24:10	15:29:10	0:05:00	22.3052	113.9711	22.3051	113.9711	NE LANTAU	x10	N	3.7	3	2	3.4	0	N	at Piling site B2 (200m) (RCD)
15-Apr-14	271	11	15:36:20	15:41:20	0:05:00	22.3059	113.9722	22.3061	113.9723	NE LANTAU	x10	N	3.8	3	2	4.8	0	N	at Piling site B2 (300m) (RCD)
15-Apr-14	272	10	15:47:25	15:52:25	0:05:00	22.3064	113.9739	22.3067	113.9740	NE LANTAU	x10	N	3.6	3	3	4.7	0	N	at Piling site B2 (500m) (RCD)
23-Apr-14	273	11	10:54:12	10:59:12	0:05:00	22.3049	113.9714	22.3049	113.9714	NE LANTAU	x10	N	4.3	3	3	4.1	0	N	at Piling site B1 (200m) (air lifting)
23-Apr-14	274	11	11:04:45	11:09:45	0:05:00	22.3053	113.9725	22.3053	113.9725	NE LANTAU	x10	N	4.3	3	3	5.4	0	N	at Piling site B1 (300m) (air lifting)
23-Apr-14	275	11	11:15:25	11:20:25	0:05:00	22.3066	113.9737	22.3067	113.9737	NE LANTAU	x10	N	4.3	3	3	6.1	0	N	at Piling site B1 (500m) (air lifting)
23-Apr-14	276	14	11:28:18	11:33:23	0:05:05	22.3048	113.9713	22.3049	113.9713	NE LANTAU	x10	N	4.8	3	3	4.3	0	N	at Piling site B1 (200m) (air lifting)
23-Apr-14	277	11	11:38:30	11:43:30	0:05:00	22.3056	113.9723	22.3055	113.9723	NE LANTAU	x10	N	4.4	3	3	6.6	0	N	at Piling site B1 (300m) (air lifting)
23-Apr-14	278	13	11:48:35	11:53:35	0:05:00	22.3069	113.9737	22.3070	113.9737	NE LANTAU	x10	N	4.4	3	3	8.2	0	N	at Piling site B1 (500m) (air lifting)
23-Apr-14	279	8	14:11:40	14:16:40	0:05:00	22.3042	113.9701	22.3042	113.9701	NE LANTAU	x10	N	4.8	3	2	2	0	N	at Piling site B1 (30m) (air lifting)
23-Apr-14	280	10	14:18:05	14:23:15	0:05:10	22.3042	113.9701	22.3042	113.9701	NE LANTAU	x10	N	4.8	3	2	1.1	0	N	at Piling site B1 (50m) (air lifting)
23-Apr-14	281	9	14:23:50	14:28:50	0:05:00	22.3042	113.9701	22.3042	113.9701	NE LANTAU	x10	N	4.8	3	2	2.1	0	N	at Piling site B1 (50m) (air lifting)
23-Apr-14	282	8	14:37:45	14:42:45	0:05:00	22.3045	113.9709	22.3044	113.9708	NE LANTAU	x10	N	4.9	3	2	2.1	0	N	at Piling site B1 (100m) (air lifting)
23-Apr-14	283	12	14:44:44	14:49:45	0:05:01	22.3044	113.9709	22.3043	113.9708	NE LANTAU	x10	N	4.9	3	2	3.1	0	N	at Piling site B1 (100m) (air lifting)
23-Apr-14	284	12	15:10:55	15:15:55	0:05:00	22.3070	113.9737	22.3069	113.9737	NE LANTAU	x10	N	4.9	3	3	3.8	0	N	at Piling site B1 (500m) (air lifting)
23-Apr-14	285	10	15:17:10	15:22:10	0:05:00	22.3069	113.9736	22.3070	113.9737	NE LANTAU	x10	N	4.9	3	3	2.9	0	N	at Piling site B1 (500m) (air lifting)
23-Apr-14	286	11	15:30:55	15:36:05	0:05:10	22.3054	113.9719	22.3055	113.9720	NE LANTAU	x10	N	4.9	3	3	3.1	0	N	at Piling site B1 (300m) (air lifting)
23-Apr-14	287	15	15:37:45	15:42:45	0:05:00	22.3055	113.9720	22.3054	113.9718	NE LANTAU	x10	N	4.9	3	3	1.8	0	N	at Piling site B1 (300m) (air lifting)
23-Apr-14	288	13	15:49:20	15:54:45	0:05:25	22.3049	113.9715	22.3050	113.9716	NE LANTAU	x10	N	5.1	3	3	2.3	0	N	at Piling site B1 (200m) (air lifting)
23-Apr-14	289	9	15:58:25	16:03:27	0:05:02	22.3050	113.9717	22.3051	113.9716	NE LANTAU	x10	N	5.1	3	3	1	0	N	at Piling site B1 (200m) (air lifting)
24-Apr-14	290	10	17:36:33	17:41:33	0:05:00	22.3072	113.9738	22.3072	113.9738	NE LANTAU	x10	N	4.7	3	2	2.6	0	N	at Piling site B1 (500m) (caging)
24-Apr-14	291	11	17:42:18	17:47:18	0:05:00	22.3072	113.9738	22.3072	113.9739	NE LANTAU	x10	N	4.7	3	2	4.1	0	N	at Piling site B1 (500m) (caging)

Appendix II. (cont'd)

Date	File #	No. Cues	Begin Time	End Time	Duration	Begin LAT	Begin LONG	End LAT	End LONG	Area	Gain	Gain Change?	Water Depth	Hp Depth	BSS	Wind Speed	Prec.	Dolphin Record?	Note(s)
24-Apr-14	292	16	17:55:36	18:00:36	0:05:00	22.3056	113.9722	22.3055	113.9721	NE LANTAU	x10	N	5.0	3	2	5.9	0	N	at Piling site B1 (300m) (caging)
24-Apr-14	293	13	18:02:30	18:07:30	0:05:00	22.3056	113.9722	22.3056	113.9721	NE LANTAU	x10	N	5.0	3	3	5.4	0	N	at Piling site B1 (300m) (caging)
24-Apr-14	294	7	18:16:10	18:21:10	0:05:00	22.3052	113.9711	22.3053	113.9711	NE LANTAU	x10	N	5.1	3	3	5.5	0	N	at Piling site B1 (200m) (caging)
24-Apr-14	295	3	21:19:45	21:23:15	0:03:30	22.3024	113.9666	22.3024	113.9666	NE LANTAU	x0/ x10	Y	4.0	3	3	3.4	0	N	gain change from x0 to 10x @00:13
24-Apr-14	296	3	21:48:50	21:51:50	0:03:00	22.3023	113.9665	22.3024	113.9665	NE LANTAU	x10	N	4.0	3	3	5.8	0	N	
24-Apr-14	297	3	22:22:50	22:25:50	0:03:00	22.3024	113.9665	22.3023	113.9665	NE LANTAU	x10	N	3.7	3	3	4.8	0	N	
24-Apr-14	298	3	22:51:30	22:54:30	0:03:00	22.3023	113.9665	22.3023	113.9665	NE LANTAU	x10	N	3.5	3	3	4.7	0	N	
24-Apr-14	299	3	23:25:27	23:28:27	0:03:00	22.3024	113.9666	22.3024	113.9666	NE LANTAU	x10	N	3.5	3	3	3.6	0	N	snapping shrimp and croaking sound heard
24-Apr-14	300	3	23:59:35	0:02:35	0:03:00	22.3024	113.9666	22.3024	113.9665	NE LANTAU	x10	N	3.4	3	3	7.6	0	N	
25-Apr-14	301	3	1:03:55	1:06:55	0:03:00	22.3021	113.9664	22.3019	113.9665	NE LANTAU	x10	N	3.3	3	3	3.7	0	N	
25-Apr-14	302	3	2:04:30	2:08:00	0:03:30	22.3022	113.9664	22.3022	113.9664	NE LANTAU	x10	N	3.5	3	3	4.8	0	N	
25-Apr-14	303	3	3:01:50	3:04:50	0:03:00	22.3021	113.9664	22.3021	113.9664	NE LANTAU	x10	N	3.5	3	2	2.5	0	N	
25-Apr-14	304	4	4:03:53	4:06:53	0:03:00	22.3023	113.9665	22.3023	113.9665	NE LANTAU	x10	N	3.8	3	3	4.7	0	N	snapping shrimp and croaking sound heard
25-Apr-14	305	4	5:04:11	5:07:11	0:03:00	22.3022	113.9664	22.3021	113.9664	NE LANTAU	x10	N	4.1	3	3	2.1	0	N	snapping shrimp and croaking sound heard
25-Apr-14	306	4	6:03:15	6:06:15	0:03:00	22.3022	113.9664	22.3022	113.9665	NE LANTAU	x10	N	4.3	3	3	2.5	0	N	
25-Apr-14	307	7	7:40:58	7:43:58	0:03:00	22.3047	113.9730	22.3051	113.9729	NE LANTAU	x10	N	4.5	3	3	3.6	0	N	
25-Apr-14	308	10	10:20:00	10:25:00	0:05:00	22.3040	113.9703	22.3040	113.9702	NE LANTAU	x10	N	4.3	3	3	5.4	0	N	at Piling site B1 (50m) (caging)
25-Apr-14	309	14	10:27:27	10:32:57	0:05:30	22.3040	113.9703	22.3040	113.9702	NE LANTAU	x10	N	4.3	3	3	6.3	0	N	at Piling site B1 (50m) (caging)
25-Apr-14	310	9	10:39:46	10:44:46	0:05:00	22.3045	113.9707	22.3045	113.9708	NE LANTAU	x10/ x20	Y	4.3	3	3	9	0	N	at Piling site B1 (100m) (caging), gain change from 10X to 20X @ 0:17
25-Apr-14	311	14	10:46:23	10:51:23	0:05:00	22.3045	113.9708	22.3045	113.9709	NE LANTAU	x20	N	4.3	3	3	5.4	0	N	at Piling site B1 (100m) (caging)
25-Apr-14	312	14	11:16:47	11:21:47	0:05:00	22.3053	113.9711	22.3053	113.9710	NE LANTAU	x10	N	4.4	3	2	2.5	0	N	at Piling site B1 (200m) (caging)
28-Apr-14	313	8	12:19:50	12:23:20	0:03:30	22.3016	113.9653	22.3016	113.9652	NE LANTAU	x20/x10	Y	3.8	3	1	0.9	0	N	at Piling site B1 (500m) (concreting); gain change from 20X to 10X @ 0:25
28-Apr-14	314	6	12:24:13	12:29:13	0:05:00	22.3016	113.9653	22.3017	113.9655	NE LANTAU	x10	N	3.8	3	1	1	0	N	at Piling site B1 (500m) (concreting)
28-Apr-14	315	9	12:36:05	12:41:05	0:05:00	22.3023	113.9675	22.3021	113.9676	NE LANTAU	x20	N	3.9	3	1	1.8	0	N	at Piling site B1 (300m) (concreting)
28-Apr-14	316	5	12:44:30	12:49:30	0:05:00	22.3020	113.9675	22.3020	113.9675	NE LANTAU	x10	N	3.9	3	1	2	0	N	at Piling site B1 (300m) (concreting)
28-Apr-14	317	15	12:57:00	13:02:00	0:05:00	22.3027	113.9683	22.3026	113.9683	NE LANTAU	x10	N	4.1	3	2	2.2	0	N	at Piling site B1 (200m) (concreting)
28-Apr-14	318	13	13:03:55	13:08:55	0:05:00	22.3026	113.9683	22.3026	113.9683	NE LANTAU	x10	N	4.1	3	2	3.1	0	N	at Piling site B1 (200m) (concreting)
28-Apr-14	319	5	14:08:14	14:11:14	0:03:00	22.3035	113.9697	22.3035	113.9697	NE LANTAU	x10/x0	Y	4.1	3	1	0.5	0	N	gain change from 10X to 0X @ 01:06
28-Apr-14	320	5	14:11:59	14:16:59	0:05:00	22.3035	113.9697	22.3035	113.9697	NE LANTAU	x0	N	4.1	3	1	0.4	0	N	
28-Apr-14	321	4	14:09:40	14:11:40	0:02:00	22.3041	113.9703	22.3041	113.9703	NE LANTAU	x0	N	4.0	3	1	2.1	0	N	at Piling platform B1 (50m) (concreting)
28-Apr-14	322	4	14:11:45	14:13:45	0:02:00	22.3041	113.9703	22.3041	113.9703	NE LANTAU	x0	N	4.0	3	1	1.9	0	N	at Piling platform B1 (50m) (concreting)
28-Apr-14	323	6	14:18:20	14:20:50	0:02:30	22.3040	113.9707	22.3039	113.9707	NE LANTAU	x10	N	4.0	3	1	1.9	0	N	at Piling platform B1 (100m (concreting)
28-Apr-14	324	8	14:20:54	14:23:54	0:03:00	22.3039	113.9707	22.3038	113.9706	NE LANTAU	x10	N	4.0	3	1	2	0	N	at Piling platform B1 (100m (concreting)

Appendix III. Sighting records of Chinese White Dolphins during baseline period (Sept-Oct 2013) and impact monitoring period (Mar-Apr 2014) of TM-CLKL acoustic monitoring

DATE	STG #	TIME	HRD SZ	AREA	BEAU	TYPE	LATITUDE	LONGITUDE	SEASON	BOAT ASSOC.	RECORDING
26-Sep-13	1	1447	2	NW LANTAU	3	TMCLKL	22.3802	113.8879	AUTUMN	NONE	N
26-Sep-13	2	1615	2	NW LANTAU	3	TMCLKL	22.2967	113.8773	AUTUMN	NONE	N
27-Sep-13	1	1050	6	NW LANTAU	3	TMCLKL	22.3720	113.8878	AUTUMN	NONE	Y
27-Sep-13	2	1245	5	NE LANTAU	2	TMCLKL	22.3294	113.9585	AUTUMN	NONE	Y
27-Sep-13	3	1339	11	NW LANTAU	3	TMCLKL	22.3347	113.9394	AUTUMN	NONE	Y
28-Sep-13	1	1508	4	NW LANTAU	2	TMCLKL	22.3830	113.8822	AUTUMN	NONE	Y
28-Sep-13	2	1615	1	NW LANTAU	2	TMCLKL	22.2955	113.8800	AUTUMN	NONE	N
29-Sep-13	1	1014	1	NW LANTAU	3	TMCLKL	22.3751	113.8759	AUTUMN	NONE	N
1-Oct-13	1	1022	9	NW LANTAU	2	TMCLKL	22.3789	113.8894	AUTUMN	PURSE SEINE	Y
1-Oct-13	2	1227	1	NW LANTAU	2	TMCLKL	22.3321	113.9057	AUTUMN	NONE	N
1-Oct-13	3	1356	5	NE LANTAU	1	TMCLKL	22.3311	113.9755	AUTUMN	NONE	Y
2-Oct-13	1	1412	5	NW LANTAU	2	TMCLKL	22.3811	113.8871	AUTUMN	NONE	Y
2-Oct-13	2	1530	1	NW LANTAU	3	TMCLKL	22.3753	113.9133	AUTUMN	NONE	Y
4-Oct-13	1	1123	8	NW LANTAU	2	TMCLKL	22.3629	113.8759	AUTUMN	NONE	Y
4-Oct-13	2	1523	1	NE LANTAU	3	TMCLKL	22.3320	114.0080	AUTUMN	NONE	N
5-Oct-13	1	1211	4	NW LANTAU	2	TMCLKL	22.3493	113.8949	AUTUMN	NONE	Y
5-Oct-13	2	1249	8	NW LANTAU	2	TMCLKL	22.3569	113.9053	AUTUMN	NONE	Y
5-Oct-13	3	1413	5	NW LANTAU	2	TMCLKL	22.3662	113.8769	AUTUMN	NONE	Y
5-Oct-13	4	1526	1	NE LANTAU	2	TMCLKL	22.3336	113.9747	AUTUMN	NONE	N
6-Oct-13	1	954	1	NW LANTAU	3	TMCLKL	22.3303	113.8858	AUTUMN	NONE	N
6-Oct-13	2	1056	10	NW LANTAU	2	TMCLKL	22.3528	113.8942	AUTUMN	NONE	Y
6-Oct-13	3	1152	6	NW LANTAU	3	TMCLKL	22.3374	113.9011	AUTUMN	NONE	Y
6-Oct-13	4	1217	7	NW LANTAU	3	TMCLKL	22.3386	113.8940	AUTUMN	NONE	Y
6-Oct-13	5	1308	1	NW LANTAU	3	TMCLKL	22.3390	113.9426	AUTUMN	NONE	N
6-Oct-13	6	1445	1	NE LANTAU	3	TMCLKL	22.3418	114.0095	AUTUMN	NONE	N
7-Oct-13	1	1156	10	NE LANTAU	3	TMCLKL	22.3444	113.9775	AUTUMN	NONE	Y
7-Oct-13	2	1438	9	NW LANTAU	4	TMCLKL	22.3386	113.9483	AUTUMN	NONE	Y
7-Oct-13	3	1506	6	NW LANTAU	4	TMCLKL	22.3408	113.9405	AUTUMN	NONE	Y
7-Oct-13	4	1553	1	NW LANTAU	5	TMCLKL	22.3451	113.8954	AUTUMN	NONE	N
8-Oct-13	1	1644	6	NE LANTAU	3	TMCLKL	22.3459	114.0119	AUTUMN	NONE	Y
9-Oct-13	1	925	10	NE LANTAU	1	TMCLKL	22.3479	113.9882	AUTUMN	NONE	Y

Appendix III. (cont'd)

DATE	STG #	TIME	HRD SZ	AREA	BEAU	TYPE	LATITUDE	LONGITUDE	SEASON	BOAT ASSOC.	RECORDING
9-Oct-13	2	1101	8	NE LANTAU	2	TMCLKL	22.3266	113.9974	AUTUMN	NONE	Y
10-Oct-13	1	948	10	NW LANTAU	2	TMCLKL	22.3187	113.8790	AUTUMN	NONE	Y
10-Oct-13	2	1151	4	NW LANTAU	2	TMCLKL	22.3558	113.9073	AUTUMN	NONE	Y
10-Oct-13	3	1235	4	NW LANTAU	2	TMCLKL	22.3501	113.9172	AUTUMN	NONE	Y
10-Oct-13	4	1321	2	NE LANTAU	2	TMCLKL	22.3288	113.9616	AUTUMN	NONE	Y
10-Oct-13	5	1542	1	NE LANTAU	2	TMCLKL	22.3354	114.0135	AUTUMN	NONE	N
11-Oct-13	1	1231	2	NE LANTAU	2	TMCLKL	22.3375	113.9653	AUTUMN	NONE	Y
12-Oct-13	1	1029	3	NW LANTAU	2	TMCLKL	22.3807	113.9014	AUTUMN	NONE	Y
12-Oct-13	2	1238	1	NW LANTAU	2	TMCLKL	22.3416	113.9407	AUTUMN	NONE	N
12-Oct-13	3	1545	2	NE LANTAU	2	TMCLKL	22.3280	113.9847	AUTUMN	NONE	Y
13-Oct-13	1	1325	1	NE LANTAU	2	TMCLKL	22.3441	113.9927	AUTUMN	NONE	Y
14-Oct-13	1	1045	1	NE LANTAU	3	TMCLKL	22.3456	113.9757	AUTUMN	NONE	N
14-Oct-13	2	1252	4	NW LANTAU	2	TMCLKL	22.3768	113.8753	AUTUMN	NONE	Y
14-Oct-13	3	1337	4	NW LANTAU	2	TMCLKL	22.3796	113.8871	AUTUMN	NONE	Y
15-Oct-13	1	1341	8	NW LANTAU	3	TMCLKL	22.3829	113.9028	AUTUMN	NONE	Y
18-Oct-13	1	1216	13	NW LANTAU	4	TMCLKL	22.3699	113.8893	AUTUMN	PURSE SEINE	Y
18-Oct-13	2	1426	2	NW LANTAU	2	TMCLKL	22.3242	113.9149	AUTUMN	NONE	N
19-Oct-13	1	1030	9	NE LANTAU	2	TMCLKL	22.3251	113.9783	AUTUMN	NONE	Y
19-Oct-13	2	1329	2	NW LANTAU	3	TMCLKL	22.3517	113.9194	AUTUMN	NONE	N
19-Oct-13	3	1417	2	NW LANTAU	2	TMCLKL	22.3291	113.9195	AUTUMN	NONE	N
20-Oct-13	1	929	1	NE LANTAU	2	TMCLKL	22.3354	113.9998	AUTUMN	NONE	Y
20-Oct-13	2	1010	6	NE LANTAU	1	TMCLKL	22.3167	113.9778	AUTUMN	NONE	Y
20-Oct-13	3	1243	11	NW LANTAU	3	TMCLKL	22.3300	113.8991	AUTUMN	NONE	Y
21-Oct-13	1	924	1	NE LANTAU	2	TMCLKL	22.3358	113.9971	AUTUMN	NONE	Y
21-Oct-13	2	1042	3	NE LANTAU	2	TMCLKL	22.3434	113.9707	AUTUMN	NONE	Y
21-Oct-13	3	1618	1	NE LANTAU	2	TMCLKL	22.3410	113.9775	AUTUMN	NONE	Y
22-Oct-13	1	1603	5	NE LANTAU	3	TMCLKL	22.3370	113.9713	AUTUMN	NONE	Y
22-Oct-13	2	1709	5	NE LANTAU	2	TMCLKL	22.3280	113.9732	AUTUMN	NONE	Y
23-Oct-13	1	835	1	NE LANTAU	2	TMCLKL	22.3215	113.9982	AUTUMN	NONE	Y
23-Oct-13	2	1043	1	NE LANTAU	3	TMCLKL	22.3424	113.9763	AUTUMN	NONE	Y
23-Oct-13	3	1121	2	NE LANTAU	3	TMCLKL	22.3414	113.9649	AUTUMN	NONE	N

Appendix III. (cont'd)

DATE	STG #	TIME	HRD SZ	AREA	BEAU	TYPE	LATITUDE	LONGITUDE	SEASON	BOAT ASSOC.	RECORDING
24-Oct-13	1	1147	4	NW LANTAU	3	TMCLKL	22.3387	113.8652	AUTUMN	NONE	Y
24-Oct-13	2	1226	8	NW LANTAU	3	TMCLKL	22.3834	113.8876	AUTUMN	NONE	Y
24-Oct-13	3	1440	5	NW LANTAU	3	TMCLKL	22.3534	113.9081	AUTUMN	NONE	Y
24-Oct-13	4	1507	3	NW LANTAU	3	TMCLKL	22.3503	113.9111	AUTUMN	NONE	Y
25-Oct-13	1	1214	4	NW LANTAU	3	TMCLKL	22.3846	113.8867	AUTUMN	NONE	Y
25-Oct-13	2	1255	2	NW LANTAU	3	TMCLKL	22.3781	113.8889	AUTUMN	NONE	N
12-Mar-14	1	1134	1	NE LANTAU	2	TMCLKL	22.3373	113.9935	SPRING	NONE	Y
17-Mar-14	1	1203	3	NE LANTAU	1	TMCLKL	22.3412	113.9510	SPRING	NONE	Y
9-Apr-14	1	1101	1	NE LANTAU	1	TMCLKL	22.3466	113.9441	SPRING	NONE	Y
10-Apr-14	1	1347	3	NE LANTAU	4	TMCLKL	22.3448	113.9862	SPRING	NONE	Y

Appendix IV. Database for acoustic focal follow during TM-CLKL baseline period (Sept-Oct 2013) and impact monitoring period (Mar-Apr 2014)

Date	Area	Stg#	File#	Hp Depth	Water Depth	ICP Gain	Time	Latitude	Longitude	Beau	Dolphin Grp Sz
27-Sep-13	NW LANTAU	1	35	5	10.3	x10	11:08:29	22.3772	113.8932	3	6
27-Sep-13	NW LANTAU	1	36	5	21.5	x10	11:23:16	22.3849	113.8918	2	4
27-Sep-13	NW LANTAU	1	37	5	21.7	x10	11:28:18	22.3831	113.8920	2	4
27-Sep-13	NE LANTAU	2	39	5	7.4	x10	12:56:18	22.3342	113.9518	3	4
27-Sep-13	NW LANTAU	2	40	5	8.9	x10	13:10:05	22.3327	113.9441	3	5
27-Sep-13	NW LANTAU	2	41	5	7.8	x10	13:25:43	22.3327	113.9345	3	5
27-Sep-13	NW LANTAU	3	43	5	16.9	x10	13:55:25	22.3364	113.9446	2	8
27-Sep-13	NW LANTAU	3	44	5	27.8	x10	14:00:33	22.3367	113.9445	2	8
27-Sep-13	NW LANTAU	3	45	5	27.8	x10	14:04:01	22.3367	113.9442	2	8
27-Sep-13	NW LANTAU	3	46	5	8.3	x10	14:19:37	22.3375	113.9463	2	8
27-Sep-13	NW LANTAU	3	47	5	17.2	x10	14:26:51	22.3375	113.9459	2	8
28-Sep-13	NW LANTAU	1	003	5	9.8	x11	15:22:19	22.3833	113.8775	2	3
1-Oct-13	NW LANTAU	1	86	5	31.0	x10	10:32:14	22.3766	113.8934	3	9
1-Oct-13	NW LANTAU	1	87	5	29.0	x10	10:37:26	22.3748	113.8938	3	9
1-Oct-13	NW LANTAU	1	88	5	29.0	x10	10:42:51	22.3726	113.8941	3	9
1-Oct-13	NW LANTAU	1	89	5	12.2	x10	10:49:18	22.3696	113.8946	3	9
1-Oct-13	NW LANTAU	1	90	5	29.0	x10	11:24:43	22.3751	113.8908	2	4
1-Oct-13	NW LANTAU	1	92	5	18.2	x10	11:44:50	22.3817	113.8879	2	2
1-Oct-13	NE LANTAU	3	95	5	9.1	x10	14:01:22	22.3252	113.9765	1	5
1-Oct-13	NE LANTAU	3	96	5	10.2	x10	14:11:11	22.3274	113.9762	2	5
1-Oct-13	NE LANTAU	3	97	5	14.0	x10	14:16:15	22.3275	113.9772	2	5
1-Oct-13	NE LANTAU	3	98	5	10.2	x10	14:25:41	22.3275	113.9777	2	5
1-Oct-13	NE LANTAU	3	99	5	14.9	x10	14:32:40	22.3270	113.9766	2	5
1-Oct-13	NE LANTAU	3	100	5	13.0	x10	14:47:24	22.3279	113.9767	2	5
1-Oct-13	NE LANTAU	3	101	5	10.5	x10	15:04:28	22.3244	113.9843	2	5
1-Oct-13	NE LANTAU	3	102	5	11.4	x10	15:20:48	22.3204	113.9925	2	5
1-Oct-13	NE LANTAU	3	103	5	7.0	x10	15:34:07	22.3176	113.9942	2	5
2-Oct-13	NW LANTAU	1	115	5	18.8	x10	14:36:03	22.3848	113.8883	2	3
2-Oct-13	NW LANTAU	1	116	5	18.7	x10	14:51:32	22.3869	113.8925	2	5
2-Oct-13	NW LANTAU	2	117	5	20.0	x10	15:09:03	22.3808	113.9015	3	3
2-Oct-13	NW LANTAU	2	118	5	17.4	x10	15:40:11	22.3736	113.9135	3	1
5-Oct-13	NW LANTAU	1	166	5	9.8	x10	12:20:20	22.3521	113.8926	2	2
5-Oct-13	NW LANTAU	1	167	5	9.8	x10	12:38:01	22.3508	113.9002	2	3
5-Oct-13	NW LANTAU	2	168	5	12.0	x10	12:54:45	22.3595	113.9031	3	4
5-Oct-13	NW LANTAU	2	169	5	11.7	x10	13:17:33	22.3667	113.8940	2	4
5-Oct-13	NW LANTAU	2	170	5	16.9	x10	13:41:53	22.3770	113.8907	2	4
5-Oct-13	NW LANTAU	3	171	5	6.2	x10	14:29:03	22.3653	113.8717	2	4
6-Oct-13	NW LANTAU	2	172	5	10.1	x0	11:09:28	22.3538	113.8913	3	6
6-Oct-13	NW LANTAU	2	173	5	8.0	x0	11:30:44	22.3548	113.8832	4	4
6-Oct-13	NW LANTAU	3	174	5	9.4	x0	12:06:29	22.3367	113.8973	3	4
6-Oct-13	NW LANTAU	4	175	5	9.7	x0	12:19:32	22.3379	113.8928	3	6
6-Oct-13	NW LANTAU	4	177	3	5.5	x0	12:35:06	22.3394	113.8879	4	5
7-Oct-13	NE LANTAU	1	192	5	30.1	x10	12:23:30	22.3436	113.9789	3	4
7-Oct-13	NE LANTAU	1	193	5	33.6	x10	13:01:30	22.3454	113.9765	5	3
7-Oct-13	NE LANTAU	1	194	5	31.8	x10	13:07:40	22.3449	113.9787	4	3
7-Oct-13	NW LANTAU	2	197	5	9.8	x10	14:46:10	22.3397	113.9477	3	3
7-Oct-13	NW LANTAU	3	198	5	9.8	x10	15:15:55	22.3427	113.9367	4	3
8-Oct-13	NE LANTAU	1	218	5	10.5	x0	16:59:26	22.3524	114.0070	2	6
8-Oct-13	NE LANTAU	1	219	5	11.1	x0	17:09:36	22.3511	114.0024	2	3
8-Oct-13	NE LANTAU	1	220	5	32.0	x0	17:21:10	22.3482	113.9975	2	2
9-Oct-13	NE LANTAU	1	243	5	31.1	x0	9:33:10	22.3466	113.9897	2	3
9-Oct-13	NE LANTAU	1	244	5	33.7	x0	9:49:35	22.3477	113.9967	2	6
9-Oct-13	NE LANTAU	1	245	5	30.3	x0	10:09:50	22.3430	114.0015	2	6
9-Oct-13	NE LANTAU	2	247	5	9.1	x0	11:11:10	22.3332	113.9973	2	6

Appendix IV. (cont'd)

Date	Area	Stg#	File#	Hp Depth	Water Depth	ICP Gain	Time	Latitude	Longitude	Beau	Dolphin Grp Sz
10-Oct-13	NW LANTAU	1	249	5	6.6	x10	10:01:48	22.3267	113.8798	3	2
10-Oct-13	NW LANTAU	1	250	5	6.5	x10	10:16:15	22.3282	113.8838	2	3
10-Oct-13	NW LANTAU	1	251	3	4.8	x10	10:28:50	22.3370	113.8818	2	4
10-Oct-13	NW LANTAU	1	253	5	5.8	x10	10:46:10	22.3421	113.8799	2	8
10-Oct-13	NW LANTAU	1	254	5	6.8	x10	10:53:32	22.3435	113.8787	2	6
10-Oct-13	NW LANTAU	1	255	5	7.0	x10	11:04:04	22.3452	113.8787	2	3
10-Oct-13	NW LANTAU	2	256	5	13.3	x10	12:23:40	22.3563	113.9109	3	3
10-Oct-13	NE LANTAU	3	258	5	9.5	x0	13:35:34	22.3375	113.9591	2	2
10-Oct-13	NE LANTAU	4	259	5	8.4	x0	13:48:10	22.3370	113.9529	2	2
11-Oct-13	NE LANTAU	1	273	5	30.4	x10	12:45:25	22.3437	113.9765	2	2
11-Oct-13	NE LANTAU	1	274	5	28.8	x10	13:00:00	22.3443	113.9725	2	2
11-Oct-13	NE LANTAU	1	275	5	32.0	x10	13:15:37	22.3449	113.9757	2	2
11-Oct-13	NE LANTAU	1	276	5	31.5	x10	13:26:32	22.3450	113.9786	2	2
12-Oct-13	NW LANTAU	1	294	5	19.8	x0	10:45:23	22.3785	113.9046	2	3
12-Oct-13	NW LANTAU	1	295	5	20.7	x0	11:04:50	22.3724	113.9125	2	2
12-Oct-13	NW LANTAU	1	296	5	17.6	x0	11:22:16	22.3739	113.9131	2	2
12-Oct-13	NE LANTAU	3	304	5	9.6	x10	15:59:45	22.3294	113.9777	3	1
12-Oct-13	NE LANTAU	3	305	5	6.8	x10	16:05:19	22.3302	113.9760	3	1
13-Oct-13	NE LANTAU	1	311	5	32.9	x10	13:43:40	22.3460	113.9952	2	1
14-Oct-13	NW LANTAU	2	323	5	10.0	x10	13:14:28	22.3775	113.8749	2	3
14-Oct-13	NW LANTAU	2	324	5	10.0	x10/x20	13:21:07	22.3759	113.8740	1	2
14-Oct-13	NW LANTAU	3	325	5	10.1	x10	13:46:14	22.3744	113.8876	2	3
15-Oct-13	NW LANTAU	1	330	5	20.5	x10	14:22:59	22.3664	113.9123	3	1
15-Oct-13	NW LANTAU	1	331	5	17.3	x0	14:46:55	22.3735	113.9137	3	2
18-Oct-13	NW LANTAU	1	394	5	14.2	x20/x10	12:24:18	22.3714	113.8931	3	7
18-Oct-13	NW LANTAU	1	395	5	14.2	x10	12:30:50	22.3676	113.8940	3	5
18-Oct-13	NW LANTAU	1	396	5	18.1	x10	12:51:35	22.3751	113.8931	3	4
18-Oct-13	NW LANTAU	1	397	5	21.7	x10	13:05:36	22.3811	113.8923	2	8
18-Oct-13	NW LANTAU	1	398	5	20.5	x10	13:20:08	22.3856	113.8887	2	8
18-Oct-13	NW LANTAU	1	399	5	20.5	x10	13:25:19	22.3824	113.8888	2	3
18-Oct-13	NE LANTAU	2	402	3	5.5	x20/x10	14:32:09	22.3286	113.9217	2	2
19-Oct-13	NE LANTAU	1	407	5	8.2	x20/x10	10:48:40	22.3337	113.9728	3	6
19-Oct-13	NE LANTAU	1	409	5	7.8	x0	11:04:01	22.3350	113.9680	3	6
19-Oct-13	NE LANTAU	1	410	5	12.0	x0/x10	11:22:47	22.3397	113.9627	3	6
19-Oct-13	NE LANTAU	1	411	5	11.0	x10	11:36:10	22.3393	113.9582	2	6
19-Oct-13	NW LANTAU	1	412	5	14.2	x0	12:03:03	22.3429	113.9456	2	6
19-Oct-13	NW LANTAU	1	413	5	22.9	x0	12:20:50	22.3491	113.9434	2	6
19-Oct-13	NW LANTAU	1	414	5	22.3	x0	12:34:09	22.3523	113.9412	2	6
19-Oct-13	NW LANTAU	1	415	5	24.3	x0	12:50:10	22.3537	113.9362	2	6
19-Oct-13	NW LANTAU	1	416	5	21.6	x0	13:15:10	22.3578	113.9283	2	6
20-Oct-13	NE LANTAU	1	422	5	10.0	x20/x10	9:40:40	22.3302	113.9892	2	1
20-Oct-13	NE LANTAU	2	423	5	9.8	x10	10:17:55	22.3173	113.9774	1	6
20-Oct-13	NE LANTAU	2	424	5	9.7	x10	10:23:20	22.3172	113.9775	1	6
20-Oct-13	NE LANTAU	2	425	5	9.9	x10	10:28:30	22.3173	113.9778	1	6
20-Oct-13	NE LANTAU	2	426	5	11.4	x10	10:41:47	22.3192	113.9794	1	3
20-Oct-13	NE LANTAU	2	427	5	10.4	x10	10:55:11	22.3157	113.9848	1	3
20-Oct-13	NW LANTAU	3	430	5	9.7	x10	12:57:57	22.3388	113.8924	2	6
20-Oct-13	NW LANTAU	3	431	5	11.1	x10	13:14:08	22.3449	113.8949	2	5
20-Oct-13	NW LANTAU	3	432	5	9.1	x10	13:34:55	22.3511	113.8932	2	5
20-Oct-13	NW LANTAU	3	433	5	9.0	x10	13:49:15	22.3548	113.8930	3	5
21-Oct-13	NE LANTAU	1	438	5	9.8	x10	9:37:24	22.3309	113.9868	1	1
21-Oct-13	NE LANTAU	2	440	5	23.7	X10	10:57:41	22.3436	113.9660	2	3
21-Oct-13	NE LANTAU	2	441	5	11.0	x10/x0	11:11:19	22.3397	113.9549	2	3
21-Oct-13	NW LANTAU	2	442	5	28.7	x10	11:25:33	22.3398	113.9432	2	3
21-Oct-13	NE LANTAU	3	461	5	13.3	x10/x0	16:27:25	22.3419	113.9781	2	1

Appendix IV. (cont'd)

Date	Area	Stg#	File#	Hp Depth	Water Depth	ICP Gain	Time	Latitude	Longitude	Beau	Dolphin Grp Sz
22-Oct-13	NE LANTAU	1	465	3	5.5	x0	16:17:12	22.3379	113.9746	2	5
22-Oct-13	NE LANTAU	1	466	3	6.5	x0	16:47:55	22.3389	113.9742	2	3
22-Oct-13	NE LANTAU	2	467	5	8.4	x10	17:09:49	22.3280	113.9732	2	5
22-Oct-13	NE LANTAU	2	468	5	11.5	x10	17:22:22	22.3235	113.9789	2	5
22-Oct-13	NE LANTAU	2	469	5	7.5	x10	17:37:03	22.3172	113.9844	2	5
22-Oct-13	NE LANTAU	2	470	5	10.8	x10	17:54:00	22.3190	113.9897	2	4
22-Oct-13	NE LANTAU	2	473	5	10.3	x10	18:02:40	22.3183	113.9888	2	3
23-Oct-13	NE LANTAU	1	495	5	8.8	x20	8:49:12	22.3309	113.9942	3	1
23-Oct-13	NE LANTAU	2	498	5	29.7	x10	11:01:40	22.3439	113.9739	3	1
24-Oct-13	NW LANTAU	2	501	5	21.7	x20	12:35:19	22.3860	113.8951	3	3
24-Oct-13	NW LANTAU	2	502	5	17.3	x0	13:04:04	22.3861	113.9032	3	4
24-Oct-13	NW LANTAU	2	503	5	15.3	x10	13:15:37	22.3856	113.9045	3	4
24-Oct-13	NW LANTAU	2	504	5	14.3	x10	13:20:51	22.3860	113.9047	3	4
24-Oct-13	NW LANTAU	2	505	5	12.3	x10	13:26:23	22.3866	113.9054	3	4
24-Oct-13	NW LANTAU	2	506	5	11.6	x10	13:31:35	22.3872	113.9061	3	4
24-Oct-13	NW LANTAU	2	507	5	10.5	x10	13:36:55	22.3875	113.9067	3	5
24-Oct-13	NW LANTAU	2	508	5	6.8	x10	13:52:45	22.3881	113.9089	2	5
24-Oct-13	NW LANTAU	2	509	5	6.8	x10	13:58:54	22.3875	113.9099	2	5
24-Oct-13	NW LANTAU	2	510	3	4.9	x10	14:10:30	22.3862	113.9114	2	5
24-Oct-13	NW LANTAU	3	511	5	9.8	x10	14:45:12	22.3509	113.9105	2	4
24-Oct-13	NW LANTAU	4	512	5	9.9	x10	15:07:15	22.3503	113.9111	3	3
25-Oct-13	NW LANTAU	1	520	5	~18	x10	12:30:30	22.3817	113.8862	3	2
25-Oct-13	NW LANTAU	1	521	5	~18	x10	12:35:45	22.3812	113.8857	3	2
12-Mar-14	NE LANTAU	1	75	5	12.9	x20	11:41:34	22.3395	113.9941	2	1
12-Mar-14	NE LANTAU	1	76	5	12.9	x20	11:47:18	22.3393	113.9943	2	1
12-Mar-14	NE LANTAU	1	77	5	8.9	x20	12:01:21	22.3363	113.9950	2	1
12-Mar-14	NE LANTAU	1	78	5	8.9	x20	12:06:38	22.3362	113.9952	2	1
12-Mar-14	NE LANTAU	1	79	5	10.4	x20	12:23:27	22.3356	113.0002	3	1
12-Mar-14	NE LANTAU	1	80	5	10.4	x20	12:29:05	22.3360	113.0000	3	1
12-Mar-14	NE LANTAU	1	81	5	9.6	x20	12:41:38	22.3348	113.9991	3	1
17-Mar-14	NE LANTAU	1	99	5	14.3	x10	12:11:15	22.3396	113.9425	1	3
17-Mar-14	NE LANTAU	1	100	5	18.9	x10	12:22:01	22.3385	113.9425	1	3
17-Mar-14	NE LANTAU	1	101	5	18.9	x10	12:27:15	22.3382	113.9437	1	3
17-Mar-14	NE LANTAU	1	102	5	14.6	x0	12:40:35	22.3401	113.9441	1	2
17-Mar-14	NE LANTAU	1	103	5	25.3	x10	12:52:06	22.3409	113.9451	1	2
17-Mar-14	NE LANTAU	1	104	5	10.1	x10	13:06:38	22.3387	113.9414	1	3
17-Mar-14	NE LANTAU	1	105	5	8.6	x10	13:22:00	22.3364	113.9430	2	2
17-Mar-14	NE LANTAU	1	106	5	9.0	x10	13:39:57	22.3372	113.9421	2	3
17-Mar-14	NE LANTAU	1	107	5	8.1	x10	13:55:20	22.3336	113.9483	2	2
17-Mar-14	NE LANTAU	1	108	5	13.4	x10	14:10:17	22.3361	113.9448	2	2
9-Apr-14	NW LANTAU	1	234	5	18.6	x10	11:24:33	22.3469	113.9410	2	1
9-Apr-14	NW LANTAU	1	236	5	16.2	x0	11:40:15	22.3461	113.9393	1	1
9-Apr-14	NW LANTAU	1	237	5	15.8	x0	11:46:35	22.3459	113.9399	1	1
9-Apr-14	NW LANTAU	1	238	5	14.8	x0	11:59:04	22.3460	113.9373	2	1
9-Apr-14	NW LANTAU	1	239	5	15.2	x0	12:05:00	22.3459	113.9381	2	1
9-Apr-14	NW LANTAU	1	240	5	15.1	x0	12:22:17	22.3404	113.9375	2	1
9-Apr-14	NW LANTAU	1	241	5	12.3	x0	12:35:15	22.3451	113.9343	2	1
9-Apr-14	NW LANTAU	1	242	5	13.7	x00	12:54:05	22.3406	113.9323	2	1
10-Apr-14	NE LANTAU	1	252	5	29.7	x10	14:10:00	22.3413	113.9996	3	3
10-Apr-14	NE LANTAU	1	253	5	21.9	x0	14:25:48	22.3405	114.0065	3	3
10-Apr-14	NE LANTAU	1	254	5	23.7	x0	14:41:15	22.3391	114.0126	3	3

APPENDIX V. Raw data for plots.

Data for Table 1. Mean bandlevels as a function of distance from proposed bored piling pier locations for the baseline study phase.

Wideband:

	Set 1: SPL_mean [dB re 1 uPa]					
Range (m)	Pier B1	Pier B2	Pier B3	Pier B5	Pier B6	Pier B7
0	118.0	116.3	113.2	107.2	NaN	117.8
10	116.1	NaN	114.3	110.7	NaN	112.7
20	117.2	NaN	113.8	110.9	NaN	115.6
50	117.3	NaN	111.5	110.7	NaN	119.2
100	118.2	NaN	111.8	116.2	NaN	114.5
200	117.3	NaN	113.1	113.2	NaN	117.2
300	115.6	NaN	111.6	111.0	NaN	117.0
500	112.1	NaN	110.4	119.0	NaN	111.9
	Set 2: SPL_mean [dB re 1 uPa]					
Range (m)	Pier B1	Pier B2	Pier B3	Pier B5	Pier B6	Pier B7
0	107.9	112.5	114.1	111.2	117.8	117.8
10	108.2	111.8	116.7	109.0	113.7	112.7
20	108.9	114.3	116.7	108.0	118.3	115.6
50	107.8	109.8	112.7	112.0	117.6	119.2
100	116.5	125.4	110.2	109.4	116.1	114.5
200	113.2	118.8	120.9	108.5	118.1	117.2
300	120.6	120.5	112.3	108.4	118.2	117.0
500	116.1	112.4	117.6	107.1	115.2	111.9

APPENDIX V (cont'd)

Data for Table 1. (cont'd)

Dolphin Band:

	Set 1: SPL_mean [dB re uPa]					
Range (m)	Pier B1	Pier B2	Pier B3	Pier B5	Pier B6	Pier B7
0	112.8	110.9	106.2	102.8	NaN	111.1
10	113.2	NaN	108.0	105.5	NaN	108.5
20	114.8	NaN	107.7	103.3	NaN	108.2
50	115.1	NaN	103.5	104.5	NaN	116.3
100	116.2	NaN	106.1	107.8	NaN	105.8
200	115.2	NaN	105.4	103.8	NaN	108.3
300	112.3	NaN	103.7	103.3	NaN	108.0
500	108.4	NaN	103.1	110.5	NaN	105.0
	Set 2: SPL_mean [dB re uPa]					
Range (m)	Pier B1	Pier B2	Pier B3	Pier B5	Pier B6	Pier B7
0	99.8	102.7	102.7	107.0	114.6	111.1
10	104.1	104.0	109.1	106.8	109.3	108.5
20	101.0	103.4	109.4	105.1	110.8	108.2
50	103.2	101.4	105.3	108.2	113.7	116.3
100	103.8	112.2	101.5	107.7	107.1	105.8
200	106.0	115.0	119.6	107.1	109.5	108.3
300	112.1	116.8	102.6	103.7	112.8	108.0
500	107.9	103.6	105.3	103.0	110.2	105.0

APPENDIX V (cont'd)

Data for Tables 2-3, Figures 13-14

B1			
Construction related Activity	Range [m]	Mean Bandlevel (Dolphin) [dB re uPa]	Mean Bandlevel (Wideband) [dB re uPa]
air lifting	30	111.90	117.70
	50	121.10	129.80
	100	117.00	120.80
		118.10	122.50
	200	118.30	127.50
		116.60	125.00
		114.30	118.30
		115.30	117.70
	300	120.50	128.50
		116.20	125.40
		119.50	126.40
		116.80	122.40
		115.90	120.50
	500	116.00	124.70
		115.60	123.60
		115.60	122.00
		115.70	124.40
		114.30	120.20
caging	50	113.90	120.50
		117.20	129.30
	100	127.90	135.50
	200	134.20	138.60
		123.00	129.30
	300	126.40	127.70
		126.30	127.70
	500	119.00	120.90
		119.70	121.80
casing	100	136.80	141.10
	200	129.00	135.60
	300	126.10	131.00
	500	118.80	125.00

APPENDIX V (cont'd)

Data for Tables 2-3, Figures 13-14

B1			
Construction related Activity	Range [m]	Mean Bandlevel (Dolphin) [dB re uPa]	Mean Bandlevel (Wideband) [dB re uPa]
concreting	50	121.00	125.10
		123.90	127.40
	100	123.10	126.80
		124.30	129.10
	200	115.20	120.60
		112.50	122.60
	300	107.90	117.90
		102.70	111.30
	500	103.40	111.60
RCD	30	124.20	128.20
		121.20	125.60
		119.20	123.30
	50	148.00	155.60
	100	124.40	131.50
		117.30	127.10
		116.70	121.60
		128.80	136.50
		126.50	131.90
	200	115.60	121.50
		117.10	123.00
		119.00	128.60
		116.00	121.00
	300	118.00	123.80
		118.60	129.70
		114.20	121.50
	500	116.90	124.80
		109.00	115.70
		113.50	124.90
		114.60	122.60

APPENDIX V (cont'd)

Data for Tables 2-3, Figures 13-14

B1			
Construction related Activity	Range [m]	Mean Bandlevel (Dolphin) [dB re uPa]	Mean Bandlevel (Wideband) [dB re uPa]
soil grabbing	50	123.00	130.30
	70	115.00	121.90
		115.40	120.80
	80	119.80	124.80
	90	129.40	134.60
	100	121.60	126.80
		123.90	129.50
		118.50	124.60
	150	123.00	130.30
	200	114.20	121.20
		111.90	118.30
		117.60	121.60
		110.80	118.00
		128.00	133.20
	300	107.30	120.00
		119.10	125.20
		121.60	127.30
		122.00	130.10
		111.70	117.10
	500	112.00	119.30
		108.20	114.60
		120.30	126.50
		106.50	114.90
		108.50	113.40
welding	50	122.10	126.40
	100	119.00	123.30
	200	116.60	123.50
	300	116.20	121.80
	500	108.10	115.00
		108.00	114.00

APPENDIX V (cont'd)

Data for Tables 2-3, Figures 13-14

B2			
Construction related Activity	Range [m]	Mean Bandlevel (Dolphin) [dB re uPa]	Mean Bandlevel (Wideband) [dB re uPa]
casing	100	132.40	138.60
		123.80	131.60
	200	121.90	131.50
		125.60	131.80
		119.30	127.90
		125.90	135.40
		130.00	132.40
		130.30	133.40
	300	120.60	134.20
		126.10	130.70
		128.20	130.60
	500	121.70	126.90
		121.00	125.20
	600	119.30	127.20
RCD	50	131.60	136.20
		125.70	130.50
		117.60	124.40
		129.20	136.80
	100	124.80	129.60
		126.60	132.60
		118.60	125.30
		127.30	132.60
	200	120.60	127.40
		124.50	129.60
	300	123.30	130.90
		114.00	118.90
	500	115.90	125.30
		119.30	122.50

APPENDIX V (cont'd)

Data for Tables 2-3, Figures 13-14

B2			
Construction related Activity	Range [m]	Mean Bandlevel (Dolphin) [dB re uPa]	Mean Bandlevel (Wideband) [dB re uPa]
soil grabbing	50	114.60	126.50
	80	129.80	133.50
	100	113.40	118.60
		126.70	130.00
	200	115.70	120.80
		119.30	123.60
	300	111.30	116.00
		115.40	120.40
	500	121.80	132.30
		108.30	113.10
	850	114.60	126.50
pre-drilling	50	112.00	117.00
	150	112.00	117.00

APPENDIX V (cont'd)

Data for Figure 3. Mean bandlevels for all 440 recordings. Bandlevels were analyzed in terms of both the 30–40,000 Hz "wideband" frequency range (red) and 400–12,500 Hz "dolphin-sensitive" band (blue) and then averaged over the duration of each recording.

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
26-Sep-13	9:20 AM	124.4	117.9
26-Sep-13	10:00 AM	111.9	105.1
26-Sep-13	10:34 AM	109.9	102.6
26-Sep-13	10:54 AM	112.5	110.3
26-Sep-13	11:52 AM	119.7	117.8
26-Sep-13	12:24 PM	119.7	116.9
26-Sep-13	12:51 PM	110.7	106.9
26-Sep-13	1:23 PM	114.7	111.9
26-Sep-13	1:55 PM	127.5	119.9
27-Sep-13	11:08 AM	113.0	111.6
27-Sep-13	11:23 AM	116.4	115.6
27-Sep-13	11:28 AM	124.4	121.8
27-Sep-13	12:19 PM	115.0	112.8
27-Sep-13	12:56 PM	120.1	114.1
27-Sep-13	1:10 PM	122.1	119.3
27-Sep-13	1:25 PM	118.2	116.9
27-Sep-13	1:50 PM	121.1	116.6
27-Sep-13	1:55 PM	126.5	121.3
27-Sep-13	2:00 PM	124.8	116.7
27-Sep-13	2:04 PM	116.1	111.6
27-Sep-13	2:19 PM	124.4	120.6
27-Sep-13	2:26 PM	126.9	124.1
27-Sep-13	3:12 PM	110.9	108.9
27-Sep-13	3:42 PM	117.7	113.7
27-Sep-13	4:16 PM	115.6	112.1
27-Sep-13	5:11 PM	115.0	106.1
28-Sep-13	9:42 AM	131.2	110.8
28-Sep-13	10:08 AM	112.7	102.9
28-Sep-13	10:40 AM	115.5	114.4
28-Sep-13	11:08 AM	114.7	112.7
28-Sep-13	11:40 AM	126.1	121.5
28-Sep-13	12:07 PM	123.8	117.3
28-Sep-13	1:26 PM	123.4	118.6
29-Sep-13	1:34 PM	122.8	119.7
29-Sep-13	3:25 PM	120.9	117.5

APPENDIX V (cont'd)

Data for Figure 3. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
29-Sep-13	4:01 PM	130.9	127.4
30-Sep-13	10:11 AM	130.8	126.5
30-Sep-13	10:39 AM	116.8	112.7
30-Sep-13	12:39 PM	117.1	114.2
30-Sep-13	1:09 PM	121.8	115.6
30-Sep-13	4:13 PM	113.1	104.1
1-Oct-13	10:32 AM	120.5	118.7
1-Oct-13	10:37 AM	118.1	116.7
1-Oct-13	10:42 AM	123.8	122.8
1-Oct-13	10:49 AM	118.6	116.8
1-Oct-13	11:24 AM	117.0	116.5
1-Oct-13	11:44 AM	115.5	115.2
1-Oct-13	1:09 PM	122.1	115.0
1-Oct-13	1:39 PM	118.8	111.7
1-Oct-13	2:01 PM	119.8	114.0
1-Oct-13	2:11 PM	117.2	112.8
1-Oct-13	2:16 PM	114.8	111.3
1-Oct-13	2:25 PM	112.0	107.9
1-Oct-13	2:32 PM	116.6	114.0
1-Oct-13	2:47 PM	113.7	110.7
1-Oct-13	3:04 PM	114.1	112.7
1-Oct-13	3:20 PM	120.9	115.9
1-Oct-13	3:34 PM	118.4	112.1
1-Oct-13	4:12 PM	123.5	114.9
1-Oct-13	4:21 PM	120.1	115.5
2-Oct-13	9:28 AM	118.2	110.3
2-Oct-13	10:01 AM	113.5	109.2
2-Oct-13	10:27 AM	113.3	110.7
2-Oct-13	10:59 AM	115.5	112.6
2-Oct-13	11:30 AM	125.7	116.7
2-Oct-13	11:57 AM	112.9	111.5
2-Oct-13	12:29 PM	134.2	131.2
2-Oct-13	12:58 PM	132.1	125.0
2-Oct-13	2:36 PM	118.5	117.6
2-Oct-13	2:51 PM	125.2	124.3
2-Oct-13	3:09 PM	115.9	113.7
3-Oct-13	12:33 PM	113.2	110.4

APPENDIX V (cont'd)

Data for Figure 3. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
3-Oct-13	1:02 PM	120.2	117.0
3-Oct-13	1:27 PM	124.4	105.7
3-Oct-13	2:47 PM	123.3	116.6
3-Oct-13	3:17 PM	127.5	121.3
3-Oct-13	3:47 PM	129.6	119.0
3-Oct-13	5:16 PM	119.5	116.0
3-Oct-13	5:51 PM	120.0	115.4
3-Oct-13	8:06 PM	118.0	112.8
3-Oct-13	8:08 PM	116.1	113.2
3-Oct-13	8:11 PM	117.2	114.8
3-Oct-13	8:20 PM	117.3	115.1
3-Oct-13	8:23 PM	118.2	116.2
3-Oct-13	8:33 PM	117.3	115.2
3-Oct-13	8:40 PM	115.6	112.3
3-Oct-13	8:45 PM	112.1	108.4
3-Oct-13	9:01 PM	116.3	110.9
3-Oct-13	9:10 PM	113.2	106.2
3-Oct-13	9:18 PM	114.3	108.0
3-Oct-13	9:34 PM	113.8	107.7
3-Oct-13	9:42 PM	111.5	103.5
3-Oct-13	9:47 PM	111.8	106.1
3-Oct-13	9:53 PM	113.1	105.4
3-Oct-13	10:00 PM	111.6	103.7
3-Oct-13	10:06 PM	110.4	103.1
4-Oct-13	9:50 AM	130.5	125.7
4-Oct-13	9:55 AM	127.8	123.3
4-Oct-13	10:05 AM	121.9	114.8
4-Oct-13	10:10 AM	132.1	127.3
4-Oct-13	11:43 AM	104.9	101.4
4-Oct-13	12:41 PM	114.4	112.7
4-Oct-13	1:12 PM	128.1	124.2
4-Oct-13	2:13 PM	119.5	114.7
4-Oct-13	2:42 PM	113.3	110.7
4-Oct-13	3:13 PM	116.9	114.7
4-Oct-13	3:41 PM	118.1	114.9
5-Oct-13	8:27 AM	107.0	101.7
5-Oct-13	8:57 AM	109.7	107.4

APPENDIX V (cont'd)

Data for Figure 3. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
5-Oct-13	9:30 AM	111.1	108.0
5-Oct-13	9:58 AM	119.7	116.1
5-Oct-13	10:28 AM	107.1	105.2
5-Oct-13	10:57 AM	122.9	119.4
5-Oct-13	11:27 AM	120.1	114.3
5-Oct-13	12:20 PM	106.4	105.5
5-Oct-13	12:38 PM	117.1	114.3
5-Oct-13	12:54 PM	117.1	115.3
5-Oct-13	1:17 PM	114.9	111.5
5-Oct-13	1:41 PM	111.7	110.7
5-Oct-13	2:29 PM	106.7	105.0
6-Oct-13	11:09 AM	114.7	112.2
6-Oct-13	11:30 AM	117.3	113.6
6-Oct-13	12:06 PM	113.9	110.8
6-Oct-13	12:19 PM	123.4	117.1
6-Oct-13	12:35 PM	113.3	110.3
6-Oct-13	1:29 PM	124.4	116.7
6-Oct-13	1:57 PM	115.0	113.6
6-Oct-13	2:27 PM	119.1	114.6
6-Oct-13	2:59 PM	114.3	112.4
6-Oct-13	3:28 PM	128.3	121.7
6-Oct-13	3:57 PM	118.5	111.5
6-Oct-13	4:16 PM	116.1	110.2
6-Oct-13	4:46 PM	129.6	122.3
7-Oct-13	9:32 AM	119.2	111.9
7-Oct-13	10:02 AM	112.3	108.5
7-Oct-13	10:31 AM	111.6	108.4
7-Oct-13	11:02 AM	112.3	109.8
7-Oct-13	11:33 AM	119.2	112.7
7-Oct-13	11:45 AM	115.8	111.6
7-Oct-13	12:23 PM	127.3	119.9
7-Oct-13	1:01 PM	117.0	114.1
7-Oct-13	1:07 PM	115.2	112.5
7-Oct-13	1:51 PM	121.2	115.1
7-Oct-13	2:22 PM	125.8	120.4
7-Oct-13	2:46 PM	128.5	124.4
7-Oct-13	3:15 PM	116.3	112.6

APPENDIX V (cont'd)

Data for Figure 3. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
8-Oct-13	12:34 PM	110.7	105.5
8-Oct-13	12:43 PM	110.9	103.3
8-Oct-13	12:54 PM	110.7	104.5
8-Oct-13	1:10 PM	116.2	107.8
8-Oct-13	1:19 PM	113.2	103.8
8-Oct-13	1:28 PM	111.0	103.3
8-Oct-13	1:42 PM	119.0	110.5
8-Oct-13	1:59 PM	115.6	108.2
8-Oct-13	2:03 PM	112.7	108.5
8-Oct-13	2:27 PM	117.8	111.1
8-Oct-13	2:39 PM	119.2	116.3
8-Oct-13	2:48 PM	114.5	105.8
8-Oct-13	3:03 PM	117.2	108.3
8-Oct-13	3:15 PM	117.0	108.0
8-Oct-13	3:23 PM	111.9	105.0
8-Oct-13	4:02 PM	116.4	113.7
8-Oct-13	4:33 PM	120.2	118.2
8-Oct-13	4:59 PM	121.9	117.2
8-Oct-13	5:09 PM	122.1	117.7
8-Oct-13	5:21 PM	120.0	117.2
8-Oct-13	6:01 PM	111.3	110.3
8-Oct-13	8:48 PM	113.9	107.7
8-Oct-13	9:16 PM	117.9	111.4
8-Oct-13	9:44 PM	111.0	107.9
8-Oct-13	10:18 PM	111.7	103.0
8-Oct-13	11:17 PM	112.9	105.8
9-Oct-13	12:16 AM	111.1	104.6
9-Oct-13	1:19 AM	112.9	107.1
9-Oct-13	2:15 AM	114.1	103.9
9-Oct-13	3:17 AM	108.5	102.0
9-Oct-13	4:18 AM	109.4	100.5
9-Oct-13	5:52 AM	107.7	100.0
9-Oct-13	6:18 AM	111.2	106.8
9-Oct-13	6:48 AM	107.6	102.1
9-Oct-13	7:32 AM	128.2	124.2
9-Oct-13	8:03 AM	116.0	112.9
9-Oct-13	8:21 AM	121.7	118.1

APPENDIX V (cont'd)

Data for Figure 3. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
9-Oct-13	8:41 AM	122.6	116.1
9-Oct-13	9:02 AM	116.8	114.7
9-Oct-13	9:33 AM	116.3	112.9
9-Oct-13	9:49 AM	120.2	116.2
9-Oct-13	10:09 AM	121.0	114.9
9-Oct-13	10:47 AM	111.8	110.1
9-Oct-13	11:11 AM	109.0	106.5
9-Oct-13	11:43 AM	124.6	119.3
10-Oct-13	10:01 AM	105.9	102.1
10-Oct-13	10:16 AM	125.5	123.2
10-Oct-13	10:28 AM	116.2	115.1
10-Oct-13	10:46 AM	107.7	105.9
10-Oct-13	10:53 AM	120.6	116.4
10-Oct-13	11:04 AM	112.5	110.2
10-Oct-13	1:02 PM	121.8	117.5
10-Oct-13	1:35 PM	119.5	114.9
10-Oct-13	1:48 PM	118.1	113.6
10-Oct-13	2:31 PM	114.2	111.2
10-Oct-13	3:03 PM	115.1	112.8
10-Oct-13	4:16 PM	117.9	114.1
11-Oct-13	9:47 AM	123.4	120.5
11-Oct-13	10:17 AM	112.2	109.0
11-Oct-13	10:48 AM	116.7	113.1
11-Oct-13	11:20 AM	117.8	114.4
11-Oct-13	11:47 AM	118.0	113.7
11-Oct-13	12:18 PM	121.7	113.6
11-Oct-13	12:45 PM	119.2	116.4
11-Oct-13	1:00 PM	117.6	113.5
11-Oct-13	1:15 PM	120.8	117.9
11-Oct-13	1:26 PM	111.4	109.0
11-Oct-13	2:18 PM	120.2	116.1
11-Oct-13	3:12 PM	108.9	101.0
11-Oct-13	3:29 PM	108.2	104.1
11-Oct-13	3:38 PM	107.8	103.2
11-Oct-13	3:43 PM	116.5	103.8
11-Oct-13	3:49 PM	113.2	106.0
11-Oct-13	3:55 PM	120.6	112.1

APPENDIX V (cont'd)

Data for Figure 3. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
11-Oct-13	4:01 PM	116.1	107.9
11-Oct-13	4:12 PM	114.1	102.7
11-Oct-13	4:18 PM	116.7	109.4
11-Oct-13	4:20 PM	116.7	109.1
11-Oct-13	4:26 PM	112.7	105.3
11-Oct-13	4:32 PM	110.2	101.5
11-Oct-13	4:39 PM	120.9	119.6
11-Oct-13	4:44 PM	112.3	102.6
11-Oct-13	4:50 PM	117.6	105.3
12-Oct-13	10:45 AM	119.4	115.7
12-Oct-13	11:04 AM	125.7	123.0
12-Oct-13	11:22 AM	122.6	120.3
12-Oct-13	1:07 PM	124.2	121.3
12-Oct-13	1:37 PM	115.1	112.9
12-Oct-13	2:07 PM	116.2	114.8
12-Oct-13	2:36 PM	113.0	111.0
12-Oct-13	3:06 PM	115.3	113.6
12-Oct-13	3:27 PM	109.0	107.0
12-Oct-13	3:59 PM	116.2	112.8
12-Oct-13	4:05 PM	113.6	108.9
13-Oct-13	10:25 AM	118.9	109.7
13-Oct-13	11:49 AM	126.6	122.0
13-Oct-13	12:17 PM	124.8	120.2
13-Oct-13	12:48 PM	122.8	119.1
13-Oct-13	1:17 PM	123.8	117.6
13-Oct-13	1:43 PM	122.2	117.9
13-Oct-13	2:16 PM	119.3	116.7
13-Oct-13	2:47 PM	113.9	113.3
13-Oct-13	3:18 PM	110.9	104.1
13-Oct-13	3:49 PM	124.0	122.3
13-Oct-13	4:20 PM	114.0	109.1
14-Oct-13	9:53 AM	110.1	107.9
14-Oct-13	10:22 AM	108.4	107.2
14-Oct-13	10:59 AM	127.0	120.9
14-Oct-13	11:27 AM	141.9	138.5
14-Oct-13	11:58 AM	124.7	121.8
14-Oct-13	1:14 PM	108.4	107.4

APPENDIX V (cont'd)

Data for Figure 3. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
14-Oct-13	1:46 PM	118.2	118.1
14-Oct-13	3:09 PM	108.9	103.6
14-Oct-13	3:38 PM	127.7	123.0
14-Oct-13	4:09 PM	116.9	114.8
14-Oct-13	4:39 PM	121.2	118.9
15-Oct-13	2:22 PM	128.2	122.4
15-Oct-13	2:46 PM	124.8	120.8
15-Oct-13	3:06 PM	120.7	118.7
15-Oct-13	3:21 PM	112.9	111.2
15-Oct-13	3:47 PM	129.6	124.0
15-Oct-13	4:16 PM	114.9	113.5
15-Oct-13	4:47 PM	119.6	115.3
15-Oct-13	5:17 PM	117.0	115.8
15-Oct-13	7:17 PM	110.2	107.2
15-Oct-13	7:20 PM	108.0	105.1
15-Oct-13	7:22 PM	107.4	105.7
15-Oct-13	7:50 PM	109.0	106.8
15-Oct-13	7:55 PM	111.2	107.0
15-Oct-13	8:07 PM	112.0	108.2
15-Oct-13	8:19 PM	109.4	107.7
15-Oct-13	8:30 PM	108.5	107.1
15-Oct-13	8:39 PM	108.4	103.7
15-Oct-13	8:50 PM	107.1	103.0
15-Oct-13	9:08 PM	111.2	106.4
15-Oct-13	9:17 PM	112.3	105.2
15-Oct-13	9:25 PM	119.5	107.8
15-Oct-13	9:34 PM	111.4	107.0
15-Oct-13	9:43 PM	111.8	105.5
15-Oct-13	9:54 PM	112.6	108.9
15-Oct-13	10:05 PM	112.2	109.8
15-Oct-13	10:17 PM	108.0	105.1
15-Oct-13	11:09 PM	115.7	111.3
15-Oct-13	11:35 PM	103.0	100.2
16-Oct-13	12:07 AM	108.3	102.8
16-Oct-13	1:04 AM	103.9	99.4
16-Oct-13	1:59 AM	101.7	100.1
16-Oct-13	3:03 AM	102.8	101.2

APPENDIX V (cont'd)

Data for Figure 3. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
16-Oct-13	4:03 AM	102.4	100.9
16-Oct-13	6:03 AM	106.5	104.2
16-Oct-13	6:28 AM	110.8	106.5
16-Oct-13	6:52 AM	113.4	107.2
16-Oct-13	7:22 AM	113.6	109.5
16-Oct-13	7:43 AM	111.0	107.3
16-Oct-13	8:02 AM	114.4	112.0
16-Oct-13	8:43 AM	124.1	118.6
16-Oct-13	9:03 AM	120.2	119.2
16-Oct-13	9:32 AM	113.0	110.3
16-Oct-13	10:02 AM	118.0	114.4
16-Oct-13	10:32 AM	117.5	116.9
16-Oct-13	11:09 AM	122.9	119.1
16-Oct-13	11:25 AM	108.6	106.9
17-Oct-13	9:32 AM	112.5	109.2
17-Oct-13	10:02 AM	119.9	118.6
17-Oct-13	10:32 AM	120.5	115.8
17-Oct-13	11:02 AM	125.5	121.2
17-Oct-13	11:31 AM	111.7	109.0
17-Oct-13	12:58 PM	111.0	108.9
17-Oct-13	1:20 PM	114.5	112.6
17-Oct-13	2:04 PM	115.8	111.7
17-Oct-13	2:32 PM	110.7	107.5
17-Oct-13	3:01 PM	109.0	105.4
17-Oct-13	3:32 PM	119.0	115.9
17-Oct-13	4:03 PM	120.8	114.6
18-Oct-13	9:33 AM	116.0	114.1
18-Oct-13	10:02 AM	112.3	111.8
18-Oct-13	10:33 AM	115.9	112.0
18-Oct-13	11:03 AM	119.2	115.1
18-Oct-13	12:30 PM	120.1	116.0
18-Oct-13	12:51 PM	117.4	114.2
18-Oct-13	1:05 PM	116.3	114.5
18-Oct-13	1:20 PM	115.9	114.7
18-Oct-13	1:25 PM	114.7	114.4
18-Oct-13	3:24 PM	124.1	108.6
18-Oct-13	3:56 PM	111.3	105.0

APPENDIX V (cont'd)

Data for Figure 3. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
18-Oct-13	4:22 PM	121.6	116.9
19-Oct-13	10:22 AM	107.8	105.1
19-Oct-13	11:04 AM	118.5	115.8
19-Oct-13	11:36 AM	124.8	117.6
19-Oct-13	12:03 PM	132.9	129.0
19-Oct-13	12:20 PM	122.9	118.1
19-Oct-13	12:34 PM	130.1	121.1
19-Oct-13	12:50 PM	124.0	120.6
19-Oct-13	1:15 PM	129.6	125.0
19-Oct-13	2:07 PM	111.8	110.3
19-Oct-13	2:25 PM	116.4	113.0
19-Oct-13	2:36 PM	115.1	113.8
19-Oct-13	3:26 PM	115.1	103.6
19-Oct-13	4:20 PM	119.0	116.3
20-Oct-13	10:17 AM	112.3	106.4
20-Oct-13	10:23 AM	108.7	105.7
20-Oct-13	10:28 AM	109.8	106.1
20-Oct-13	10:41 AM	120.9	115.4
20-Oct-13	10:55 AM	116.1	112.0
20-Oct-13	11:59 AM	117.4	114.1
20-Oct-13	12:23 PM	107.0	106.0
20-Oct-13	12:57 PM	112.2	110.3
20-Oct-13	1:14 PM	112.6	110.3
20-Oct-13	1:34 PM	108.9	106.9
20-Oct-13	1:49 PM	111.1	110.1
20-Oct-13	2:21 PM	105.5	104.2
20-Oct-13	2:37 PM	123.7	120.0
20-Oct-13	3:22 PM	124.5	118.4
20-Oct-13	4:09 PM	113.9	111.8
21-Oct-13	9:37 AM	111.4	110.8
21-Oct-13	10:17 AM	114.9	112.0
21-Oct-13	10:57 AM	118.2	112.0
21-Oct-13	11:25 AM	124.5	113.5
21-Oct-13	12:03 PM	112.5	102.7
21-Oct-13	12:11 PM	111.8	104.0
21-Oct-13	12:14 PM	114.3	103.4
21-Oct-13	12:22 PM	109.8	101.4

APPENDIX V (cont'd)

Data for Figure 3. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
21-Oct-13	12:28 PM	125.4	112.2
21-Oct-13	12:37 PM	118.8	115.0
21-Oct-13	12:45 PM	120.5	116.8
21-Oct-13	12:54 PM	112.4	103.6
21-Oct-13	1:13 PM	113.7	109.3
21-Oct-13	1:20 PM	118.3	110.8
21-Oct-13	1:27 PM	117.8	114.6
21-Oct-13	1:33 PM	117.6	113.7
21-Oct-13	1:41 PM	115.8	103.1
21-Oct-13	1:45 PM	116.1	107.1
21-Oct-13	1:54 PM	118.1	109.5
21-Oct-13	2:03 PM	118.2	112.8
21-Oct-13	2:11 PM	115.2	110.2
21-Oct-13	3:22 PM	108.9	105.3
22-Oct-13	12:59 PM	117.8	112.4
22-Oct-13	1:37 PM	135.3	131.9
22-Oct-13	2:24 PM	121.7	114.1
22-Oct-13	4:17 PM	118.1	116.3
22-Oct-13	4:47 PM	117.7	113.4
22-Oct-13	5:09 PM	126.8	121.3
22-Oct-13	5:22 PM	121.9	117.4
22-Oct-13	5:37 PM	114.4	110.9
22-Oct-13	5:54 PM	109.9	107.4
22-Oct-13	6:02 PM	111.6	106.0
22-Oct-13	7:05 PM	111.9	109.2
22-Oct-13	8:14 PM	110.7	108.7
22-Oct-13	8:48 PM	109.8	105.8
22-Oct-13	9:16 PM	110.2	104.5
22-Oct-13	9:50 PM	112.3	107.0
22-Oct-13	10:15 PM	106.1	102.9
22-Oct-13	10:47 PM	110.0	106.0
22-Oct-13	11:20 PM	108.3	103.4
22-Oct-13	11:52 PM	107.1	103.5
23-Oct-13	12:48 AM	111.6	104.5
23-Oct-13	1:46 AM	109.4	104.6
23-Oct-13	2:49 AM	106.5	101.7
23-Oct-13	3:45 AM	105.5	104.7

APPENDIX V (cont'd)

Data for Figure 3. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
23-Oct-13	4:46 AM	104.4	101.2
23-Oct-13	5:48 AM	108.8	100.7
23-Oct-13	6:17 AM	111.1	97.5
23-Oct-13	6:45 AM	111.9	103.0
23-Oct-13	7:21 AM	108.2	106.0
23-Oct-13	7:57 AM	113.6	109.6
23-Oct-13	8:18 AM	110.6	106.2
23-Oct-13	8:49 AM	115.4	111.3
23-Oct-13	9:32 AM	111.4	109.8
23-Oct-13	11:01 AM	120.6	115.0
24-Oct-13	9:48 AM	112.7	111.6
24-Oct-13	10:32 AM	126.1	118.9
24-Oct-13	12:35 PM	120.7	117.2
24-Oct-13	1:04 PM	133.6	128.8
24-Oct-13	1:15 PM	124.1	119.0
24-Oct-13	1:20 PM	128.9	122.9
24-Oct-13	1:26 PM	117.3	113.1
24-Oct-13	1:31 PM	125.4	121.4
24-Oct-13	1:36 PM	127.9	119.8
24-Oct-13	1:52 PM	120.8	115.5
24-Oct-13	1:58 PM	126.1	123.5
24-Oct-13	2:10 PM	119.2	113.4
24-Oct-13	2:45 PM	120.8	118.3
24-Oct-13	3:07 PM	116.0	114.5
24-Oct-13	3:28 PM	110.5	108.7
24-Oct-13	1:36 PM	112.7	111.1
24-Oct-13	4:32 PM	114.5	113.4
25-Oct-13	10:10 AM	116.2	111.9
25-Oct-13	10:50 AM	121.5	118.4
25-Oct-13	11:29 AM	123.4	122.1
25-Oct-13	12:30 PM	116.2	114.9
25-Oct-13	12:35 PM	116.0	115.0
25-Oct-13	1:40 PM	118.6	116.6
25-Oct-13	2:47 PM	120.5	118.0
25-Oct-13	3:33 PM	115.4	110.5

APPENDIX V (cont'd)

Data for Figure 4. Received sound levels in relation to wind speed: wind speeds measured during each recording (top plot), mean bandlevels for each recording (middle plot), and mean bandlevels as a function of wind speed (bottom plot).

Date	Time	Wind Speed [m/s]	Bandlevel (Wideband) [dB re uPa]
26-Sep-13	9:20 AM	2.1	124.4
26-Sep-13	10:00 AM	0.3	111.9
26-Sep-13	10:34 AM	2.5	109.9
26-Sep-13	10:54 AM	2.1	112.5
26-Sep-13	11:52 AM	0.3	119.7
26-Sep-13	12:24 PM	1.4	119.7
26-Sep-13	12:51 PM	0.3	110.7
26-Sep-13	1:23 PM	2.0	114.7
26-Sep-13	1:55 PM	2.4	127.5
27-Sep-13	11:08 AM	2.2	113.0
27-Sep-13	11:23 AM	3.3	116.4
27-Sep-13	11:28 AM	1.2	124.4
27-Sep-13	12:19 PM	1.8	115.0
27-Sep-13	12:56 PM	0.8	120.1
27-Sep-13	1:10 PM	3.3	122.1
27-Sep-13	1:25 PM	0.6	118.2
27-Sep-13	1:50 PM	1.6	121.1
27-Sep-13	1:55 PM	0.6	126.5
27-Sep-13	2:00 PM	0.6	124.8
27-Sep-13	2:04 PM	1.2	116.1
27-Sep-13	2:19 PM	1.2	124.4
27-Sep-13	2:26 PM	0.7	126.9
27-Sep-13	3:12 PM	3.7	110.9
27-Sep-13	3:42 PM	2.5	117.7
27-Sep-13	4:16 PM	1.3	115.6
27-Sep-13	5:11 PM	1.1	115.0
28-Sep-13	9:42 AM	1.8	131.2
28-Sep-13	10:08 AM	3.6	112.7
28-Sep-13	10:40 AM	4.1	115.5
28-Sep-13	11:08 AM	4.3	114.7
28-Sep-13	11:40 AM	4.0	126.1
28-Sep-13	12:07 PM	NaN	123.8
28-Sep-13	1:26 PM	2.9	123.4
29-Sep-13	1:34 PM	3.8	122.8
29-Sep-13	3:25 PM	1.4	120.9

APPENDIX V (cont'd)

Data for Figure 4. (cont'd)

Date	Time	Wind Speed [m/s]	Bandlevel (Wideband) [dB re uPa]
29-Sep-13	4:01 PM	0.6	130.9
30-Sep-13	10:11 AM	2.2	130.8
30-Sep-13	10:39 AM	3.5	116.8
30-Sep-13	12:39 PM	1.2	117.1
30-Sep-13	1:09 PM	3.2	121.8
30-Sep-13	4:13 PM	0.9	113.1
1-Oct-13	10:32 AM	1.8	120.5
1-Oct-13	10:37 AM	3.5	118.1
1-Oct-13	10:42 AM	1.6	123.8
1-Oct-13	10:49 AM	1.7	118.6
1-Oct-13	11:24 AM	1.3	117.0
1-Oct-13	11:44 AM	1.2	115.5
1-Oct-13	1:09 PM	1.7	122.1
1-Oct-13	1:39 PM	1.2	118.8
1-Oct-13	2:01 PM	2.2	119.8
1-Oct-13	2:11 PM	1.2	117.2
1-Oct-13	2:16 PM	1.2	114.8
1-Oct-13	2:25 PM	0.7	112.0
1-Oct-13	2:32 PM	1.4	116.6
1-Oct-13	2:47 PM	1.5	113.7
1-Oct-13	3:04 PM	2.1	114.1
1-Oct-13	3:20 PM	2.7	120.9
1-Oct-13	3:34 PM	2.5	118.4
1-Oct-13	4:12 PM	1.1	123.5
1-Oct-13	4:21 PM	2.5	120.1
2-Oct-13	9:28 AM	1.1	118.2
2-Oct-13	10:01 AM	1.5	113.5
2-Oct-13	10:27 AM	2.7	113.3
2-Oct-13	10:59 AM	2.7	115.5
2-Oct-13	11:30 AM	2.8	125.7
2-Oct-13	11:57 AM	0.6	112.9
2-Oct-13	12:29 PM	1.4	134.2
2-Oct-13	12:58 PM	1.2	132.1
2-Oct-13	2:36 PM	1.4	118.5
2-Oct-13	2:51 PM	2.9	125.2
2-Oct-13	3:09 PM	3.7	115.9
3-Oct-13	12:33 PM	0.6	113.2

APPENDIX V (cont'd)

Data for Figure 4. (cont'd)

Date	Time	Wind Speed [m/s]	Bandlevel (Wideband) [dB re uPa]
3-Oct-13	1:02 PM	0.6	120.2
3-Oct-13	1:27 PM	2.5	124.4
3-Oct-13	2:47 PM	2.8	123.3
3-Oct-13	3:17 PM	3.7	127.5
3-Oct-13	3:47 PM	1.5	129.6
3-Oct-13	5:16 PM	2.8	119.5
3-Oct-13	5:51 PM	2.2	120.0
3-Oct-13	8:06 PM	3.0	118.0
3-Oct-13	8:08 PM	3.1	116.1
3-Oct-13	8:11 PM	3.9	117.2
3-Oct-13	8:20 PM	4.2	117.3
3-Oct-13	8:23 PM	4.4	118.2
3-Oct-13	8:33 PM	5.8	117.3
3-Oct-13	8:40 PM	4.7	115.6
3-Oct-13	8:45 PM	3.6	112.1
3-Oct-13	9:01 PM	4.6	116.3
3-Oct-13	9:10 PM	4.5	113.2
3-Oct-13	9:18 PM	4.7	114.3
3-Oct-13	9:34 PM	4.3	113.8
3-Oct-13	9:42 PM	4.5	111.5
3-Oct-13	9:47 PM	4.1	111.8
3-Oct-13	9:53 PM	4.8	113.1
3-Oct-13	10:00 PM	3.6	111.6
3-Oct-13	10:06 PM	3.8	110.4
4-Oct-13	9:50 AM	2.9	130.5
4-Oct-13	9:55 AM	2.9	127.8
4-Oct-13	10:05 AM	1.7	121.9
4-Oct-13	10:10 AM	2.4	132.1
4-Oct-13	11:43 AM	1.1	104.9
4-Oct-13	12:41 PM	1.1	114.4
4-Oct-13	1:12 PM	1.3	128.1
4-Oct-13	2:13 PM	2.6	119.5
4-Oct-13	2:42 PM	2.0	113.3
4-Oct-13	3:13 PM	1.4	116.9
4-Oct-13	3:41 PM	3.6	118.1
5-Oct-13	8:27 AM	1.6	107.0
5-Oct-13	8:57 AM	1.3	109.7

APPENDIX V (cont'd)

Data for Figure 4. (cont'd)

Date	Time	Wind Speed [m/s]	Bandlevel (Wideband) [dB re uPa]
5-Oct-13	9:30 AM	1.7	111.1
5-Oct-13	9:58 AM	1.9	119.7
5-Oct-13	10:28 AM	1.3	107.1
5-Oct-13	10:57 AM	1.3	122.9
5-Oct-13	11:27 AM	2.4	120.1
5-Oct-13	12:20 PM	3.4	106.4
5-Oct-13	12:38 PM	4.1	117.1
5-Oct-13	12:54 PM	3.0	117.1
5-Oct-13	1:17 PM	3.4	114.9
5-Oct-13	1:41 PM	3.1	111.7
5-Oct-13	2:29 PM	3.0	106.7
6-Oct-13	11:09 AM	3.4	114.7
6-Oct-13	11:30 AM	5.1	117.3
6-Oct-13	12:06 PM	1.8	113.9
6-Oct-13	12:19 PM	2.1	123.4
6-Oct-13	12:35 PM	5.2	113.3
6-Oct-13	1:29 PM	1.6	124.4
6-Oct-13	1:57 PM	1.8	115.0
6-Oct-13	2:27 PM	2.7	119.1
6-Oct-13	2:59 PM	3.0	114.3
6-Oct-13	3:28 PM	3.5	128.3
6-Oct-13	3:57 PM	5.0	118.5
6-Oct-13	4:16 PM	4.5	116.1
6-Oct-13	4:46 PM	4.8	129.6
7-Oct-13	9:32 AM	5.0	119.2
7-Oct-13	10:02 AM	5.8	112.3
7-Oct-13	10:31 AM	5.6	111.6
7-Oct-13	11:02 AM	5.9	112.3
7-Oct-13	11:33 AM	7.1	119.2
7-Oct-13	11:45 AM	7.7	115.8
7-Oct-13	12:23 PM	3.8	127.3
7-Oct-13	1:01 PM	4.8	117.0
7-Oct-13	1:07 PM	4.9	115.2
7-Oct-13	1:51 PM	6.3	121.2
7-Oct-13	2:22 PM	5.9	125.8
7-Oct-13	2:46 PM	5.5	128.5
7-Oct-13	3:15 PM	3.5	116.3

APPENDIX V (cont'd)

Data for Figure 4. (cont'd)

Date	Time	Wind Speed [m/s]	Bandlevel (Wideband) [dB re uPa]
8-Oct-13	12:34 PM	4.6	110.7
8-Oct-13	12:43 PM	5.0	110.9
8-Oct-13	12:54 PM	2.0	110.7
8-Oct-13	1:10 PM	3.4	116.2
8-Oct-13	1:19 PM	3.5	113.2
8-Oct-13	1:28 PM	3.9	111.0
8-Oct-13	1:42 PM	5.1	119.0
8-Oct-13	1:59 PM	3.0	115.6
8-Oct-13	2:03 PM	3.8	112.7
8-Oct-13	2:27 PM	3.9	117.8
8-Oct-13	2:39 PM	3.7	119.2
8-Oct-13	2:48 PM	2.7	114.5
8-Oct-13	3:03 PM	2.7	117.2
8-Oct-13	3:15 PM	3.4	117.0
8-Oct-13	3:23 PM	3.3	111.9
8-Oct-13	4:02 PM	3.2	116.4
8-Oct-13	4:33 PM	2.4	120.2
8-Oct-13	4:59 PM	2.1	121.9
8-Oct-13	5:09 PM	3.1	122.1
8-Oct-13	5:21 PM	1.5	120.0
8-Oct-13	6:01 PM	3.6	111.3
8-Oct-13	8:48 PM	1.3	113.9
8-Oct-13	9:16 PM	1.8	117.9
8-Oct-13	9:44 PM	1.8	111.0
8-Oct-13	10:18 PM	1.0	111.7
8-Oct-13	11:17 PM	2.4	112.9
9-Oct-13	12:16 AM	2.9	111.1
9-Oct-13	1:19 AM	2.6	112.9
9-Oct-13	2:15 AM	1.1	114.1
9-Oct-13	3:17 AM	1.1	108.5
9-Oct-13	4:18 AM	1.9	109.4
9-Oct-13	5:52 AM	2.7	107.7
9-Oct-13	6:18 AM	0.8	111.2
9-Oct-13	6:48 AM	1.4	107.6
9-Oct-13	7:32 AM	0.6	128.2
9-Oct-13	8:03 AM	1.0	116.0
9-Oct-13	8:21 AM	0.3	121.7

APPENDIX V (cont'd)

Data for Figure 4. (cont'd)

Date	Time	Wind Speed [m/s]	Bandlevel (Wideband) [dB re uPa]
9-Oct-13	8:41 AM	0.7	122.6
9-Oct-13	9:02 AM	1.7	116.8
9-Oct-13	9:33 AM	2.0	116.3
9-Oct-13	9:49 AM	1.1	120.2
9-Oct-13	10:09 AM	1.3	121.0
9-Oct-13	10:47 AM	0.8	111.8
9-Oct-13	11:11 AM	1.4	109.0
9-Oct-13	11:43 AM	4.1	124.6
10-Oct-13	10:01 AM	3.0	105.9
10-Oct-13	10:16 AM	2.8	125.5
10-Oct-13	10:28 AM	3.3	116.2
10-Oct-13	10:46 AM	1.8	107.7
10-Oct-13	10:53 AM	2.4	120.6
10-Oct-13	11:04 AM	2.9	112.5
10-Oct-13	1:02 PM	1.7	121.8
10-Oct-13	1:35 PM	1.6	119.5
10-Oct-13	1:48 PM	0.3	118.1
10-Oct-13	2:31 PM	1.6	114.2
10-Oct-13	3:03 PM	2.8	115.1
10-Oct-13	4:16 PM	1.6	117.9
11-Oct-13	9:47 AM	0.6	123.4
11-Oct-13	10:17 AM	0.0	112.2
11-Oct-13	10:48 AM	1.1	116.7
11-Oct-13	11:20 AM	2.1	117.8
11-Oct-13	11:47 AM	1.5	118.0
11-Oct-13	12:18 PM	2.1	121.7
11-Oct-13	12:45 PM	0.4	119.2
11-Oct-13	1:00 PM	1.3	117.6
11-Oct-13	1:15 PM	2.3	120.8
11-Oct-13	1:26 PM	3.1	111.4
11-Oct-13	2:18 PM	2.7	120.2
11-Oct-13	3:12 PM	2.5	108.9
11-Oct-13	3:29 PM	1.2	108.2
11-Oct-13	3:38 PM	2.4	107.8
11-Oct-13	3:43 PM	0.3	116.5
11-Oct-13	3:49 PM	2.3	113.2
11-Oct-13	3:55 PM	2.5	120.6

APPENDIX V (cont'd)

Data for Figure 4. (cont'd)

Date	Time	Wind Speed [m/s]	Bandlevel (Wideband) [dB re uPa]
11-Oct-13	4:01 PM	1.0	116.1
11-Oct-13	4:12 PM	1.2	114.1
11-Oct-13	4:18 PM	0.5	116.7
11-Oct-13	4:20 PM	0.6	116.7
11-Oct-13	4:26 PM	1.7	112.7
11-Oct-13	4:32 PM	1.0	110.2
11-Oct-13	4:39 PM	1.6	120.9
11-Oct-13	4:44 PM	1.2	112.3
11-Oct-13	4:50 PM	1.7	117.6
12-Oct-13	10:45 AM	4.5	119.4
12-Oct-13	11:04 AM	1.8	125.7
12-Oct-13	11:22 AM	1.3	122.6
12-Oct-13	1:07 PM	5.4	124.2
12-Oct-13	1:37 PM	4.1	115.1
12-Oct-13	2:07 PM	3.5	116.2
12-Oct-13	2:36 PM	2.3	113.0
12-Oct-13	3:06 PM	2.5	115.3
12-Oct-13	3:27 PM	2.1	109.0
12-Oct-13	3:59 PM	2.4	116.2
12-Oct-13	4:05 PM	3.2	113.6
13-Oct-13	10:25 AM	2.9	118.9
13-Oct-13	11:49 AM	2.4	126.6
13-Oct-13	12:17 PM	1.5	124.8
13-Oct-13	12:48 PM	3.3	122.8
13-Oct-13	1:17 PM	0.7	123.8
13-Oct-13	1:43 PM	1.4	122.2
13-Oct-13	2:16 PM	0.9	119.3
13-Oct-13	2:47 PM	0.4	113.9
13-Oct-13	3:18 PM	0.6	110.9
13-Oct-13	3:49 PM	0.9	124.0
13-Oct-13	4:20 PM	0.7	114.0
14-Oct-13	9:53 AM	6.0	110.1
14-Oct-13	10:22 AM	4.9	108.4
14-Oct-13	10:59 AM	4.0	127.0
14-Oct-13	11:27 AM	5.0	141.9
14-Oct-13	11:58 AM	3.0	124.7
14-Oct-13	1:14 PM	1.1	108.4

APPENDIX V (cont'd)

Data for Figure 4. (cont'd)

Date	Time	Wind Speed [m/s]	Bandlevel (Wideband) [dB re uPa]
14-Oct-13	1:46 PM	1.7	118.2
14-Oct-13	3:09 PM	1.2	108.9
14-Oct-13	3:38 PM	1.1	127.7
14-Oct-13	4:09 PM	0.6	116.9
14-Oct-13	4:39 PM	0.6	121.2
15-Oct-13	2:22 PM	4.2	128.2
15-Oct-13	2:46 PM	4.7	124.8
15-Oct-13	3:06 PM	4.0	120.7
15-Oct-13	3:21 PM	2.2	112.9
15-Oct-13	3:47 PM	4.5	129.6
15-Oct-13	4:16 PM	3.2	114.9
15-Oct-13	4:47 PM	3.5	119.6
15-Oct-13	5:17 PM	4.8	117.0
15-Oct-13	7:17 PM	3.1	110.2
15-Oct-13	7:20 PM	1.6	108.0
15-Oct-13	7:22 PM	2.6	107.4
15-Oct-13	7:50 PM	3.1	109.0
15-Oct-13	7:55 PM	2.7	111.2
15-Oct-13	8:07 PM	3.5	112.0
15-Oct-13	8:19 PM	3.4	109.4
15-Oct-13	8:30 PM	3.3	108.5
15-Oct-13	8:39 PM	2.6	108.4
15-Oct-13	8:50 PM	1.4	107.1
15-Oct-13	9:08 PM	2.7	111.2
15-Oct-13	9:17 PM	3.1	112.3
15-Oct-13	9:25 PM	3.5	119.5
15-Oct-13	9:34 PM	4.2	111.4
15-Oct-13	9:43 PM	4.1	111.8
15-Oct-13	9:54 PM	2.6	112.6
15-Oct-13	10:05 PM	3.8	112.2
15-Oct-13	10:17 PM	3.9	108.0
15-Oct-13	11:09 PM	2.9	115.7
15-Oct-13	11:35 PM	1.7	103.0
16-Oct-13	12:07 AM	2.6	108.3
16-Oct-13	1:04 AM	3.8	103.9
16-Oct-13	1:59 AM	1.6	101.7
16-Oct-13	3:03 AM	1.2	102.8

APPENDIX V (cont'd)

Data for Figure 4. (cont'd)

Date	Time	Wind Speed [m/s]	Bandlevel (Wideband) [dB re uPa]
16-Oct-13	4:03 AM	2.1	102.4
16-Oct-13	6:03 AM	2.3	106.5
16-Oct-13	6:28 AM	2.9	110.8
16-Oct-13	6:52 AM	2.8	113.4
16-Oct-13	7:22 AM	3.8	113.6
16-Oct-13	7:43 AM	4.5	111.0
16-Oct-13	8:02 AM	3.9	114.4
16-Oct-13	8:43 AM	4.3	124.1
16-Oct-13	9:03 AM	2.9	120.2
16-Oct-13	9:32 AM	4.0	113.0
16-Oct-13	10:02 AM	4.5	118.0
16-Oct-13	10:32 AM	4.2	117.5
16-Oct-13	11:09 AM	4.8	122.9
16-Oct-13	11:25 AM	2.0	108.6
17-Oct-13	9:32 AM	3.7	112.5
17-Oct-13	10:02 AM	3.0	119.9
17-Oct-13	10:32 AM	4.3	120.5
17-Oct-13	11:02 AM	5.0	125.5
17-Oct-13	11:31 AM	3.8	111.7
17-Oct-13	12:58 PM	4.0	111.0
17-Oct-13	1:20 PM	3.8	114.5
17-Oct-13	2:04 PM	2.9	115.8
17-Oct-13	2:32 PM	1.4	110.7
17-Oct-13	3:01 PM	3.3	109.0
17-Oct-13	3:32 PM	2.9	119.0
17-Oct-13	4:03 PM	3.7	120.8
18-Oct-13	9:33 AM	2.7	116.0
18-Oct-13	10:02 AM	4.1	112.3
18-Oct-13	10:33 AM	3.2	115.9
18-Oct-13	11:03 AM	5.2	119.2
18-Oct-13	12:30 PM	5.0	120.1
18-Oct-13	12:51 PM	3.6	117.4
18-Oct-13	1:05 PM	2.6	116.3
18-Oct-13	1:20 PM	2.6	115.9
18-Oct-13	1:25 PM	2.1	114.7
18-Oct-13	3:24 PM	0.4	124.1
18-Oct-13	3:56 PM	3.4	111.3

APPENDIX V (cont'd)

Data for Figure 4. (cont'd)

Date	Time	Wind Speed [m/s]	Bandlevel (Wideband) [dB re uPa]
18-Oct-13	4:22 PM	3.3	121.6
19-Oct-13	10:22 AM	1.1	107.8
19-Oct-13	11:04 AM	2.8	118.5
19-Oct-13	11:36 AM	2.8	124.8
19-Oct-13	12:03 PM	2.1	132.9
19-Oct-13	12:20 PM	0.5	122.9
19-Oct-13	12:34 PM	0.6	130.1
19-Oct-13	12:50 PM	3.2	124.0
19-Oct-13	1:15 PM	1.6	129.6
19-Oct-13	2:07 PM	4.9	111.8
19-Oct-13	2:25 PM	3.2	116.4
19-Oct-13	2:36 PM	2.7	115.1
19-Oct-13	3:26 PM	2.6	115.1
19-Oct-13	4:20 PM	0.8	119.0
20-Oct-13	10:17 AM	1.8	112.3
20-Oct-13	10:23 AM	0.6	108.7
20-Oct-13	10:28 AM	1.4	109.8
20-Oct-13	10:41 AM	0.3	120.9
20-Oct-13	10:55 AM	0.3	116.1
20-Oct-13	11:59 AM	1.3	117.4
20-Oct-13	12:23 PM	2.7	107.0
20-Oct-13	12:57 PM	2.4	112.2
20-Oct-13	1:14 PM	2.3	112.6
20-Oct-13	1:34 PM	2.7	108.9
20-Oct-13	1:49 PM	4.2	111.1
20-Oct-13	2:21 PM	4.2	105.5
20-Oct-13	2:37 PM	2.8	123.7
20-Oct-13	3:22 PM	3.4	124.5
20-Oct-13	4:09 PM	2.5	113.9
21-Oct-13	9:37 AM	0.7	111.4
21-Oct-13	10:17 AM	0.5	114.9
21-Oct-13	10:57 AM	2.2	118.2
21-Oct-13	11:25 AM	0.3	124.5
21-Oct-13	12:03 PM	1.3	112.5
21-Oct-13	12:11 PM	1.9	111.8
21-Oct-13	12:14 PM	1.0	114.3
21-Oct-13	12:22 PM	2.4	109.8

APPENDIX V (cont'd)

Data for Figure 4. (cont'd)

Date	Time	Wind Speed [m/s]	Bandlevel (Wideband) [dB re uPa]
21-Oct-13	12:28 PM	3.5	125.4
21-Oct-13	12:37 PM	2.6	118.8
21-Oct-13	12:45 PM	3.3	120.5
21-Oct-13	12:54 PM	2.9	112.4
21-Oct-13	1:13 PM	3.2	113.7
21-Oct-13	1:20 PM	3.3	118.3
21-Oct-13	1:27 PM	1.1	117.8
21-Oct-13	1:33 PM	2.6	117.6
21-Oct-13	1:41 PM	2.8	115.8
21-Oct-13	1:45 PM	2.6	116.1
21-Oct-13	1:54 PM	1.0	118.1
21-Oct-13	2:03 PM	2.1	118.2
21-Oct-13	2:11 PM	1.8	115.2
21-Oct-13	3:22 PM	2.1	108.9
22-Oct-13	12:59 PM	2.0	117.8
22-Oct-13	1:37 PM	3.7	135.3
22-Oct-13	2:24 PM	4.3	121.7
22-Oct-13	4:17 PM	5.3	118.1
22-Oct-13	4:47 PM	3.3	117.7
22-Oct-13	5:09 PM	1.7	126.8
22-Oct-13	5:22 PM	2.3	121.9
22-Oct-13	5:37 PM	3.5	114.4
22-Oct-13	5:54 PM	2.7	109.9
22-Oct-13	6:02 PM	2.6	111.6
22-Oct-13	7:05 PM	2.0	111.9
22-Oct-13	8:14 PM	1.4	110.7
22-Oct-13	8:48 PM	1.8	109.8
22-Oct-13	9:16 PM	1.7	110.2
22-Oct-13	9:50 PM	2.6	112.3
22-Oct-13	10:15 PM	1.8	106.1
22-Oct-13	10:47 PM	1.2	110.0
22-Oct-13	11:20 PM	2.1	108.3
22-Oct-13	11:52 PM	1.6	107.1
23-Oct-13	12:48 AM	0.8	111.6
23-Oct-13	1:46 AM	2.8	109.4
23-Oct-13	2:49 AM	0.9	106.5
23-Oct-13	3:45 AM	3.3	105.5

APPENDIX V (cont'd)

Data for Figure 4. (cont'd)

Date	Time	Wind Speed [m/s]	Bandlevel (Wideband) [dB re uPa]
23-Oct-13	4:46 AM	1.1	104.4
23-Oct-13	5:48 AM	1.6	108.8
23-Oct-13	6:17 AM	1.2	111.1
23-Oct-13	6:45 AM	1.2	111.9
23-Oct-13	7:21 AM	2.1	108.2
23-Oct-13	7:57 AM	3.2	113.6
23-Oct-13	8:18 AM	1.6	110.6
23-Oct-13	8:49 AM	4.7	115.4
23-Oct-13	9:32 AM	3.8	111.4
23-Oct-13	11:01 AM	4.4	120.6
24-Oct-13	9:48 AM	4.3	112.7
24-Oct-13	10:32 AM	5.7	126.1
24-Oct-13	12:35 PM	6.2	120.7
24-Oct-13	1:04 PM	3.0	133.6
24-Oct-13	1:15 PM	3.8	124.1
24-Oct-13	1:20 PM	5.6	128.9
24-Oct-13	1:26 PM	3.6	117.3
24-Oct-13	1:31 PM	3.6	125.4
24-Oct-13	1:36 PM	3.2	127.9
24-Oct-13	1:52 PM	2.0	120.8
24-Oct-13	1:58 PM	1.9	126.1
24-Oct-13	2:10 PM	2.5	119.2
24-Oct-13	2:45 PM	2.6	120.8
24-Oct-13	3:07 PM	4.0	116.0
24-Oct-13	3:28 PM	2.9	110.5
24-Oct-13	1:36 PM	4.7	112.7
24-Oct-13	4:32 PM	3.6	114.5
25-Oct-13	10:10 AM	2.3	116.2
25-Oct-13	10:50 AM	1.5	121.5
25-Oct-13	11:29 AM	3.5	123.4
25-Oct-13	12:30 PM	2.8	116.2
25-Oct-13	12:35 PM	3.8	116.0
25-Oct-13	1:40 PM	2.0	118.6
25-Oct-13	2:47 PM	4.5	120.5
25-Oct-13	3:33 PM	4.4	115.4

APPENDIX V (cont'd)

Data for Figure 5. Received sound levels in relation to tidal height: tidal heights measured throughout the study (top plot), mean bandlevels for each recording (middle plot), and mean bandlevels as a function of tidal height (bottom plot).

Date	Time	Tidal Height [m]	Bandlevel (Wideband) [dB re uPa]
26-Sep-13	9:20 AM	2.1	124.4
26-Sep-13	10:00 AM	2.0	111.9
26-Sep-13	10:34 AM	1.9	109.9
26-Sep-13	10:54 AM	1.8	112.5
26-Sep-13	11:52 AM	1.6	119.7
26-Sep-13	12:24 PM	1.5	119.7
26-Sep-13	12:51 PM	1.4	110.7
26-Sep-13	1:23 PM	1.3	114.7
26-Sep-13	1:55 PM	1.2	127.5
27-Sep-13	11:08 AM	1.9	113.0
27-Sep-13	11:23 AM	1.8	116.4
27-Sep-13	11:28 AM	1.8	124.4
27-Sep-13	12:19 PM	1.7	115.0
27-Sep-13	12:56 PM	1.6	120.1
27-Sep-13	1:10 PM	1.5	122.1
27-Sep-13	1:25 PM	1.5	118.2
27-Sep-13	1:50 PM	1.4	121.1
27-Sep-13	1:55 PM	1.4	126.5
27-Sep-13	2:00 PM	1.4	124.8
27-Sep-13	2:04 PM	1.4	116.1
27-Sep-13	2:19 PM	1.3	124.4
27-Sep-13	2:26 PM	1.3	126.9
27-Sep-13	3:12 PM	1.2	110.9
27-Sep-13	3:42 PM	1.1	117.7
27-Sep-13	4:16 PM	1.1	115.6
27-Sep-13	5:11 PM	1.0	115.0
28-Sep-13	9:42 AM	2.0	131.2
28-Sep-13	10:08 AM	2.0	112.7
28-Sep-13	10:40 AM	2.0	115.5
28-Sep-13	11:08 AM	1.9	114.7
28-Sep-13	11:40 AM	1.9	126.1
28-Sep-13	12:07 PM	1.8	123.8
28-Sep-13	1:26 PM	1.7	123.4
29-Sep-13	1:34 PM	1.9	122.8
29-Sep-13	3:25 PM	1.6	120.9

APPENDIX V (cont'd)

Data for Figure 5. (cont'd)

Date	Time	Tidal Height [m]	Bandlevel (Wideband) [dB re uPa]
29-Sep-13	4:01 PM	1.5	130.9
30-Sep-13	10:11 AM	1.9	130.8
30-Sep-13	10:39 AM	1.9	116.8
30-Sep-13	12:39 PM	2.0	117.1
30-Sep-13	1:09 PM	2.0	121.8
30-Sep-13	4:13 PM	1.6	113.1
1-Oct-13	10:32 AM	1.6	120.5
1-Oct-13	10:37 AM	1.6	118.1
1-Oct-13	10:42 AM	1.6	123.8
1-Oct-13	10:49 AM	1.7	118.6
1-Oct-13	11:24 AM	1.7	117.0
1-Oct-13	11:44 AM	1.8	115.5
1-Oct-13	1:09 PM	1.9	122.1
1-Oct-13	1:39 PM	2.0	118.8
1-Oct-13	2:01 PM	2.0	119.8
1-Oct-13	2:11 PM	2.0	117.2
1-Oct-13	2:16 PM	2.0	114.8
1-Oct-13	2:25 PM	2.0	112.0
1-Oct-13	2:32 PM	2.0	116.6
1-Oct-13	2:47 PM	2.0	113.7
1-Oct-13	3:04 PM	2.0	114.1
1-Oct-13	3:20 PM	1.9	120.9
1-Oct-13	3:34 PM	1.9	118.4
1-Oct-13	4:12 PM	1.8	123.5
1-Oct-13	4:21 PM	1.8	120.1
2-Oct-13	9:28 AM	1.3	118.2
2-Oct-13	10:01 AM	1.4	113.5
2-Oct-13	10:27 AM	1.4	113.3
2-Oct-13	10:59 AM	1.5	115.5
2-Oct-13	11:30 AM	1.6	125.7
2-Oct-13	11:57 AM	1.6	112.9
2-Oct-13	12:29 PM	1.7	134.2
2-Oct-13	12:58 PM	1.8	132.1
2-Oct-13	2:36 PM	2.0	118.5
2-Oct-13	2:51 PM	2.0	125.2
2-Oct-13	3:09 PM	2.0	115.9
3-Oct-13	12:33 PM	1.6	113.2

APPENDIX V (cont'd)

Data for Figure 5. (cont'd)

Date	Time	Tidal Height [m]	Bandlevel (Wideband) [dB re uPa]
3-Oct-13	1:02 PM	1.7	120.2
3-Oct-13	1:27 PM	1.7	124.4
3-Oct-13	2:47 PM	2.0	123.3
3-Oct-13	3:17 PM	2.0	127.5
3-Oct-13	3:47 PM	2.1	129.6
3-Oct-13	5:16 PM	1.9	119.5
3-Oct-13	5:51 PM	1.8	120.0
3-Oct-13	8:06 PM	1.2	118.0
3-Oct-13	8:08 PM	1.2	116.1
3-Oct-13	8:11 PM	1.2	117.2
3-Oct-13	8:20 PM	1.1	117.3
3-Oct-13	8:23 PM	1.1	118.2
3-Oct-13	8:33 PM	1.1	117.3
3-Oct-13	8:40 PM	1.1	115.6
3-Oct-13	8:45 PM	1.0	112.1
3-Oct-13	9:01 PM	1.0	116.3
3-Oct-13	9:10 PM	1.0	113.2
3-Oct-13	9:18 PM	0.9	114.3
3-Oct-13	9:34 PM	0.9	113.8
3-Oct-13	9:42 PM	0.9	111.5
3-Oct-13	9:47 PM	0.9	111.8
3-Oct-13	9:53 PM	0.9	113.1
3-Oct-13	10:00 PM	0.9	111.6
3-Oct-13	10:06 PM	0.9	110.4
4-Oct-13	9:50 AM	1.1	130.5
4-Oct-13	9:55 AM	1.0	127.8
4-Oct-13	10:05 AM	1.0	121.9
4-Oct-13	10:10 AM	1.0	132.1
4-Oct-13	11:43 AM	1.1	104.9
4-Oct-13	12:41 PM	1.3	114.4
4-Oct-13	1:12 PM	1.5	128.1
4-Oct-13	2:13 PM	1.7	119.5
4-Oct-13	2:42 PM	1.8	113.3
4-Oct-13	3:13 PM	1.9	116.9
4-Oct-13	3:41 PM	2.0	118.1
5-Oct-13	8:27 AM	1.3	107.0
5-Oct-13	8:57 AM	1.2	109.7

APPENDIX V (cont'd)

Data for Figure 5. (cont'd)

Date	Time	Tidal Height [m]	Bandlevel (Wideband) [dB re uPa]
5-Oct-13	9:30 AM	1.1	111.1
5-Oct-13	9:58 AM	1.0	119.7
5-Oct-13	10:28 AM	0.9	107.1
5-Oct-13	10:57 AM	0.9	122.9
5-Oct-13	11:27 AM	0.9	120.1
5-Oct-13	12:20 PM	1.0	106.4
5-Oct-13	12:38 PM	1.1	117.1
5-Oct-13	12:54 PM	1.1	117.1
5-Oct-13	1:17 PM	1.2	114.9
5-Oct-13	1:41 PM	1.3	111.7
5-Oct-13	2:29 PM	1.6	106.7
6-Oct-13	11:09 AM	0.8	114.7
6-Oct-13	11:30 AM	0.8	117.3
6-Oct-13	12:06 PM	0.8	113.9
6-Oct-13	12:19 PM	0.8	123.4
6-Oct-13	12:35 PM	0.9	113.3
6-Oct-13	1:29 PM	1.0	124.4
6-Oct-13	1:57 PM	1.1	115.0
6-Oct-13	2:27 PM	1.3	119.1
6-Oct-13	2:59 PM	1.4	114.3
6-Oct-13	3:28 PM	1.6	128.3
6-Oct-13	3:57 PM	1.7	118.5
6-Oct-13	4:16 PM	1.8	116.1
6-Oct-13	4:46 PM	1.9	129.6
7-Oct-13	9:32 AM	1.4	119.2
7-Oct-13	10:02 AM	1.2	112.3
7-Oct-13	10:31 AM	1.0	111.6
7-Oct-13	11:02 AM	0.9	112.3
7-Oct-13	11:33 AM	0.8	119.2
7-Oct-13	11:45 AM	0.8	115.8
7-Oct-13	12:23 PM	0.7	127.3
7-Oct-13	1:01 PM	0.8	117.0
7-Oct-13	1:07 PM	0.8	115.2
7-Oct-13	1:51 PM	0.9	121.2
7-Oct-13	2:22 PM	1.0	125.8
7-Oct-13	2:46 PM	1.1	128.5
7-Oct-13	3:15 PM	1.2	116.3

APPENDIX V (cont'd)

Data for Figure 5. (cont'd)

Date	Time	Tidal Height [m]	Bandlevel (Wideband) [dB re uPa]
8-Oct-13	12:34 PM	0.7	110.7
8-Oct-13	12:43 PM	0.7	110.9
8-Oct-13	12:54 PM	0.7	110.7
8-Oct-13	1:10 PM	0.7	116.2
8-Oct-13	1:19 PM	0.7	113.2
8-Oct-13	1:28 PM	0.7	111.0
8-Oct-13	1:42 PM	0.7	119.0
8-Oct-13	1:59 PM	0.7	115.6
8-Oct-13	2:03 PM	0.7	112.7
8-Oct-13	2:27 PM	0.8	117.8
8-Oct-13	2:39 PM	0.8	119.2
8-Oct-13	2:48 PM	0.8	114.5
8-Oct-13	3:03 PM	0.9	117.2
8-Oct-13	3:15 PM	0.9	117.0
8-Oct-13	3:23 PM	1.0	111.9
8-Oct-13	4:02 PM	1.1	116.4
8-Oct-13	4:33 PM	1.3	120.2
8-Oct-13	4:59 PM	1.4	121.9
8-Oct-13	5:09 PM	1.4	122.1
8-Oct-13	5:21 PM	1.5	120.0
8-Oct-13	6:01 PM	1.6	111.3
8-Oct-13	8:48 PM	1.8	113.9
8-Oct-13	9:16 PM	1.7	117.9
8-Oct-13	9:44 PM	1.6	111.0
8-Oct-13	10:18 PM	1.5	111.7
8-Oct-13	11:17 PM	1.3	112.9
9-Oct-13	12:16 AM	1.2	111.1
9-Oct-13	1:19 AM	1.2	112.9
9-Oct-13	2:15 AM	1.4	114.1
9-Oct-13	3:17 AM	1.7	108.5
9-Oct-13	4:18 AM	2.0	109.4
9-Oct-13	5:52 AM	2.4	107.7
9-Oct-13	6:18 AM	2.4	111.2
9-Oct-13	6:48 AM	2.5	107.6
9-Oct-13	7:32 AM	2.4	128.2
9-Oct-13	8:03 AM	2.3	116.0
9-Oct-13	8:21 AM	2.2	121.7

APPENDIX V (cont'd)

Data for Figure 5. (cont'd)

Date	Time	Tidal Height [m]	Bandlevel (Wideband) [dB re uPa]
9-Oct-13	8:41 AM	2.2	122.6
9-Oct-13	9:02 AM	2.1	116.8
9-Oct-13	9:33 AM	1.9	116.3
9-Oct-13	9:49 AM	1.8	120.2
9-Oct-13	10:09 AM	1.7	121.0
9-Oct-13	10:47 AM	1.4	111.8
9-Oct-13	11:11 AM	1.3	109.0
9-Oct-13	11:43 AM	1.1	124.6
10-Oct-13	10:01 AM	2.0	105.9
10-Oct-13	10:16 AM	1.9	125.5
10-Oct-13	10:28 AM	1.8	116.2
10-Oct-13	10:46 AM	1.7	107.7
10-Oct-13	10:53 AM	1.7	120.6
10-Oct-13	11:04 AM	1.6	112.5
10-Oct-13	1:02 PM	1.0	121.8
10-Oct-13	1:35 PM	0.9	119.5
10-Oct-13	1:48 PM	0.8	118.1
10-Oct-13	2:31 PM	0.7	114.2
10-Oct-13	3:03 PM	0.7	115.1
10-Oct-13	4:16 PM	0.8	117.9
11-Oct-13	9:47 AM	2.2	123.4
11-Oct-13	10:17 AM	2.1	112.2
11-Oct-13	10:48 AM	2.0	116.7
11-Oct-13	11:20 AM	1.8	117.8
11-Oct-13	11:47 AM	1.7	118.0
11-Oct-13	12:18 PM	1.5	121.7
11-Oct-13	12:45 PM	1.4	119.2
11-Oct-13	1:00 PM	1.3	117.6
11-Oct-13	1:15 PM	1.3	120.8
11-Oct-13	1:26 PM	1.2	111.4
11-Oct-13	2:18 PM	1.0	120.2
11-Oct-13	3:12 PM	0.8	108.9
11-Oct-13	3:29 PM	0.8	108.2
11-Oct-13	3:38 PM	0.8	107.8
11-Oct-13	3:43 PM	0.8	116.5
11-Oct-13	3:49 PM	0.8	113.2
11-Oct-13	3:55 PM	0.8	120.6

APPENDIX V (cont'd)

Data for Figure 5. (cont'd)

Date	Time	Tidal Height [m]	Bandlevel (Wideband) [dB re uPa]
11-Oct-13	4:01 PM	0.8	116.1
11-Oct-13	4:12 PM	0.8	114.1
11-Oct-13	4:18 PM	0.8	116.7
11-Oct-13	4:20 PM	0.8	116.7
11-Oct-13	4:26 PM	0.8	112.7
11-Oct-13	4:32 PM	0.8	110.2
11-Oct-13	4:39 PM	0.8	120.9
11-Oct-13	4:44 PM	0.8	112.3
11-Oct-13	4:50 PM	0.8	117.6
12-Oct-13	10:45 AM	2.2	119.4
12-Oct-13	11:04 AM	2.1	125.7
12-Oct-13	11:22 AM	2.0	122.6
12-Oct-13	1:07 PM	1.6	124.2
12-Oct-13	1:37 PM	1.5	115.1
12-Oct-13	2:07 PM	1.3	116.2
12-Oct-13	2:36 PM	1.2	113.0
12-Oct-13	3:06 PM	1.1	115.3
12-Oct-13	3:27 PM	1.0	109.0
12-Oct-13	3:59 PM	0.9	116.2
12-Oct-13	4:05 PM	0.9	113.6
13-Oct-13	10:25 AM	2.2	118.9
13-Oct-13	11:49 AM	2.1	126.6
13-Oct-13	12:17 PM	2.1	124.8
13-Oct-13	12:48 PM	2.0	122.8
13-Oct-13	1:17 PM	1.9	123.8
13-Oct-13	1:43 PM	1.8	122.2
13-Oct-13	2:16 PM	1.6	119.3
13-Oct-13	2:47 PM	1.5	113.9
13-Oct-13	3:18 PM	1.4	110.9
13-Oct-13	3:49 PM	1.2	124.0
13-Oct-13	4:20 PM	1.1	114.0
14-Oct-13	9:53 AM	1.9	110.1
14-Oct-13	10:22 AM	2.0	108.4
14-Oct-13	10:59 AM	2.1	127.0
14-Oct-13	11:27 AM	2.1	141.9
14-Oct-13	11:58 AM	2.1	124.7
14-Oct-13	1:14 PM	2.1	108.4

APPENDIX V (cont'd)

Data for Figure 5. (cont'd)

Date	Time	Tidal Height [m]	Bandlevel (Wideband) [dB re uPa]
14-Oct-13	1:46 PM	2.0	118.2
14-Oct-13	3:09 PM	1.7	108.9
14-Oct-13	3:38 PM	1.6	127.7
14-Oct-13	4:09 PM	1.5	116.9
14-Oct-13	4:39 PM	1.3	121.2
15-Oct-13	2:22 PM	2.1	128.2
15-Oct-13	2:46 PM	2.0	124.8
15-Oct-13	3:06 PM	2.0	120.7
15-Oct-13	3:21 PM	1.9	112.9
15-Oct-13	3:47 PM	1.8	129.6
15-Oct-13	4:16 PM	1.7	114.9
15-Oct-13	4:47 PM	1.6	119.6
15-Oct-13	5:17 PM	1.4	117.0
15-Oct-13	7:17 PM	0.9	110.2
15-Oct-13	7:20 PM	0.9	108.0
15-Oct-13	7:22 PM	0.9	107.4
15-Oct-13	7:50 PM	0.9	109.0
15-Oct-13	7:55 PM	0.8	111.2
15-Oct-13	8:07 PM	0.8	112.0
15-Oct-13	8:19 PM	0.8	109.4
15-Oct-13	8:30 PM	0.8	108.5
15-Oct-13	8:39 PM	0.8	108.4
15-Oct-13	8:50 PM	0.8	107.1
15-Oct-13	9:08 PM	0.8	111.2
15-Oct-13	9:17 PM	0.8	112.3
15-Oct-13	9:25 PM	0.8	119.5
15-Oct-13	9:34 PM	0.8	111.4
15-Oct-13	9:43 PM	0.9	111.8
15-Oct-13	9:54 PM	0.9	112.6
15-Oct-13	10:05 PM	0.9	112.2
15-Oct-13	10:17 PM	0.9	108.0
15-Oct-13	11:09 PM	1.1	115.7
15-Oct-13	11:35 PM	1.2	103.0
16-Oct-13	12:07 AM	1.3	108.3
16-Oct-13	1:04 AM	1.5	103.9
16-Oct-13	1:59 AM	1.7	101.7
16-Oct-13	3:03 AM	1.8	102.8

APPENDIX V (cont'd)

Data for Figure 5. (cont'd)

Date	Time	Tidal Height [m]	Bandlevel (Wideband) [dB re uPa]
16-Oct-13	4:03 AM	1.8	102.4
16-Oct-13	6:03 AM	1.6	106.5
16-Oct-13	6:28 AM	1.5	110.8
16-Oct-13	6:52 AM	1.4	113.4
16-Oct-13	7:22 AM	1.3	113.6
16-Oct-13	7:43 AM	1.3	111.0
16-Oct-13	8:02 AM	1.3	114.4
16-Oct-13	8:43 AM	1.2	124.1
16-Oct-13	9:03 AM	1.2	120.2
16-Oct-13	9:32 AM	1.3	113.0
16-Oct-13	10:02 AM	1.3	118.0
16-Oct-13	10:32 AM	1.4	117.5
16-Oct-13	11:09 AM	1.5	122.9
16-Oct-13	11:25 AM	1.6	108.6
17-Oct-13	9:32 AM	1.0	112.5
17-Oct-13	10:02 AM	1.1	119.9
17-Oct-13	10:32 AM	1.1	120.5
17-Oct-13	11:02 AM	1.2	125.5
17-Oct-13	11:31 AM	1.3	111.7
17-Oct-13	12:58 PM	1.6	111.0
17-Oct-13	1:20 PM	1.7	114.5
17-Oct-13	2:04 PM	1.8	115.8
17-Oct-13	2:32 PM	1.9	110.7
17-Oct-13	3:01 PM	2.0	109.0
17-Oct-13	3:32 PM	2.0	119.0
17-Oct-13	4:03 PM	2.0	120.8
18-Oct-13	9:33 AM	1.0	116.0
18-Oct-13	10:02 AM	0.9	112.3
18-Oct-13	10:33 AM	0.9	115.9
18-Oct-13	11:03 AM	0.9	119.2
18-Oct-13	12:30 PM	1.2	120.1
18-Oct-13	12:51 PM	1.2	117.4
18-Oct-13	1:05 PM	1.3	116.3
18-Oct-13	1:20 PM	1.4	115.9
18-Oct-13	1:25 PM	1.4	114.7
18-Oct-13	3:24 PM	1.9	124.1
18-Oct-13	3:56 PM	1.9	111.3

APPENDIX V (cont'd)

Data for Figure 5. (cont'd)

Date	Time	Tidal Height [m]	Bandlevel (Wideband) [dB re uPa]
18-Oct-13	4:22 PM	2.0	121.6
19-Oct-13	10:22 AM	0.8	107.8
19-Oct-13	11:04 AM	0.8	118.5
19-Oct-13	11:36 AM	0.8	124.8
19-Oct-13	12:03 PM	0.8	132.9
19-Oct-13	12:20 PM	0.9	122.9
19-Oct-13	12:34 PM	0.9	130.1
19-Oct-13	12:50 PM	1.0	124.0
19-Oct-13	1:15 PM	1.0	129.6
19-Oct-13	2:07 PM	1.3	111.8
19-Oct-13	2:25 PM	1.4	116.4
19-Oct-13	2:36 PM	1.4	115.1
19-Oct-13	3:26 PM	1.6	115.1
19-Oct-13	4:20 PM	1.8	119.0
20-Oct-13	10:17 AM	0.9	112.3
20-Oct-13	10:23 AM	0.9	108.7
20-Oct-13	10:28 AM	0.9	109.8
20-Oct-13	10:41 AM	0.8	120.9
20-Oct-13	10:55 AM	0.8	116.1
20-Oct-13	11:59 AM	0.7	117.4
20-Oct-13	12:23 PM	0.7	107.0
20-Oct-13	12:57 PM	0.8	112.2
20-Oct-13	1:14 PM	0.8	112.6
20-Oct-13	1:34 PM	0.9	108.9
20-Oct-13	1:49 PM	0.9	111.1
20-Oct-13	2:21 PM	1.1	105.5
20-Oct-13	2:37 PM	1.1	123.7
20-Oct-13	3:22 PM	1.3	124.5
20-Oct-13	4:09 PM	1.5	113.9
21-Oct-13	9:37 AM	1.4	111.4
21-Oct-13	10:17 AM	1.1	114.9
21-Oct-13	10:57 AM	0.9	118.2
21-Oct-13	11:25 AM	0.8	124.5
21-Oct-13	12:03 PM	0.7	112.5
21-Oct-13	12:11 PM	0.7	111.8
21-Oct-13	12:14 PM	0.7	114.3
21-Oct-13	12:22 PM	0.7	109.8

APPENDIX V (cont'd)

Data for Figure 5. (cont'd)

Date	Time	Tidal Height [m]	Bandlevel (Wideband) [dB re uPa]
21-Oct-13	12:28 PM	0.7	125.4
21-Oct-13	12:37 PM	0.7	118.8
21-Oct-13	12:45 PM	0.7	120.5
21-Oct-13	12:54 PM	0.7	112.4
21-Oct-13	1:13 PM	0.7	113.7
21-Oct-13	1:20 PM	0.7	118.3
21-Oct-13	1:27 PM	0.7	117.8
21-Oct-13	1:33 PM	0.7	117.6
21-Oct-13	1:41 PM	0.8	115.8
21-Oct-13	1:45 PM	0.8	116.1
21-Oct-13	1:54 PM	0.8	118.1
21-Oct-13	2:03 PM	0.8	118.2
21-Oct-13	2:11 PM	0.8	115.2
21-Oct-13	3:22 PM	1.1	108.9
22-Oct-13	12:59 PM	0.7	117.8
22-Oct-13	1:37 PM	0.7	135.3
22-Oct-13	2:24 PM	0.8	121.7
22-Oct-13	4:17 PM	1.1	118.1
22-Oct-13	4:47 PM	1.2	117.7
22-Oct-13	5:09 PM	1.3	126.8
22-Oct-13	5:22 PM	1.4	121.9
22-Oct-13	5:37 PM	1.4	114.4
22-Oct-13	5:54 PM	1.5	109.9
22-Oct-13	6:02 PM	1.5	111.6
22-Oct-13	7:05 PM	1.6	111.9
22-Oct-13	8:14 PM	1.7	110.7
22-Oct-13	8:48 PM	1.6	109.8
22-Oct-13	9:16 PM	1.6	110.2
22-Oct-13	9:50 PM	1.5	112.3
22-Oct-13	10:15 PM	1.4	106.1
22-Oct-13	10:47 PM	1.4	110.0
22-Oct-13	11:20 PM	1.3	108.3
22-Oct-13	11:52 PM	1.3	107.1
23-Oct-13	12:48 AM	1.3	111.6
23-Oct-13	1:46 AM	1.4	109.4
23-Oct-13	2:49 AM	1.7	106.5
23-Oct-13	3:45 AM	1.9	105.5

APPENDIX V (cont'd)

Data for Figure 5. (cont'd)

Date	Time	Tidal Height [m]	Bandlevel (Wideband) [dB re uPa]
23-Oct-13	4:46 AM	2.2	104.4
23-Oct-13	5:48 AM	2.3	108.8
23-Oct-13	6:17 AM	2.4	111.1
23-Oct-13	6:45 AM	2.3	111.9
23-Oct-13	7:21 AM	2.3	108.2
23-Oct-13	7:57 AM	2.2	113.6
23-Oct-13	8:18 AM	2.1	110.6
23-Oct-13	8:49 AM	2.0	115.4
23-Oct-13	9:32 AM	1.8	111.4
23-Oct-13	11:01 AM	1.3	120.6
24-Oct-13	9:48 AM	1.9	112.7
24-Oct-13	10:32 AM	1.7	126.1
24-Oct-13	12:35 PM	1.1	120.7
24-Oct-13	1:04 PM	1.0	133.6
24-Oct-13	1:15 PM	1.0	124.1
24-Oct-13	1:20 PM	1.0	128.9
24-Oct-13	1:26 PM	0.9	117.3
24-Oct-13	1:31 PM	0.9	125.4
24-Oct-13	1:36 PM	0.9	127.9
24-Oct-13	1:52 PM	0.9	120.8
24-Oct-13	1:58 PM	0.9	126.1
24-Oct-13	2:10 PM	0.8	119.2
24-Oct-13	2:45 PM	0.8	120.8
24-Oct-13	3:07 PM	0.8	116.0
24-Oct-13	3:28 PM	0.8	110.5
24-Oct-13	1:36 PM	0.9	112.7
24-Oct-13	4:32 PM	0.9	114.5
25-Oct-13	10:10 AM	1.9	116.2
25-Oct-13	10:50 AM	1.7	121.5
25-Oct-13	11:29 AM	1.6	123.4
25-Oct-13	12:30 PM	1.3	116.2
25-Oct-13	12:35 PM	1.3	116.0
25-Oct-13	1:40 PM	1.1	118.6
25-Oct-13	2:47 PM	0.9	120.5
25-Oct-13	3:33 PM	0.9	115.4

APPENDIX V (cont'd)

Data for Figure 6. Mean bandlevels for the 122 recordings containing dolphin vocalizations. Bandlevels were analyzed in terms of both the 30–40,000 Hz "wideband" frequency range (red) and 400–12,500 Hz "dolphin-sensitive" band (blue). Note that the mean bandlevel was calculated across the entire recording, regardless of the duration of detected dolphin vocalizations.

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
27-Sep-13	11:08 AM	113.0	111.6
27-Sep-13	11:23 AM	116.4	115.6
27-Sep-13	11:28 AM	124.4	121.8
27-Sep-13	12:56 PM	120.1	114.1
27-Sep-13	1:10 PM	122.1	119.3
27-Sep-13	1:50 PM	121.1	116.6
27-Sep-13	1:55 PM	126.5	121.3
27-Sep-13	2:00 PM	124.8	116.7
27-Sep-13	2:04 PM	116.1	111.6
27-Sep-13	2:19 PM	124.4	120.6
27-Sep-13	2:26 PM	126.9	124.1
1-Oct-13	10:32 AM	120.5	118.7
1-Oct-13	10:37 AM	118.1	116.7
1-Oct-13	10:42 AM	123.8	122.8
1-Oct-13	10:49 AM	118.6	116.8
1-Oct-13	11:24 AM	117.0	116.5
1-Oct-13	11:44 AM	115.5	115.2
1-Oct-13	2:01 PM	119.8	114.0
1-Oct-13	2:11 PM	117.2	112.8
1-Oct-13	2:16 PM	114.8	111.3
1-Oct-13	2:25 PM	112.0	107.9
1-Oct-13	2:32 PM	116.6	114.0
1-Oct-13	2:47 PM	113.7	110.7
1-Oct-13	3:04 PM	114.1	112.7
1-Oct-13	3:20 PM	120.9	115.9
1-Oct-13	3:34 PM	118.4	112.1
2-Oct-13	2:36 PM	118.5	117.6
2-Oct-13	2:51 PM	125.2	124.3
2-Oct-13	3:09 PM	115.9	113.7
4-Oct-13	11:43 AM	104.9	101.4
5-Oct-13	12:20 PM	106.4	105.5
5-Oct-13	12:38 PM	117.1	114.3
5-Oct-13	12:54 PM	117.1	115.3

APPENDIX V (cont'd)

Data for Figure 6. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
5-Oct-13	1:17 PM	114.9	111.5
5-Oct-13	1:41 PM	111.7	110.7
5-Oct-13	2:29 PM	106.7	105.0
6-Oct-13	11:09 AM	114.7	112.2
6-Oct-13	11:30 AM	117.3	113.6
6-Oct-13	12:06 PM	113.9	110.8
6-Oct-13	12:19 PM	123.4	117.1
6-Oct-13	12:35 PM	113.3	110.3
7-Oct-13	12:23 PM	127.3	119.9
7-Oct-13	1:01 PM	117.0	114.1
7-Oct-13	1:07 PM	115.2	112.5
7-Oct-13	2:46 PM	128.5	124.4
7-Oct-13	3:15 PM	116.3	112.6
8-Oct-13	4:59 PM	121.9	117.2
8-Oct-13	5:09 PM	122.1	117.7
8-Oct-13	5:21 PM	120.0	117.2
9-Oct-13	9:33 AM	116.3	112.9
9-Oct-13	9:49 AM	120.2	116.2
9-Oct-13	10:09 AM	121.0	114.9
9-Oct-13	11:11 AM	109.0	106.5
10-Oct-13	10:01 AM	105.9	102.1
10-Oct-13	10:16 AM	125.5	123.2
10-Oct-13	10:28 AM	116.2	115.1
10-Oct-13	10:46 AM	107.7	105.9
10-Oct-13	10:53 AM	120.6	116.4
10-Oct-13	11:04 AM	112.5	110.2
10-Oct-13	1:35 PM	119.5	114.9
10-Oct-13	1:48 PM	118.1	113.6
11-Oct-13	12:45 PM	119.2	116.4
11-Oct-13	1:00 PM	117.6	113.5
11-Oct-13	1:15 PM	120.8	117.9
11-Oct-13	1:26 PM	111.4	109.0
12-Oct-13	10:45 AM	119.4	115.7
12-Oct-13	11:04 AM	125.7	123.0
12-Oct-13	11:22 AM	122.6	120.3
12-Oct-13	3:59 PM	116.2	112.8
12-Oct-13	4:05 PM	113.6	108.9

APPENDIX V (cont'd)

Data for Figure 6. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
14-Oct-13	1:14 PM	108.4	107.4
14-Oct-13	1:46 PM	118.2	118.1
15-Oct-13	2:22 PM	128.2	122.4
15-Oct-13	2:46 PM	124.8	120.8
18-Oct-13	12:30 PM	120.1	116.0
18-Oct-13	12:51 PM	117.4	114.2
18-Oct-13	1:05 PM	116.3	114.5
18-Oct-13	1:20 PM	115.9	114.7
18-Oct-13	1:25 PM	114.7	114.4
19-Oct-13	11:04 AM	118.5	115.8
19-Oct-13	11:36 AM	124.8	117.6
19-Oct-13	12:03 PM	132.9	129.0
19-Oct-13	12:20 PM	122.9	118.1
19-Oct-13	12:34 PM	130.1	121.1
19-Oct-13	12:50 PM	124.0	120.6
19-Oct-13	1:15 PM	129.6	125.0
20-Oct-13	10:17 AM	112.3	106.4
20-Oct-13	10:23 AM	108.7	105.7
20-Oct-13	10:28 AM	109.8	106.1
20-Oct-13	10:41 AM	120.9	115.4
20-Oct-13	10:55 AM	116.1	112.0
20-Oct-13	12:57 PM	112.2	110.3
20-Oct-13	1:14 PM	112.6	110.3
20-Oct-13	1:34 PM	108.9	106.9
20-Oct-13	1:49 PM	111.1	110.1
21-Oct-13	9:37 AM	111.4	110.8
21-Oct-13	10:57 AM	118.2	112.0
21-Oct-13	11:25 AM	124.5	113.5
22-Oct-13	4:17 PM	118.1	116.3
22-Oct-13	4:47 PM	117.7	113.4
22-Oct-13	5:09 PM	126.8	121.3
22-Oct-13	5:22 PM	121.9	117.4
22-Oct-13	5:37 PM	114.4	110.9
22-Oct-13	5:54 PM	109.9	107.4
22-Oct-13	6:02 PM	111.6	106.0
23-Oct-13	8:49 AM	115.4	111.3
23-Oct-13	11:01 AM	120.6	115.0

APPENDIX V (cont'd)

Data for Figure 6. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
24-Oct-13	1:15 PM	124.1	119.0
24-Oct-13	1:20 PM	128.9	122.9
24-Oct-13	1:26 PM	117.3	113.1
24-Oct-13	1:31 PM	125.4	121.4
24-Oct-13	1:36 PM	127.9	119.8
24-Oct-13	1:52 PM	120.8	115.5
24-Oct-13	1:58 PM	126.1	123.5
24-Oct-13	2:10 PM	119.2	113.4
24-Oct-13	2:45 PM	120.8	118.3
24-Oct-13	3:07 PM	116.0	114.5
25-Oct-13	12:30 PM	116.2	114.9
25-Oct-13	12:35 PM	116.0	115.0

APPENDIX V (cont'd)

Data for Figure 7. Mean bandlevels for recordings with documented, actively operating, industrial sound sources: fishing activity (triangles), dredging (squares), and other general industrial activity (stars) Red and blue represent the 30–40,000 Hz "wideband" frequency range and 400–12,500 Hz "dolphin-sensitive" band, respectively. Note that the mean bandlevel was calculated across the entire recording, and, thus, bandlevels may represent other concurrent sound sources.

Fish:

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
27-Sep-13	1:25 PM	118.2	116.9
1-Oct-13	10:32 AM	120.5	118.7
1-Oct-13	10:37 AM	118.1	116.7
1-Oct-13	10:49 AM	118.6	116.8
1-Oct-13	2:32 PM	116.6	114.0
1-Oct-13	2:47 PM	113.7	110.7
1-Oct-13	3:04 PM	114.1	112.7
2-Oct-13	10:27 AM	113.3	110.7
5-Oct-13	9:30 AM	111.1	108.0
7-Oct-13	11:02 AM	112.3	109.8
14-Oct-13	1:14 PM	108.4	107.4
15-Oct-13	8:50 PM	107.1	103.0
21-Oct-13	10:57 AM	118.2	112.0

Dredging:

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
30-Sep-13	4:13 PM	113.1	104.1
1-Oct-13	4:12 PM	123.5	114.9
1-Oct-13	4:21 PM	120.1	115.5
2-Oct-13	9:28 AM	118.2	110.3
2-Oct-13	10:01 AM	113.5	109.2
3-Oct-13	8:06 PM	118.0	112.8
3-Oct-13	8:08 PM	116.1	113.2
3-Oct-13	8:11 PM	117.2	114.8
3-Oct-13	8:20 PM	117.3	115.1
3-Oct-13	8:23 PM	118.2	116.2
3-Oct-13	8:33 PM	117.3	115.2
3-Oct-13	8:40 PM	115.6	112.3
3-Oct-13	8:45 PM	112.1	108.4

APPENDIX V (cont'd)

Data for Figure 7. (cont'd)

Dredging (cont'd):

3-Oct-13	9:01 PM	116.3	110.9
3-Oct-13	9:10 PM	113.2	106.2
3-Oct-13	9:18 PM	114.3	108.0
3-Oct-13	9:34 PM	113.8	107.7
3-Oct-13	9:42 PM	111.5	103.5
3-Oct-13	9:47 PM	111.8	106.1
3-Oct-13	9:53 PM	113.1	105.4
3-Oct-13	10:00 PM	111.6	103.7
3-Oct-13	10:06 PM	110.4	103.1
4-Oct-13	2:13 PM	119.5	114.7
5-Oct-13	8:57 AM	109.7	107.4
6-Oct-13	4:16 PM	116.1	110.2
7-Oct-13	9:32 AM	119.2	111.9
8-Oct-13	12:54 PM	110.7	104.5
8-Oct-13	1:10 PM	116.2	107.8
8-Oct-13	1:19 PM	113.2	103.8
8-Oct-13	1:28 PM	111.0	103.3
8-Oct-13	1:42 PM	119.0	110.5
8-Oct-13	1:59 PM	115.6	108.2
8-Oct-13	2:03 PM	112.7	108.5
8-Oct-13	2:27 PM	117.8	111.1
8-Oct-13	2:39 PM	119.2	116.3
8-Oct-13	8:48 PM	113.9	107.7
8-Oct-13	9:16 PM	117.9	111.4
8-Oct-13	9:44 PM	111.0	107.9
8-Oct-13	10:18 PM	111.7	103.0
8-Oct-13	11:17 PM	112.9	105.8
9-Oct-13	12:16 AM	111.1	104.6
9-Oct-13	1:19 AM	112.9	107.1
9-Oct-13	2:15 AM	114.1	103.9
9-Oct-13	3:17 AM	108.5	102.0
9-Oct-13	4:18 AM	109.4	100.5
9-Oct-13	5:52 AM	107.7	100.0
9-Oct-13	6:18 AM	111.2	106.8
11-Oct-13	9:47 AM	123.4	120.5
11-Oct-13	3:12 PM	108.9	101.0
11-Oct-13	3:29 PM	108.2	104.1
11-Oct-13	3:38 PM	107.8	103.2
11-Oct-13	3:43 PM	116.5	103.8
11-Oct-13	3:49 PM	113.2	106.0

APPENDIX V (cont'd)

Data for Figure 7. (cont'd)

Dredging (cont'd):

11-Oct-13	3:55 PM	120.6	112.1
11-Oct-13	4:01 PM	116.1	107.9
11-Oct-13	4:12 PM	114.1	102.7
11-Oct-13	4:18 PM	116.7	109.4
11-Oct-13	4:20 PM	116.7	109.1
11-Oct-13	4:26 PM	112.7	105.3
11-Oct-13	4:32 PM	110.2	101.5
11-Oct-13	4:39 PM	120.9	119.6
11-Oct-13	4:44 PM	112.3	102.6
11-Oct-13	4:50 PM	117.6	105.3
14-Oct-13	3:38 PM	127.7	123.0
21-Oct-13	12:22 PM	109.8	101.4
21-Oct-13	12:28 PM	125.4	112.2
21-Oct-13	12:54 PM	112.4	103.6
21-Oct-13	1:33 PM	117.6	113.7
21-Oct-13	1:54 PM	118.1	109.5
21-Oct-13	2:11 PM	115.2	110.2
22-Oct-13	2:24 PM	121.7	114.1
22-Oct-13	8:14 PM	110.7	108.7
22-Oct-13	8:48 PM	109.8	105.8
22-Oct-13	10:15 PM	106.1	102.9
22-Oct-13	11:20 PM	108.3	103.4
23-Oct-13	1:46 AM	109.4	104.6
23-Oct-13	2:49 AM	106.5	101.7
23-Oct-13	3:45 AM	105.5	104.7
23-Oct-13	4:46 AM	104.4	101.2

Other Industrial:

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
1-Oct-13	3:34 PM	118.4	112.1
3-Oct-13	1:27 PM	124.4	105.7
14-Oct-13	11:27 AM	141.9	138.5
22-Oct-13	5:09 PM	126.8	121.3
23-Oct-13	8:18 AM	110.6	106.2

APPENDIX V (cont'd)

Data for Figure 8. Mean bandlevels for all 440 recordings as a function of time of day. Red and blue represent the 30–40,000 Hz "wideband" frequency range and 400 –12,500 Hz"dolphin-sensitive" band, respectively.

2-hr Period	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]	Number of Recordings
00:00–01:59	108.41	103.30	7
02:00–03:59	107.48	102.70	5
04:00–05:59	106.54	100.66	5
06:00–07:59	112.26	106.99	12
08:00–09:59	117.50	113.29	29
10:00–11:59	117.72	114.07	88
12:00–13:59	118.83	114.16	109
14:00–15:59	117.40	112.93	89
16:00–17:59	118.02	113.06	43
18:00–19:59	110.08	107.16	8
20:00–21:59	113.21	108.46	33
22:00–23:59	109.75	104.82	12

APPENDIX V (cont'd)

Data for Figure 9. Mean bandlevels for all 291 recordings. Bandlevels were analyzed in terms of both the 30–40,000 Hz "wideband" frequency range (red) and 400–12,500 Hz "dolphin-sensitive" band (blue) and then averaged over the duration of each recording.

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
3/3/2014	9:31 AM	122.9	117
3/3/2014	10:12 AM	117.9	113.1
3/3/2014	10:46 AM	141.1	136.8
3/3/2014	10:56 AM	131	126.1
3/3/2014	11:05 AM	135.6	129
3/3/2014	11:20 AM	125	118.8
3/3/2014	12:12 PM	119.5	107
3/3/2014	12:42 PM	126.1	121.1
3/3/2014	1:14 PM	116.3	112
3/3/2014	2:20 PM	117.1	112.4
3/3/2014	3:12 PM	111.9	108.4
3/3/2014	3:50 PM	117.9	115.4
3/3/2014	4:20 PM	116.6	113
4/3/2014	9:34 AM	117.6	109.6
4/3/2014	10:03 AM	118.8	115
4/3/2014	10:35 AM	122.5	115.4
4/3/2014	1:03 PM	123.2	118.8
4/3/2014	3:06 PM	117	112
5/3/2014	9:50 AM	109.9	108.8
5/3/2014	10:54 AM	121.9	117
5/3/2014	11:48 AM	116.1	112
5/3/2014	12:31 PM	111.5	107.4
5/3/2014	1:01 PM	116.2	112.8
5/3/2014	1:31 PM	111.6	109.6
5/3/2014	2:26 PM	112.8	111
5/3/2014	3:32 PM	117.5	111
7/3/2014	10:52 AM	126.8	121.6
7/3/2014	11:11 AM	130.3	123
7/3/2014	11:24 AM	121.2	114.2
7/3/2014	11:44 AM	120	107.3
7/3/2014	11:58 AM	114.3	106.4
7/3/2014	1:49 PM	123.9	115.7
7/3/2014	2:41 PM	119.4	114
7/3/2014	3:38 PM	126.4	122.1

APPENDIX V (cont'd)

Data for Figure 9. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
7/3/2014	3:52 PM	123.3	119
7/3/2014	4:05 PM	123.5	116.6
7/3/2014	4:17 PM	121.8	116.2
7/3/2014	4:30 PM	115	108.1
7/3/2014	4:40 PM	114	108
10/3/2014	10:28 AM	121.9	115
10/3/2014	10:41 AM	129.5	123.9
10/3/2014	10:53 AM	118.3	111.9
10/3/2014	11:11 AM	125.2	119.1
10/3/2014	11:26 AM	119.3	112
10/3/2014	11:32 AM	114.6	108.2
10/3/2014	12:34 PM	129.9	119.1
10/3/2014	2:32 PM	115.3	114.5
10/3/2014	3:06 PM	120.8	115.4
10/3/2014	3:25 PM	121.6	117.6
10/3/2014	4:01 PM	127.3	121.6
10/3/2014	4:11 PM	126.5	120.3
11/3/2014	9:04 AM	111.5	108.2
11/3/2014	10:02 AM	121.2	114.2
11/3/2014	11:15 AM	147.6	144.9
11/3/2014	11:32 AM	139.6	134
11/3/2014	12:01 PM	113.5	106.4
11/3/2014	12:34 PM	120.2	112
11/3/2014	1:19 PM	124.6	115.9
11/3/2014	2:29 PM	135.2	132.4
11/3/2014	2:39 PM	140.5	137.7
11/3/2014	2:48 PM	142.2	140.4
11/3/2014	3:24 PM	136.2	133.2
12/3/2014	9:43 AM	126.4	122
12/3/2014	10:41 AM	112.3	109.7
12/3/2014	11:41 AM	116.4	113.9
12/3/2014	11:47 AM	115.7	112.4
12/3/2014	12:01 PM	115.2	109.5
12/3/2014	12:06 PM	117.9	113.2
12/3/2014	12:23 PM	115.5	112.2
12/3/2014	12:29 PM	114.6	112.5

APPENDIX V (cont'd)

Data for Figure 9. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
12/3/2014	12:41 PM	113.6	110.1
12/3/2014	3:12 PM	124.8	119.8
12/3/2014	3:23 PM	124.6	118.5
12/3/2014	3:33 PM	118	110.8
12/3/2014	3:48 PM	130.1	122
12/3/2014	3:58 PM	114.9	106.5
13/3/2014	8:47 AM	120.8	117.7
13/3/2014	9:51 AM	117.2	111.3
13/3/2014	11:02 AM	112.8	106.3
13/3/2014	11:23 AM	126.3	120.4
13/3/2014	11:44 AM	119.5	115
13/3/2014	12:00 PM	112.6	106
13/3/2014	1:04 PM	107.1	104.5
13/3/2014	1:51 PM	118	112.8
13/3/2014	3:08 PM	121.6	115.1
17/3/2014	11:30 AM	128.8	123.9
17/3/2014	12:11 PM	125.1	117.4
17/3/2014	12:22 PM	124.2	117.1
17/3/2014	12:27 PM	127.9	118.1
17/3/2014	12:40 PM	134.7	128.3
17/3/2014	12:52 PM	123.9	115.8
17/3/2014	1:06 PM	124.9	114.7
17/3/2014	1:22 PM	114.7	109.7
17/3/2014	1:39 PM	117.7	112.6
17/3/2014	1:55 PM	117.4	111.1
17/3/2014	2:10 PM	115.3	108.8
17/3/2014	3:15 PM	129.3	122.8
17/3/2014	3:41 PM	120	111.7
17/3/2014	4:34 PM	109.1	107.1
17/3/2014	4:57 PM	128.8	126
18/3/2014	9:49 AM	116.4	110.9
18/3/2014	10:47 AM	130.4	123.9
18/3/2014	11:47 AM	117.1	112.5
18/3/2014	12:09 PM	125.3	102.3
18/3/2014	12:27 PM	118.6	112.5
18/3/2014	1:12 PM	121.8	116.4

APPENDIX V (cont'd)

Data for Figure 9. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
18/3/2014	2:12 PM	121.7	117
19/3/2014	9:22 AM	147.3	145.3
19/3/2014	9:43 AM	130.1	125.3
19/3/2014	10:09 AM	118.8	108.3
19/3/2014	11:22 AM	127.9	120.5
19/3/2014	12:37 PM	129.1	125.5
19/3/2014	1:49 PM	120	114.5
19/3/2014	2:43 PM	113.4	105.9
19/3/2014	3:46 PM	121.7	117.3
20/3/2014	1:54 PM	135.4	129.4
20/3/2014	2:11 PM	124.6	118.7
20/3/2014	4:05 PM	118.6	113.4
20/3/2014	4:14 PM	120.8	115.7
20/3/2014	5:07 PM	116	111.3
20/3/2014	5:17 PM	132.3	121.8
20/3/2014	5:28 PM	126.5	114.6
20/3/2014	5:41 PM	135.6	129.8
20/3/2014	5:50 PM	138.8	133.3
20/3/2014	6:00 PM	142	139.2
20/3/2014	6:10 PM	145.3	139.5
20/3/2014	8:37 PM	119.2	111.1
20/3/2014	9:04 PM	110.6	105.2
20/3/2014	10:06 PM	114.1	108.9
20/3/2014	10:29 PM	112.6	107
20/3/2014	11:05 PM	106.4	102.7
20/3/2014	11:30 PM	114.2	107.1
21/3/2014	12:09 AM	108.4	102.9
21/3/2014	1:03 AM	113.2	106.6
21/3/2014	2:01 AM	107.9	104.5
21/3/2014	3:02 AM	114.4	108.6
21/3/2014	3:58 AM	106.1	102.9
21/3/2014	5:05 AM	106.8	100.4
21/3/2014	6:01 AM	103.1	99
21/3/2014	7:01 AM	116.5	109.8
21/3/2014	8:30 AM	115.8	109.3
21/3/2014	10:43 AM	133.5	129.8

APPENDIX V (cont'd)

Data for Figure 9. (cont'd)

Date	Time	Bandlevel	Bandlevel
21/3/2014	10:54 AM	130	126.7
21/3/2014	11:05 AM	123.6	119.3
21/3/2014	11:16 AM	120.4	115.4
21/3/2014	11:27 AM	113.1	108.3
21/3/2014	2:13 PM	134.6	129.4
21/3/2014	2:24 PM	133.2	128
21/3/2014	2:34 PM	117.1	111.7
21/3/2014	2:45 PM	113.4	108.5
24/3/2014	9:42 AM	126.6	121.5
24/3/2014	10:07 AM	121.6	113.2
24/3/2014	11:13 AM	138.6	132.4
24/3/2014	11:21 AM	131.5	121.9
24/3/2014	11:29 AM	134.2	120.6
24/3/2014	2:04 PM	129.9	125.8
25/3/2014	10:54 AM	122.4	116.7
25/3/2014	11:08 AM	118.5	112.3
25/3/2014	11:34 AM	116.5	110.5
25/3/2014	1:20 PM	118.5	114.8
25/3/2014	2:06 PM	112.5	109.7
25/3/2014	3:13 PM	119	111.1
25/3/2014	3:25 PM	118.1	112.8
25/3/2014	3:35 PM	124.2	117.5
25/3/2014	3:47 PM	121.7	114.3
26/3/2014	9:57 AM	127.2	119.3
26/3/2014	10:13 AM	131.8	125.6
26/3/2014	10:19 AM	131.6	123.8
26/3/2014	10:26 AM	127.9	119.3
26/3/2014	12:18 PM	123.6	121.3
26/3/2014	1:14 PM	116.7	110.5
26/3/2014	2:46 PM	114.7	112.1
26/3/2014	3:19 PM	118.2	113
26/3/2014	3:38 PM	126.7	119.3
26/3/2014	4:00 PM	122.2	121.6
27/3/2014	9:43 AM	122.9	119.6
27/3/2014	10:08 AM	114.9	106.6
27/3/2014	12:58 PM	130.3	125.3
27/3/2014	2:48 PM	110.7	106.5
27/3/2014	4:28 PM	121.9	121
28/3/2014	10:15 AM	114.4	109.6
28/3/2014	11:28 AM	132.9	129

APPENDIX V (cont'd)

Data for Figure 9. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
28/3/2014	12:35 PM	128.8	122.9
28/3/2014	1:50 PM	124.2	118.5
28/3/2014	2:22 PM	124.8	116.9
28/3/2014	2:33 PM	123.8	118
28/3/2014	2:51 PM	121.5	115.6
28/3/2014	2:59 PM	135.4	125.9
1/4/2014	10:05 AM	123	117.1
1/4/2014	10:29 AM	115.7	109
1/4/2014	2:07 PM	114.2	106.8
2/4/2014	3:09 PM	128.6	119
2/4/2014	3:16 PM	129.7	118.6
2/4/2014	3:24 PM	124.9	113.5
2/4/2014	3:40 PM	121	116
2/4/2014	3:48 PM	121.5	114.2
2/4/2014	3:56 PM	122.6	114.6
4/4/2014	1:57 PM	118.7	113.5
4/4/2014	2:01 PM	132.4	130
4/4/2014	2:15 PM	130.7	126.1
4/4/2014	2:24 PM	126.9	121.7
4/4/2014	2:37 PM	133.4	130.3
4/4/2014	2:48 PM	130.6	128.2
4/4/2014	2:58 PM	125.2	121
8/4/2014	2:24 PM	131.5	124.4
8/4/2014	2:32 PM	127.1	117.3
8/4/2014	2:44 PM	128.2	124.2
8/4/2014	2:52 PM	125.6	121.2
8/4/2014	2:59 PM	123.3	119.2
8/4/2014	3:11 PM	121.6	116.7
9/4/2014	11:24 AM	126.5	123.2
9/4/2014	11:40 AM	124.8	121.5
9/4/2014	11:46 AM	125.9	120
9/4/2014	11:59 AM	123.6	118.7
9/4/2014	12:05 PM	122.7	118.1
9/4/2014	12:22 PM	121.4	117.9
9/4/2014	12:35 PM	130.1	125.3
9/4/2014	12:54 PM	124.1	121.3

APPENDIX V (cont'd)

Data for Figure 9. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
9/4/2014	3:01 PM	136.5	128.8
9/4/2014	3:07 PM	131.9	126.5
9/4/2014	3:26 PM	155.6	148
9/4/2014	3:39 PM	136.2	131.6
9/4/2014	3:45 PM	130.5	125.7
9/4/2014	3:54 PM	129.6	124.8
9/4/2014	4:00 PM	132.6	126.6
10/4/2014	2:10 PM	122.1	118
10/4/2014	2:25 PM	134.3	129.4
10/4/2014	2:41 PM	125.4	123.5
10/4/2014	4:00 PM	119.9	115.1
10/4/2014	4:16 PM	143.1	138.9
10/4/2014	4:31 PM	134.6	131.4
11/4/2014	2:42 PM	132.1	124.6
11/4/2014	3:21 PM	124.4	117.6
11/4/2014	3:27 PM	136.8	129.2
11/4/2014	3:39 PM	125.3	118.6
11/4/2014	3:46 PM	132.6	127.3
14/4/2014	1:42 PM	128.5	120.5
14/4/2014	1:52 PM	124.7	116
14/4/2014	1:59 PM	125.3	115.9
14/4/2014	2:11 PM	130.9	123.3
14/4/2014	2:24 PM	127.4	120.6
15/4/2014	3:24 PM	129.6	124.5
15/4/2014	3:36 PM	118.9	114
15/4/2014	3:47 PM	122.5	119.3
23/4/2014	10:54 AM	127.5	118.3
23/4/2014	11:04 AM	125.4	116.2
23/4/2014	11:15 AM	123.6	115.6
23/4/2014	11:28 AM	125	116.6
23/4/2014	11:38 AM	126.4	119.5
23/4/2014	11:48 AM	122	115.6
23/4/2014	2:11 PM	117.7	111.9
23/4/2014	2:23 PM	129.8	121.1
23/4/2014	2:37 PM	120.8	117
23/4/2014	2:44 PM	122.5	118.1

APPENDIX V (cont'd)

Data for Figure 9. (cont'd)

Date	Time	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]
23/4/2014	3:10 PM	124.4	115.7
23/4/2014	3:17 PM	120.2	114.3
23/4/2014	3:30 PM	122.4	116.8
23/4/2014	3:37 PM	120.5	115.9
23/4/2014	3:49 PM	118.3	114.3
23/4/2014	3:58 PM	117.7	115.3
24/4/2014	5:36 PM	120.9	119
24/4/2014	5:42 PM	121.8	119.7
24/4/2014	5:55 PM	127.7	126.4
24/4/2014	6:02 PM	127.7	126.3
24/4/2014	6:16 PM	138.6	134.2
24/4/2014	9:48 PM	110.7	106
24/4/2014	10:22 PM	112.8	105.7
24/4/2014	10:51 PM	110.1	103.7
24/4/2014	11:25 PM	105.7	100.7
24/4/2014	11:59 PM	105.7	101.5
25/4/2014	1:03 AM	108.8	102.1
25/4/2014	2:04 AM	112.8	104.9
25/4/2014	3:01 AM	105.4	100.3
25/4/2014	4:03 AM	103.5	100.9
25/4/2014	5:04 AM	107.8	103.1
25/4/2014	6:03 AM	107.2	104.8
25/4/2014	7:40 AM	110.1	104.2
25/4/2014	10:20 AM	120.5	113.9
25/4/2014	10:27 AM	129.3	117.2
25/4/2014	10:46 AM	135.5	127.9
25/4/2014	11:16 AM	129.3	123
28/4/2014	12:24 PM	111.6	103.4
28/4/2014	12:36 PM	117.9	107.9
28/4/2014	12:44 PM	111.3	102.7
28/4/2014	12:57 PM	120.6	115.2
28/4/2014	1:03 PM	122.6	112.5
28/4/2014	1:06 PM	138.3	134.7
28/4/2014	2:09 PM	125.1	121
28/4/2014	2:11 PM	127.4	123.9
28/4/2014	2:18 PM	126.8	123.1
28/4/2014	2:20 PM	129.1	124.3

APPENDIX V (cont'd)

Data for Figure 10. Received sound levels in relation to wind speed: wind speeds measured during each recording (top plot), mean bandlevels for each recording (middle plot), and mean bandlevels as a function of wind speed (bottom plot).

Date	Time	Wind Speed [m/s]	Mean Bandlevel (Wideband) [dB re uPa]
3/3/2014	9:31 AM	4.8	122.9
3/3/2014	10:12 AM	5.5	117.9
3/3/2014	10:46 AM	1.4	141.1
3/3/2014	10:56 AM	2.7	131.0
3/3/2014	11:05 AM	1.9	135.6
3/3/2014	11:20 AM	1.4	125.0
3/3/2014	12:12 PM	8.3	119.5
3/3/2014	12:42 PM	5.7	126.1
3/3/2014	1:14 PM	9.2	116.3
3/3/2014	2:20 PM	4.5	117.1
3/3/2014	3:12 PM	9.5	111.9
3/3/2014	3:50 PM	8.2	117.9
3/3/2014	4:20 PM	6.7	116.6
4/3/2014	9:34 AM	4.0	117.6
4/3/2014	10:03 AM	2.6	118.8
4/3/2014	10:35 AM	6.1	122.5
4/3/2014	1:03 PM	3.4	123.2
4/3/2014	3:06 PM	1.0	117.0
5/3/2014	9:50 AM	0.9	109.9
5/3/2014	10:54 AM	1.5	121.9
5/3/2014	11:48 AM	2.2	116.1
5/3/2014	12:31 PM	0.7	111.5
5/3/2014	1:01 PM	1.0	116.2
5/3/2014	1:31 PM	4.7	111.6
5/3/2014	2:26 PM	3.0	112.8
5/3/2014	3:32 PM	2.7	117.5
7/3/2014	10:52 AM	3.8	126.8
7/3/2014	11:11 AM	1.0	130.3
7/3/2014	11:24 AM	2.7	121.2
7/3/2014	11:44 AM	3.8	120.0
7/3/2014	11:58 AM	1.5	114.3
7/3/2014	1:49 PM	4.2	123.9
7/3/2014	2:41 PM	3.8	119.4

APPENDIX V (cont'd)

Data for Figure 10. (cont'd)

Date	Time	Wind Speed [m/s]	Mean Bandlevel (Wideband) [dB re uPa]
7/3/2014	3:38 PM	2.1	126.4
7/3/2014	3:52 PM	2.3	123.3
7/3/2014	4:05 PM	0.5	123.5
7/3/2014	4:17 PM	2.6	121.8
7/3/2014	4:30 PM	1.9	115
7/3/2014	4:40 PM	7	114
10/3/2014	10:28 AM	3.3	121.9
10/3/2014	10:41 AM	3	129.5
10/3/2014	10:53 AM	4.3	118.3
10/3/2014	11:11 AM	5.2	125.2
10/3/2014	11:26 AM	4	119.3
10/3/2014	11:32 AM	4.5	114.6
10/3/2014	12:34 PM	3.7	129.9
10/3/2014	2:32 PM	2.8	115.3
10/3/2014	3:06 PM	3.1	120.8
10/3/2014	3:25 PM	2.1	121.6
10/3/2014	4:01 PM	1.6	127.3
10/3/2014	4:11 PM	2.4	126.5
11/3/2014	9:04 AM	3.3	111.5
11/3/2014	10:02 AM	4.8	121.2
11/3/2014	11:15 AM	5.5	147.6
11/3/2014	11:32 AM	4.2	139.6
11/3/2014	12:01 PM	4.1	113.5
11/3/2014	12:34 PM	8.4	120.2
11/3/2014	1:19 PM	4.7	124.6
11/3/2014	2:29 PM	2.3	135.2
11/3/2014	2:39 PM	2.2	140.5
11/3/2014	2:48 PM	2.6	142.2
11/3/2014	3:24 PM	6.5	136.2
12/3/2014	9:43 AM	3.3	126.4
12/3/2014	10:41 AM	4.8	112.3
12/3/2014	11:41 AM	0.9	116.4
12/3/2014	11:47 AM	0.6	115.7
12/3/2014	12:01 PM	0.5	115.2
12/3/2014	12:06 PM	0.4	117.9
12/3/2014	12:23 PM	3.7	115.5

APPENDIX V (cont'd)

Data for Figure 10. (cont'd)

Date	Time	Wind Speed [m/s]	Mean Bandlevel (Wideband) [dB re uPa]
12/3/2014	12:29 PM	3.6	114.6
12/3/2014	12:41 PM	4	113.6
12/3/2014	3:12 PM	3	124.8
12/3/2014	3:23 PM	4.3	124.6
12/3/2014	3:33 PM	6.7	118
12/3/2014	3:48 PM	6.4	130.1
12/3/2014	3:58 PM	6.1	114.9
13/3/2014	8:47 AM	0.8	120.8
13/3/2014	9:51 AM	4.4	117.2
13/3/2014	11:02 AM	1.9	112.8
13/3/2014	11:23 AM	0.2	126.3
13/3/2014	11:44 AM	2.9	119.5
13/3/2014	12:00 PM	3.1	112.6
13/3/2014	1:04 PM	3.1	107.1
13/3/2014	1:51 PM	0.5	118
13/3/2014	3:08 PM	5.4	121.6
17/3/2014	11:30 AM	0.4	128.8
17/3/2014	12:11 PM	0.5	125.1
17/3/2014	12:22 PM	0.4	124.2
17/3/2014	12:27 PM	0.5	127.9
17/3/2014	12:40 PM	0.8	134.7
17/3/2014	12:52 PM	1.2	123.9
17/3/2014	1:06 PM	0.6	124.9
17/3/2014	1:22 PM	1.2	114.7
17/3/2014	1:39 PM	1.3	117.7
17/3/2014	1:55 PM	1.8	117.4
17/3/2014	2:10 PM	1.5	115.3
17/3/2014	3:15 PM	1.3	129.3
17/3/2014	3:41 PM	2	120
17/3/2014	4:34 PM	1	109.1
17/3/2014	4:57 PM	2.2	128.8
18/3/2014	9:49 AM	1	116.4
18/3/2014	10:47 AM	1.9	130.4
18/3/2014	11:47 AM	3.3	117.1
18/3/2014	12:09 PM	3.4	125.3
18/3/2014	12:27 PM	2.5	118.6

APPENDIX V (cont'd)

Data for Figure 10. (cont'd)

Date	Time	Wind Speed [m/s]	Mean Bandlevel (Wideband) [dB re uPa]
18/3/2014	1:12 PM	2.1	121.8
18/3/2014	2:12 PM	4.1	121.7
19/3/2014	9:22 AM	2	147.3
19/3/2014	9:43 AM	1.5	130.1
19/3/2014	10:09 AM	1	118.8
19/3/2014	11:22 AM	1.8	127.9
19/3/2014	12:37 PM	1.6	129.1
19/3/2014	1:49 PM	1.1	120
19/3/2014	2:43 PM	1.5	113.4
19/3/2014	3:46 PM	2.4	121.7
20/3/2014	1:54 PM	0.8	135.4
20/3/2014	2:11 PM	2.6	124.6
20/3/2014	4:05 PM	1.2	118.6
20/3/2014	4:14 PM	1.4	120.8
20/3/2014	5:07 PM	1.6	116
20/3/2014	5:17 PM	2.1	132.3
20/3/2014	5:28 PM	0.9	126.5
20/3/2014	5:41 PM	1.4	135.6
20/3/2014	5:50 PM	2.6	138.8
20/3/2014	6:00 PM	2.9	142
20/3/2014	6:10 PM	3.4	145.3
20/3/2014	8:37 PM	3	119.2
20/3/2014	9:04 PM	1.3	110.6
20/3/2014	10:06 PM	3.7	114.1
20/3/2014	10:29 PM	5	112.6
20/3/2014	11:05 PM	4.7	106.4
20/3/2014	11:30 PM	3.4	114.2
21/3/2014	12:09 AM	2.7	108.4
21/3/2014	1:03 AM	5.6	113.2
21/3/2014	2:01 AM	3.5	107.9
21/3/2014	3:02 AM	3.5	114.4
21/3/2014	3:58 AM	3.6	106.1
21/3/2014	5:05 AM	2.6	106.8
21/3/2014	6:01 AM	3	103.1
21/3/2014	7:01 AM	3.4	116.5
21/3/2014	8:30 AM	3.8	115.8

APPENDIX V (cont'd)

Data for Figure 10. (cont'd)

Date	Time	Wind Speed [m/s]	Mean Bandlevel (Wideband) [dB re uPa]
21/3/2014	10:43 AM	1	133.5
21/3/2014	10:54 AM	1.8	130
21/3/2014	11:05 AM	4.3	123.6
21/3/2014	11:16 AM	1.5	120.4
21/3/2014	11:27 AM	2.3	113.1
21/3/2014	2:13 PM	1.2	134.6
21/3/2014	2:24 PM	2.9	133.2
21/3/2014	2:34 PM	2.5	117.1
21/3/2014	2:45 PM	2.6	113.4
24/3/2014	9:42 AM	1.1	126.6
24/3/2014	10:07 AM	2.9	121.6
24/3/2014	11:13 AM	3.2	138.6
24/3/2014	11:21 AM	5.1	131.5
24/3/2014	11:29 AM	4.5	134.2
24/3/2014	2:04 PM	0.5	129.9
25/3/2014	10:54 AM	1.1	122.4
25/3/2014	11:08 AM	1.3	118.5
25/3/2014	11:34 AM	1.3	116.5
25/3/2014	1:20 PM	2.3	118.5
25/3/2014	2:06 PM	1.8	112.5
25/3/2014	3:13 PM	1.3	119
25/3/2014	3:25 PM	1.1	118.1
25/3/2014	3:35 PM	1.7	124.2
25/3/2014	3:47 PM	1	121.7
26/3/2014	9:57 AM	0.6	127.2
26/3/2014	10:13 AM	1.4	131.8
26/3/2014	10:19 AM	0.9	131.6
26/3/2014	10:26 AM	1.1	127.9
26/3/2014	12:18 PM	3.5	123.6
26/3/2014	1:14 PM	3	116.7
26/3/2014	2:46 PM	1.6	114.7
26/3/2014	3:19 PM	0.9	118.2
26/3/2014	3:38 PM	1.5	126.7
26/3/2014	4:00 PM	1	122.2
27/3/2014	9:43 AM	1.1	122.9
27/3/2014	10:08 AM	0.6	114.9
27/3/2014	12:58 PM	1.4	130.3

APPENDIX V (cont'd)

Data for Figure 10. (cont'd)

Date	Time	Wind Speed [m/s]	Mean Bandlevel (Wideband) [dB re uPa]
27/3/2014	2:48 PM	0.6	110.7
27/3/2014	4:28 PM	5	121.9
28/3/2014	10:15 AM	4.1	114.4
28/3/2014	11:28 AM	3.6	132.9
28/3/2014	12:35 PM	4	128.8
28/3/2014	1:50 PM	2.6	124.2
28/3/2014	2:22 PM	1.7	124.8
28/3/2014	2:33 PM	0.6	123.8
28/3/2014	2:51 PM	1.5	121.5
28/3/2014	2:59 PM	2	135.4
1/4/2014	10:05 AM	2.4	123
1/4/2014	10:29 AM	1.8	115.7
1/4/2014	2:07 PM	1	114.2
2/4/2014	3:09 PM	0.9	128.6
2/4/2014	3:16 PM	1.3	129.7
2/4/2014	3:24 PM	3.4	124.9
2/4/2014	3:40 PM	2.3	121
2/4/2014	3:48 PM	2.1	121.5
2/4/2014	3:56 PM	1.9	122.6
4/4/2014	1:57 PM	5.5	118.7
4/4/2014	2:01 PM	2.9	132.4
4/4/2014	2:15 PM	4.1	130.7
4/4/2014	2:24 PM	4.8	126.9
4/4/2014	2:37 PM	5	133.4
4/4/2014	2:48 PM	4.3	130.6
4/4/2014	2:58 PM	4.2	125.2
8/4/2014	2:24 PM	1.1	131.5
8/4/2014	2:32 PM	1.5	127.1
8/4/2014	2:44 PM	1.1	128.2
8/4/2014	2:52 PM	0.8	125.6
8/4/2014	2:59 PM	1.1	123.3
8/4/2014	3:11 PM	1.9	121.6
9/4/2014	11:24 AM	1.4	126.5
9/4/2014	11:40 AM	2.8	124.8
9/4/2014	11:46 AM	1.7	125.9
9/4/2014	11:59 AM	2	123.6
9/4/2014	12:05 PM	2.5	122.7

APPENDIX V (cont'd)

Data for Figure 10. (cont'd)

Date	Time	Wind Speed [m/s]	Mean Bandlevel (Wideband) [dB re uPa]
9/4/2014	12:22 PM	1	121.4
9/4/2014	12:35 PM	1.6	130.1
9/4/2014	12:54 PM	2.8	124.1
9/4/2014	3:01 PM	1.5	136.5
9/4/2014	3:07 PM	1.6	131.9
9/4/2014	3:26 PM	0.4	155.6
9/4/2014	3:39 PM	1	136.2
9/4/2014	3:45 PM	2.6	130.5
9/4/2014	3:54 PM	3.6	129.6
9/4/2014	4:00 PM	5.7	132.6
10/4/2014	2:10 PM	2.5	122.1
10/4/2014	2:25 PM	1.8	134.3
10/4/2014	2:41 PM	3.9	125.4
10/4/2014	4:00 PM	2.9	119.9
10/4/2014	4:16 PM	3.5	143.1
10/4/2014	4:31 PM	3.3	134.6
11/4/2014	2:42 PM	1.1	132.1
11/4/2014	3:21 PM	2	124.4
11/4/2014	3:27 PM	3.4	136.8
11/4/2014	3:39 PM	2.9	125.3
11/4/2014	3:46 PM	3	132.6
14/4/2014	1:42 PM	0.9	128.5
14/4/2014	1:52 PM	1	124.7
14/4/2014	1:59 PM	1.4	125.3
14/4/2014	2:11 PM	2.5	130.9
14/4/2014	2:24 PM	0.9	127.4
15/4/2014	3:24 PM	3.4	129.6
15/4/2014	3:36 PM	4.8	118.9
15/4/2014	3:47 PM	4.7	122.5
23/4/2014	10:54 AM	4.1	127.5
23/4/2014	11:04 AM	5.4	125.4
23/4/2014	11:15 AM	6.1	123.6
23/4/2014	11:28 AM	4.3	125
23/4/2014	11:38 AM	6.6	126.4
23/4/2014	11:48 AM	8.2	122
23/4/2014	2:11 PM	2	117.7
23/4/2014	2:23 PM	2.1	129.8

APPENDIX V (cont'd)

Data for Figure 10. (cont'd)

Date	Time	Wind Speed [m/s]	Mean Bandlevel (Wideband) [dB re uPa]
23/4/2014	3:10 PM	3.8	124.4
23/4/2014	3:17 PM	2.9	120.2
23/4/2014	3:30 PM	3.1	122.4
23/4/2014	3:37 PM	1.8	120.5
23/4/2014	3:49 PM	2.3	118.3
23/4/2014	3:58 PM	1	117.7
24/4/2014	5:36 PM	2.6	120.9
24/4/2014	5:42 PM	4.1	121.8
24/4/2014	5:55 PM	5.9	127.7
24/4/2014	6:02 PM	5.4	127.7
24/4/2014	6:16 PM	5.5	138.6
24/4/2014	9:48 PM	5.8	110.7
24/4/2014	10:22 PM	4.8	112.8
24/4/2014	10:51 PM	4.7	110.1
24/4/2014	11:25 PM	3.6	105.7
24/4/2014	11:59 PM	7.6	105.7
25/4/2014	1:03 AM	3.7	108.8
25/4/2014	2:04 AM	4.8	112.8
25/4/2014	3:01 AM	2.5	105.4
25/4/2014	4:03 AM	4.7	103.5
25/4/2014	5:04 AM	2.1	107.8
25/4/2014	6:03 AM	2.5	107.2
25/4/2014	7:40 AM	3.6	110.1
25/4/2014	10:20 AM	5.4	120.5
25/4/2014	10:27 AM	6.3	129.3
25/4/2014	10:46 AM	5.4	135.5
25/4/2014	11:16 AM	2.5	129.3
28/4/2014	12:24 PM	1	111.6
28/4/2014	12:36 PM	1.8	117.9
28/4/2014	12:44 PM	2	111.3
28/4/2014	12:57 PM	2.2	120.6
28/4/2014	1:03 PM	3.1	122.6
28/4/2014	1:06 PM	0.4	138.3
28/4/2014	2:09 PM	2.1	125.1
28/4/2014	2:11 PM	1.9	127.4
28/4/2014	2:18 PM	1.9	126.8
28/4/2014	2:20 PM	2	129.1

APPENDIX V (cont'd)

Data for Figure 11. Received sound levels in relation to tidal height: tidal heights measured throughout the study (top plot), mean bandlevels for each recording (middle plot), and mean bandlevels as a function of tidal height (bottom plot).

Date	Time	Tidal Height [m]	Mean Bandlevel (Wideband) [dB re uPa]
3/3/2014	9:31 AM	1.3	122.9
3/3/2014	10:12 AM	1.0	117.9
3/3/2014	10:46 AM	0.8	141.1
3/3/2014	10:56 AM	0.8	131.0
3/3/2014	11:05 AM	0.7	135.6
3/3/2014	11:20 AM	0.7	125.0
3/3/2014	12:12 PM	0.5	119.5
3/3/2014	12:42 PM	0.5	126.1
3/3/2014	1:14 PM	0.6	116.3
3/3/2014	2:20 PM	0.8	117.1
3/3/2014	3:12 PM	1.0	111.9
3/3/2014	3:50 PM	1.2	117.9
3/3/2014	4:20 PM	1.4	116.6
4/3/2014	9:34 AM	1.5	117.6
4/3/2014	10:03 AM	1.4	118.8
4/3/2014	10:35 AM	1.2	122.5
4/3/2014	1:03 PM	0.6	123.2
4/3/2014	3:06 PM	1.0	117.0
5/3/2014	9:50 AM	1.6	109.9
5/3/2014	10:54 AM	1.3	121.9
5/3/2014	11:48 AM	1.0	116.1
5/3/2014	12:31 PM	0.9	111.5
5/3/2014	1:01 PM	0.8	116.2
5/3/2014	1:31 PM	0.8	111.6
5/3/2014	2:26 PM	0.8	112.8
5/3/2014	3:32 PM	1.1	117.5
7/3/2014	10:52 AM	1.4	126.8
7/3/2014	11:11 AM	1.4	130.3
7/3/2014	11:24 AM	1.3	121.2
7/3/2014	11:44 AM	1.3	120.0
7/3/2014	11:58 AM	1.3	114.3
7/3/2014	1:49 PM	1.1	123.9
7/3/2014	2:41 PM	1.0	119.4

APPENDIX V (cont'd)

Data for Figure 11. (cont'd)

Date	Time	Tidal Height [m]	Mean Bandlevel (Wideband) [dB re uPa]
7/3/2014	3:38 PM	1.1	126.4
7/3/2014	3:52 PM	1.1	123.3
7/3/2014	4:05 PM	1.2	123.5
7/3/2014	4:17 PM	1.2	121.8
7/3/2014	4:30 PM	1.2	115
7/3/2014	4:40 PM	1.3	114
10/3/2014	10:28 AM	0.9	121.9
10/3/2014	10:41 AM	0.9	129.5
10/3/2014	10:53 AM	1.0	118.3
10/3/2014	11:11 AM	1.0	125.2
10/3/2014	11:26 AM	1.0	119.3
10/3/2014	11:32 AM	1.0	114.6
10/3/2014	12:34 PM	1.1	129.9
10/3/2014	2:32 PM	1.2	115.3
10/3/2014	3:06 PM	1.2	120.8
10/3/2014	3:25 PM	1.3	121.6
10/3/2014	4:01 PM	1.3	127.3
10/3/2014	4:11 PM	1.3	126.5
11/3/2014	9:04 AM	0.8	111.5
11/3/2014	10:02 AM	0.8	121.2
11/3/2014	11:15 AM	0.8	147.6
11/3/2014	11:32 AM	0.9	139.6
11/3/2014	12:01 PM	0.9	113.5
11/3/2014	12:34 PM	0.9	120.2
11/3/2014	1:19 PM	1.0	124.6
11/3/2014	2:29 PM	1.1	135.2
11/3/2014	2:39 PM	1.1	140.5
11/3/2014	2:48 PM	1.1	142.2
11/3/2014	3:24 PM	1.1	136.2
12/3/2014	9:43 AM	0.7	126.4
12/3/2014	10:41 AM	0.7	112.3
12/3/2014	11:41 AM	0.8	116.4
12/3/2014	11:47 AM	0.8	115.7
12/3/2014	12:01 PM	0.9	115.2
12/3/2014	12:06 PM	0.9	117.9
12/3/2014	12:23 PM	0.9	115.5

APPENDIX V (cont'd)

Data for Figure 11. (cont'd)

Date	Time	Tidal Height [m]	Mean Bandlevel (Wideband) [dB re uPa]
12/3/2014	12:29 PM	0.9	114.6
12/3/2014	12:41 PM	0.9	113.6
12/3/2014	3:12 PM	1.2	124.8
12/3/2014	3:23 PM	1.2	124.6
12/3/2014	3:33 PM	1.3	118
12/3/2014	3:48 PM	1.3	130.1
12/3/2014	3:58 PM	1.3	114.9
13/3/2014	8:47 AM	0.7	120.8
13/3/2014	9:51 AM	0.6	117.2
13/3/2014	11:02 AM	0.7	112.8
13/3/2014	11:23 AM	0.7	126.3
13/3/2014	11:44 AM	0.8	119.5
13/3/2014	12:00 PM	0.8	112.6
13/3/2014	1:04 PM	1.0	107.1
13/3/2014	1:51 PM	1.1	118
13/3/2014	3:08 PM	1.3	121.6
17/3/2014	11:30 AM	0.6	128.8
17/3/2014	12:11 PM	0.7	125.1
17/3/2014	12:22 PM	0.8	124.2
17/3/2014	12:27 PM	0.8	127.9
17/3/2014	12:40 PM	0.9	134.7
17/3/2014	12:52 PM	0.9	123.9
17/3/2014	1:06 PM	1.0	124.9
17/3/2014	1:22 PM	1.0	114.7
17/3/2014	1:39 PM	1.1	117.7
17/3/2014	1:55 PM	1.2	117.4
17/3/2014	2:10 PM	1.2	115.3
17/3/2014	3:15 PM	1.5	129.3
17/3/2014	3:41 PM	1.6	120
17/3/2014	4:34 PM	1.7	109.1
17/3/2014	4:57 PM	1.8	128.8
18/3/2014	9:49 AM	1.2	116.4
18/3/2014	10:47 AM	0.9	130.4
18/3/2014	11:47 AM	0.7	117.1
18/3/2014	12:09 PM	0.7	125.3
18/3/2014	12:27 PM	0.7	118.6

APPENDIX V (cont'd)

Data for Figure 11. (cont'd)

Date	Time	Tidal Height [m]	Mean Bandlevel (Wideband) [dB re uPa]
18/3/2014	1:12 PM	0.8	121.8
18/3/2014	2:12 PM	1.0	121.7
19/3/2014	9:22 AM	1.5	147.3
19/3/2014	9:43 AM	1.4	130.1
19/3/2014	10:09 AM	1.2	118.8
19/3/2014	11:22 AM	0.9	127.9
19/3/2014	12:37 PM	0.8	129.1
19/3/2014	1:49 PM	0.9	120
19/3/2014	2:43 PM	1.1	113.4
19/3/2014	3:46 PM	1.4	121.7
20/3/2014	1:54 PM	0.9	135.4
20/3/2014	2:11 PM	1.0	124.6
20/3/2014	4:05 PM	1.5	118.6
20/3/2014	4:14 PM	1.5	120.8
20/3/2014	5:07 PM	1.8	116
20/3/2014	5:17 PM	1.8	132.3
20/3/2014	5:28 PM	1.8	126.5
20/3/2014	5:41 PM	1.9	135.6
20/3/2014	5:50 PM	1.9	138.8
20/3/2014	6:00 PM	2.0	142
20/3/2014	6:10 PM	2.0	145.3
20/3/2014	8:37 PM	1.9	119.2
20/3/2014	9:04 PM	1.8	110.6
20/3/2014	10:06 PM	1.5	114.1
20/3/2014	10:29 PM	1.4	112.6
20/3/2014	11:05 PM	1.2	106.4
20/3/2014	11:30 PM	1.1	114.2
21/3/2014	12:09 AM	0.9	108.4
21/3/2014	1:03 AM	0.7	113.2
21/3/2014	2:01 AM	0.7	107.9
21/3/2014	3:02 AM	0.8	114.4
21/3/2014	3:58 AM	1.0	106.1
21/3/2014	5:05 AM	1.2	106.8
21/3/2014	6:01 AM	1.4	103.1
21/3/2014	7:01 AM	1.6	116.5
21/3/2014	8:30 AM	1.7	115.8

APPENDIX V (cont'd)

Data for Figure 11. (cont'd)

Date	Time	Tidal Height [m]	Mean Bandlevel (Wideband) [dB re uPa]
21/3/2014	10:43 AM	1.4	133.5
21/3/2014	10:54 AM	1.3	130
21/3/2014	11:05 AM	1.3	123.6
21/3/2014	11:16 AM	1.3	120.4
21/3/2014	11:27 AM	1.2	113.1
21/3/2014	2:13 PM	1.0	134.6
21/3/2014	2:24 PM	1.0	133.2
21/3/2014	2:34 PM	1.0	117.1
21/3/2014	2:45 PM	1.1	113.4
24/3/2014	9:42 AM	1.2	126.6
24/3/2014	10:07 AM	1.2	121.6
24/3/2014	11:13 AM	1.3	138.6
24/3/2014	11:21 AM	1.3	131.5
24/3/2014	11:29 AM	1.3	134.2
24/3/2014	2:04 PM	1.3	129.9
25/3/2014	10:54 AM	1.1	122.4
25/3/2014	11:08 AM	1.1	118.5
25/3/2014	11:34 AM	1.2	116.5
25/3/2014	1:20 PM	1.3	118.5
25/3/2014	2:06 PM	1.3	112.5
25/3/2014	3:13 PM	1.3	119
25/3/2014	3:25 PM	1.3	118.1
25/3/2014	3:35 PM	1.3	124.2
25/3/2014	3:47 PM	1.3	121.7
26/3/2014	9:57 AM	0.8	127.2
26/3/2014	10:13 AM	0.8	131.8
26/3/2014	10:19 AM	0.8	131.6
26/3/2014	10:26 AM	0.8	127.9
26/3/2014	12:18 PM	1.1	123.6
26/3/2014	1:14 PM	1.3	116.7
26/3/2014	2:46 PM	1.4	114.7
26/3/2014	3:19 PM	1.4	118.2
26/3/2014	3:38 PM	1.4	126.7
26/3/2014	4:00 PM	1.4	122.2
27/3/2014	9:43 AM	0.6	122.9
27/3/2014	10:08 AM	0.6	114.9

APPENDIX V (cont'd)

Data for Figure 11. (cont'd)

Date	Time	Tidal Height [m]	Mean Bandlevel (Wideband) [dB re uPa]
27/3/2014	12:58 PM	1.2	130.3
27/3/2014	2:48 PM	1.4	110.7
27/3/2014	4:28 PM	1.5	121.9
28/3/2014	10:15 AM	0.5	114.4
28/3/2014	11:28 AM	0.7	132.9
28/3/2014	12:35 PM	1.0	128.8
28/3/2014	1:50 PM	1.3	124.2
28/3/2014	2:22 PM	1.4	124.8
28/3/2014	2:33 PM	1.4	123.8
28/3/2014	2:51 PM	1.5	121.5
28/3/2014	2:59 PM	1.5	135.4
1/4/2014	10:05 AM	1.0	123
1/4/2014	10:29 AM	0.9	115.7
1/4/2014	2:07 PM	1.1	114.2
2/4/2014	3:09 PM	1.4	128.6
2/4/2014	3:16 PM	1.4	129.7
2/4/2014	3:24 PM	1.4	124.9
2/4/2014	3:40 PM	1.5	121
2/4/2014	3:48 PM	1.5	121.5
2/4/2014	3:56 PM	1.6	122.6
4/4/2014	1:57 PM	1.1	118.7
4/4/2014	2:01 PM	1.1	132.4
4/4/2014	2:15 PM	1.1	130.7
4/4/2014	2:24 PM	1.1	126.9
4/4/2014	2:37 PM	1.2	133.4
4/4/2014	2:48 PM	1.2	130.6
4/4/2014	2:58 PM	1.2	125.2
8/4/2014	2:24 PM	1.4	131.5
8/4/2014	2:32 PM	1.4	127.1
8/4/2014	2:44 PM	1.4	128.2
8/4/2014	2:52 PM	1.5	125.6
8/4/2014	2:59 PM	1.5	123.3
8/4/2014	3:11 PM	1.5	121.6
9/4/2014	11:24 AM	0.9	126.5
9/4/2014	11:40 AM	0.9	124.8
9/4/2014	11:46 AM	0.9	125.9

APPENDIX V (cont'd)

Data for Figure 11. (cont'd)

Date	Time	Tidal Height [m]	Mean Bandlevel (Wideband) [dB re uPa]
9/4/2014	11:59 AM	0.9	123.6
9/4/2014	12:05 PM	0.9	122.7
9/4/2014	12:22 PM	1.0	121.4
9/4/2014	12:35 PM	1.0	130.1
9/4/2014	12:54 PM	1.0	124.1
9/4/2014	3:01 PM	1.2	136.5
9/4/2014	3:07 PM	1.2	131.9
9/4/2014	3:26 PM	1.2	155.6
9/4/2014	3:39 PM	1.2	136.2
9/4/2014	3:45 PM	1.2	130.5
9/4/2014	3:54 PM	1.2	129.6
9/4/2014	4:00 PM	1.2	132.6
10/4/2014	2:10 PM	1.3	122.1
10/4/2014	2:25 PM	1.3	134.3
10/4/2014	2:41 PM	1.3	125.4
10/4/2014	4:00 PM	1.4	119.9
10/4/2014	4:16 PM	1.4	143.1
10/4/2014	4:31 PM	1.4	134.6
11/4/2014	2:42 PM	1.4	132.1
11/4/2014	3:21 PM	1.5	124.4
11/4/2014	3:27 PM	1.5	136.8
11/4/2014	3:39 PM	1.5	125.3
11/4/2014	3:46 PM	1.5	132.6
14/4/2014	1:42 PM	1.3	128.5
14/4/2014	1:52 PM	1.4	124.7
14/4/2014	1:59 PM	1.4	125.3
14/4/2014	2:11 PM	1.5	130.9
14/4/2014	2:24 PM	1.5	127.4
15/4/2014	3:24 PM	1.8	129.6
15/4/2014	3:36 PM	1.8	118.9
15/4/2014	3:47 PM	1.9	122.5
23/4/2014	10:54 AM	1.3	127.5
23/4/2014	11:04 AM	1.3	125.4
23/4/2014	11:15 AM	1.3	123.6
23/4/2014	11:28 AM	1.3	125
23/4/2014	11:38 AM	1.3	126.4

APPENDIX V (cont'd)

Data for Figure 11. (cont'd)

Date	Time	Tidal Height [m]	Mean Bandlevel (Wideband) [dB re uPa]
23/4/2014	11:48 AM	1.4	122
23/4/2014	2:11 PM	1.4	117.7
23/4/2014	2:23 PM	1.4	129.8
23/4/2014	2:37 PM	1.4	120.8
23/4/2014	2:44 PM	1.4	122.5
23/4/2014	3:10 PM	1.4	124.4
23/4/2014	3:17 PM	1.4	120.2
23/4/2014	3:30 PM	1.4	122.4
23/4/2014	3:37 PM	1.4	120.5
23/4/2014	3:49 PM	1.4	118.3
23/4/2014	3:58 PM	1.3	117.7
24/4/2014	5:36 PM	1.3	120.9
24/4/2014	5:42 PM	1.3	121.8
24/4/2014	5:55 PM	1.3	127.7
24/4/2014	6:02 PM	1.3	127.7
24/4/2014	6:16 PM	1.3	138.6
24/4/2014	9:48 PM	1.5	110.7
24/4/2014	10:22 PM	1.6	112.8
24/4/2014	10:51 PM	1.7	110.1
24/4/2014	11:25 PM	1.8	105.7
24/4/2014	11:59 PM	1.8	105.7
25/4/2014	1:03 AM	1.8	108.8
25/4/2014	2:04 AM	1.8	112.8
25/4/2014	3:01 AM	1.6	105.4
25/4/2014	4:03 AM	1.4	103.5
25/4/2014	5:04 AM	1.1	107.8
25/4/2014	6:03 AM	0.9	107.2
25/4/2014	7:40 AM	0.6	110.1
25/4/2014	10:20 AM	0.9	120.5
25/4/2014	10:27 AM	0.9	129.3
25/4/2014	10:46 AM	1.0	135.5
25/4/2014	11:16 AM	1.1	129.3
28/4/2014	12:24 PM	1.1	111.6
28/4/2014	12:36 PM	1.2	117.9
28/4/2014	12:44 PM	1.2	111.3
28/4/2014	12:57 PM	1.3	120.6

APPENDIX V (cont'd)

Data for Figure 11. (cont'd)

Date	Time	Tidal Height [m]	Mean Bandlevel (Wideband) [dB re uPa]
28/4/2014	1:03 PM	1.3	122.6
28/4/2014	1:06 PM	1.3	138.3
28/4/2014	2:09 PM	1.6	125.1
28/4/2014	2:11 PM	1.6	127.4
28/4/2014	2:18 PM	1.6	126.8
28/4/2014	2:20 PM	1.6	129.1

Data for Figure 12. Mean bandlevels for all 291 recordings as a function of time of day. Red and blue represent the 30–40,000 Hz "wideband" frequency range and 400 –12,500 Hz"dolphin-sensitive" band, respectively. Sample sizes are indicated by the numbers above each bar in the histogram.

2-hr Period	Mean Bandlevel (Wideband) [dB re uPa]	Mean Bandlevel (Dolphin Band) [dB re uPa]	Number of Recordings
00:00–01:59	110.13	103.87	3
02:00–03:59	109.32	104.24	5
04:00–05:59	106.03	101.47	3
06:00–07:59	109.23	104.45	4
08:00–09:59	122.33	117.56	14
10:00–11:59	124.52	118.24	68
12:00–13:59	121.30	114.95	55
14:00–15:59	124.84	119.38	99
16:00–17:59	124.64	119.86	25
18:00–19:59	138.40	134.80	4
20:00–21:59	113.50	107.43	3
22:00–23:59	110.20	104.66	8

APPENDIX V (cont'd)

Data for Figure 16. The mean number of clicks and whistles per minute of recording detected for each day of observational effort during pre-construction phase.
SD = standard deviation, W = whistles, C = clicks

Date	Whistles	SD W	Clicks	SD C
26-Sep	0.00	0.00	0.00	0.00
27-Sep	7.38	9.36	230.68	208.44
28-Sep	0.00	0.00	0.00	0.00
29-Sep	0.00	0.00	0.00	0.00
30-Sep	0.00	0.00	0.00	0.00
1-Oct	3.23	5.31	192.69	140.00
2-Oct	0.00	0.00	182.82	262.12
3-Oct	0.00	0.00	0.00	0.00
4-Oct	0.00	0.00	0.00	0.00
5-Oct	0.41	0.57	144.92	83.24
6-Oct	0.08	0.11	151.08	37.30
7-Oct	4.60	7.29	496.50	321.04
8-Oct	0.00	0.00	242.61	155.13
9-Oct	0.20	0.40	79.70	47.19
10-Oct	2.44	4.74	217.02	141.85
11-Oct	0.43	0.40	250.72	278.14
12-Oct	3.48	6.43	81.23	55.37
13-Oct	0.00	0.00	49.61	0.00
14-Oct	0.00	0.00	60.66	28.41
15-Oct	0.10	0.14	268.20	265.31
16-Oct	0.00	0.00	0.00	0.00
17-Oct	0.00	0.00	0.00	0.00
18-Oct	0.30	0.51	85.89	86.20
19-Oct	5.92	8.93	205.29	115.77
20-Oct	9.88	11.90	141.29	137.39
21-Oct	9.56	12.08	102.50	45.19
22-Oct	12.80	13.20	172.04	117.45
23-Oct	0.00	0.00	119.40	130.39
24-Oct	0.37	0.48	122.59	117.70
25-Oct	1.20	0.57	52.60	71.28

APPENDIX V (cont'd)

Data for Figure 17. Mean number of whistles per minute and clicks per minute as a function of dolphin group size during pre-construction phase.
SD = standard deviation, W = whistles, C = clicks

Group Size	Whistles	SD W	Clicks	SD C
1	2.89	5.21	169.74	194.88
2-5	3.14	6.54	161.46	160.61
6-9	5.64	9.91	207.25	157.17

Data for Figure 18. Mean number of whistles per minute and clicks per minute as a function of dolphin behavioural state during pre-construction phase.
SD = standard deviation, W = whistles, C = clicks

Behavioral State	Whistles	SD W	Clicks	SD C
Feeding	2.71	6.67	165.09	118.49
Milling	3.83	7.63	183.73	182.09
Socializing	3.05	3.33	294.63	159.98
Traveling	4.98	8.77	119.98	81.82

Data for Figure 19. Mean number of whistles per minute and clicks per minute as a function of the time of day during pre-construction phase.

Time of observation	Whistles	SD W	Clicks	SD C
08:00-09:59	2.30	4.35	100.83	77.23
10:00-11:59	4.77	9.59	155.65	120.40
12:00-13:59	2.08	5.08	171.07	149.02
14:00-15:59	3.88	5.79	218.49	241.38
16:00-17:59	7.82	11.83	186.40	122.57
18:00-19:59	18.40	0.00	39.74	0.00

Data for Figure 20. Mean number of clicks/min and whistles/min recorded as a function of the distance to the nearest vessel during pre-construction phase.

Distance to nearest boat	Average whistles/min	SD W	Average clicks/min	SD C
0-99m	6.34	51.47	220.23	233.94
100-199m	2.10	26.52	193.56	167.60
200-299m	4.01	38.28	232.71	176.87
300-399m	2.23	17.44	155.41	152.16
400-499m	6.00	43.28	93.62	101.39
500+	3.36	34.54	165.17	146.28

APPENDIX V (cont'd)

Data for Figure 21. Mean number of clicks/min and whistles/min recorded as a function of the Beaufort Sea State during pre-construction phase.

Beaufort Scale	Average whistles/min	SD W	Average clicks/min	SD C
1	12.54	11.92	56.58	30.91
2	3.80	7.49	174.26	147.99
3	2.36	5.85	186.20	184.95
4	1.60	2.93	188.97	189.78
5	0.00	0.00	576.00	0.00

Data for Figure 23. Mean number of whistles per minute and clicks per minute recorded in each zone of the study area during pre-construction phase

Zone	Whistles	SD W	Clicks	SDC
1	0.21	0.40	175.19	148.50
2	7.31	9.38	173.48	176.07

Data for Figure 24. The summed length of recordings in minutes made for each day of observational effort during the construction phase. The values above each column represent the number of recordings per day.

Date	Length of recording (min)	# of recordings
11-Mar	36.50	7
16-Mar	51.13	10
8-Apr	42.02	8
9-Apr	15.25	3

Data for Figure 25. The mean number of clicks and whistles per minute of recording detected for each day of observational effort during the construction phase.
SD = standard deviation, W = whistles, C = clicks

Date	Mean Whistles/min	SD W	Mean Clicks/min	SD Clicks
11-Mar	7.48	5.69	40.10	55.03
16-Mar	22.85	15.18	165.64	105.33
8-Apr	1.93	2.93	49.51	31.98
9-Apr	0.25	0.44	68.90	26.02

APPENDIX V (cont'd)

Data for Figure 26. Mean number of whistles per minute and clicks per minute during the construction phase as a function of dolphin group size.
SD = standard deviation, W = whistles, C = clicks

Group Size	Mean Whistles/min	SD W	Mean Clicks/min	SD C
1	4.52	5.14	45.12	42.81
2-5	17.64	16.47	143.31	101.16

Data for Figure 27. Mean number of whistles per minute and clicks per minute during the construction phase as a function of dolphin behavioural state.
SD = standard deviation, W = whistles, C = clicks

Behavioral State	Mean Whistles/min	SD W	Mean Clicks/min	SD C
Feeding	10.20	NA	12.00	NA
Milling	10.94	13.89	88.97	87.68
Socializing	23.67	NA	263.69	NA
Traveling	0.38	0.54	64.45	35.14

Data for Figure 28. Mean number of whistles per minute and clicks per minute during the construction phase as a function of the time of the encounter.

Time of Encounter	Mean Whistles/min	SD W	Mean Clicks/min	SD C
10:00-11:59	1.98	2.08	49.94	38.94
12:00-13:59	13.06	11.93	105.09	105.43
14:00-15:59	12.54	24.58	87.13	42.19

Data for Figure 29. Mean number of clicks per minute and whistles per minute recorded during the construction phase as a function of the distance to the nearest vessel.

Distance to Nearest Boat (m)	Mean Whistles/min	SD W	Mean Clicks/min	SD C
100-199	8.78	15.10	52.58	42.39
200-299	11.57	11.37	101.83	73.78
300-399	19.78	24.35	190.40	235.61
400-499	9.18	15.09	121.39	112.03
500+	9.93	14.64	85.97	79.50

APPENDIX V (cont'd)

Data for Figure 30. Mean number of clicks per minute and whistles per minute recorded during the construction phase as a function of the Beaufort Sea State.

Beaufort Scale	Mean Whistles/min	SD W	Mean Clicks/min	SD C
1	10.09	10.06	166.25	166.25
2	12.67	16.80	69.60	69.60
3	6.49	7.47	39.25	39.25

Data for Figure 31. Mean number of whistles per minute and clicks per minute during the construction phaserecorded in each zone of the study area.

Zone	Mean Whistles/min	SD W	Mean Clicks/min	SD C
2	10.61	13.36	90.71	89.36

Data for Figure 32. The summed length of recordings in minutes made for each day of observational effort during the baseline and construction phase monitoring.

PRE-CONSTRUCTION *PRE-CONSTRUCTION* *CONSTRUCTION*

Date	Length of recording (min)	Date	Length of recording (min)	Date	Length of recording (min)
25-Sep	0.00	11-Oct	25.25	11-Mar	36.50
26-Sep	49.00	12-Oct	3.00	16-Mar	51.13
27-Sep	0.00	13-Oct	14.00	8-Apr	42.02
28-Sep	0.00	14-Oct	10.00	9-Apr	15.25
29-Sep	0.00	15-Oct	0.00		
30-Sep	73.38	16-Oct	0.00		
1-Oct	17.00	17-Oct	34.00		
2-Oct	0.00	18-Oct	40.48		
3-Oct	0.00	19-Oct	50.25		
4-Oct	26.00	20-Oct	23.33		
5-Oct	25.00	21-Oct	35.25		
6-Oct	24.00	22-Oct	10.00		
7-Oct	14.00	23-Oct	60.25		
8-Oct	20.00	24-Oct	10.00		
9-Oct	45.68				
10-Oct	19.50				

APPENDIX V (cont'd)

Data for Figure 33. Average number of whistles per minute and clicks per minute as a function of dolphin behavioural state. SD = standard deviation, W = whistles, C = clicks

PRE-CONSTRUCTION PHASE

Behavioral State	Mean Whistles/min	SD W	Mean Clicks/min	SD C
Feeding	2.71	6.67	165.09	118.49
Milling	3.83	7.63	183.73	182.09
Socializing	3.05	3.33	294.63	159.98
Traveling	4.98	8.77	119.98	81.82

CONSTRUCTION PHASE

Behavioral State	Mean Whistles/min	SD W	Mean Clicks/min	SD C
Feeding	10.20	NA	12.00	NA
Milling	10.94	13.89	88.97	87.68
Socializing	23.67	NA	263.69	NA
Traveling	0.38	0.54	64.45	35.14

Data for Figure 34. Average number of whistles per minute and clicks per minute as a function of dolphin group size. SD = standard deviation, W = whistles, C = clicks

PRE-CONSTRUCTION PHASE

Group Size	Mean Whistles/min	SD W	Mean Clicks/min	SD C
1	2.89	5.21	169.74	194.88
2-5	3.14	6.54	161.46	160.61
6-9	5.64	9.91	207.25	157.17

CONSTRUCTION PHASE

Group Size	Whistles	SD W	Mean Clicks/min	SD C
1	4.52	5.14	45.12	42.81
2-5	17.64	16.47	143.31	101.16

APPENDIX V (cont'd)

Data for Figure 35. Average number of clicks per minute and whistles per minute recorded as a function of the distance to the nearest vessel.

PRE-CONSTRUCTION PHASE

Distance to nearest boat (m)	Mean Whistles/min	SD W	Mean Clicks/min	SD C
0-99	6.34	51.47	220.23	233.94
100-199	2.10	26.52	193.56	167.60
200-299	4.01	38.28	232.71	176.87
300-399	2.23	17.44	155.41	152.16
400-499	6.00	43.28	93.62	101.39
500+	3.36	34.54	165.17	146.28

CONSTRUCTION PHASE

Distance to Nearest Boat (m)	Mean Whistles/min	SD W	Mean Clicks/min	SD C
100-199	8.78	15.10	52.58	42.39
200-299	11.57	11.37	101.83	73.78
300-399	19.78	24.35	190.40	235.61
400-499	9.18	15.09	121.39	112.03
500+	9.93	14.64	85.97	79.50

Data for Figure 36. Average number of whistles per minute and clicks per minute as a function of the time of encounter

PRE-CONSTRUCTION PHASE

Time of encounter	Mean Whistles/min	SD W	Mean Clicks/min	SD C
08:00-09:59	2.30	4.35	100.83	77.23
10:00-11:59	4.77	9.59	155.65	120.40
12:00-13:59	2.08	5.08	171.07	149.02
14:00-15:59	3.88	5.79	218.49	241.38
16:00-17:59	7.82	11.83	186.40	122.57
18:00-19:59	18.40	0.00	39.74	0.00

CONSTRUCTION PHASE

Time of Encounter	Mean Whistles/min	SD W	Mean Clicks/min	SD C
10:00-11:59	1.98	2.08	49.94	38.94
12:00-13:59	13.06	11.93	105.09	105.43
14:00-15:59	12.54	24.58	87.13	42.19

APPENDIX V (cont'd)

Data for Figure 37. The average number of clicks and whistles per minute of recording detected for each day of observational effort. SD = standard deviation, W = whistles, C = clicks

PRE-CONSTRUCTION PHASE

Date	Mean Whistles/min	SD W	Mean Clicks/min	SD C
25-Sep	0.00	0.00	0.00	0.00
26-Sep	7.38	9.36	230.68	208.44
27-Sep	0.00	0.00	0.00	0.00
28-Sep	0.00	0.00	0.00	0.00
29-Sep	0.00	0.00	0.00	0.00
30-Sep	3.23	5.31	192.69	140.00
1-Oct	0.00	0.00	182.82	262.12
2-Oct	0.00	0.00	0.00	0.00
3-Oct	0.00	0.00	0.00	0.00
4-Oct	0.41	0.57	144.92	83.24
5-Oct	0.08	0.11	151.08	37.30
6-Oct	4.60	7.29	496.50	321.04
7-Oct	0.00	0.00	242.61	155.13
8-Oct	0.20	0.40	79.70	47.19
9-Oct	2.44	4.74	217.02	141.85
10-Oct	0.43	0.40	250.72	278.14
11-Oct	3.48	6.43	81.23	55.37
12-Oct	0.00	0.00	49.61	0.00
13-Oct	0.00	0.00	60.66	28.41
14-Oct	0.10	0.14	268.20	265.31
15-Oct	0.00	0.00	0.00	0.00
16-Oct	0.00	0.00	0.00	0.00
17-Oct	0.30	0.51	85.89	86.20
18-Oct	5.92	8.93	205.29	115.77
19-Oct	9.88	11.90	141.29	137.39
20-Oct	9.56	12.08	102.50	45.19
21-Oct	12.80	13.20	172.04	117.45
22-Oct	0.00	0.00	119.40	130.39
23-Oct	0.37	0.48	122.59	117.70
24-Oct	1.20	0.57	52.60	71.28

CONSTRUCTION PHASE

Date	Mean Whistles/min	SD W	Mean Clicks/min	SD Clicks
11-Mar	7.48	5.69	40.10	55.03
16-Mar	22.85	15.18	165.64	105.33
8-Apr	1.93	2.93	49.51	31.98
9-Apr	0.25	0.44	68.90	26.02

APPENDIX V (cont'd)

Data for Figure 38. Histogram of the percentage of EAR recordings with dolphin detections made at site C1 (Bridge Alignment Area) during 30 days of the pre-construction deployment period.

Date	# of files	% files per day
27-Sep	0	0.00
28-Sep	1	0.35
29-Sep	0	0.00
30-Sep	0	0.00
1-Oct	3	1.04
2-Oct	1	0.35
3-Oct	1	0.35
4-Oct	1	0.35
5-Oct	13	4.51
6-Oct	11	3.82
7-Oct	13	4.51
8-Oct	6	2.08
9-Oct	6	2.08
10-Oct	7	2.43
11-Oct	11	3.82
12-Oct	9	3.13
13-Oct	10	3.47
14-Oct	2	0.69
15-Oct	5	1.74
16-Oct	8	2.78
17-Oct	5	1.74
18-Oct	7	2.43
19-Oct	7	2.43
20-Oct	6	2.08
21-Oct	1	0.35
22-Oct	1	0.35
23-Oct	0	0.00
24-Oct	1	0.35
25-Oct	2	0.69
26-Oct	1	0.35

APPENDIX V (cont'd)

Data for Figure 39. The number of dolphin encounters and the mean encounter duration recorded on the EAR at site C1 (Bridge Alignment Area) during the pre-construction period.

Date	# of encounters	Average encounter duration	Std Dev
27-Sep	0	0	0
28-Sep	1	0	0
29-Sep	0	0	0
30-Sep	0	0	0
1-Oct	3	0	0
2-Oct	1	0	0
3-Oct	1	0	0
4-Oct	1	0	0
5-Oct	9	7.11	10.79
6-Oct	11	0	0
7-Oct	8	13.63	20.55
8-Oct	6	0	0
9-Oct	4	10.50	12.79
10-Oct	7	0	0
11-Oct	9	3.33	10.00
12-Oct	8	0	0
13-Oct	10	2.00	6.32
14-Oct	2	0	0
15-Oct	5	0	0
16-Oct	7	0.71	1.89
17-Oct	4	6.25	12.50
18-Oct	6	1.67	4.08
19-Oct	6	3.33	8.16
20-Oct	6	0	0
21-Oct	1	0	0
22-Oct	1	0	0
23-Oct	0	0	0
24-Oct	1	0	0
25-Oct	2	0	0
26-Oct	1	0	0

APPENDIX V (cont'd)

Data for Figure 40. Detections of dolphin signals at site C1 (Bridge Alignment Area) as a function of the hour of the day. Values are the total number of detections in each hour across the entire pre-construction monitoring period (shaded cells represent nigttime period).

Hour of day	Click Detections	Whistle Detections
0	10	0
1	7	0
2	6	0
3	3	0
4	6	0
5	7	0
6	2	0
7	4	0
8	5	0
9	3	0
10	3	0
11	7	0
12	6	0
13	6	0
14	7	0
15	6	0
16	4	0
17	8	0
18	4	0
19	7	0
20	7	0
21	8	0
22	5	0
23	8	0

APPENDIX V (cont'd)

Data for Figure 42. Histogram of the percentage of EAR recordings at site C2 (Lung Kwu Chau) with dolphin detections made during 30 days of the pre-construction deployment period

Date	# Files	% files/day
27-Sep	23	7.99
28-Sep	18	6.25
29-Sep	24	8.33
30-Sep	24	8.33
1-Oct	4	1.39
2-Oct	30	10.42
3-Oct	14	4.86
4-Oct	34	11.81
5-Oct	43	14.93
6-Oct	35	12.15
7-Oct	40	13.89
8-Oct	55	19.10
9-Oct	59	20.49
10-Oct	81	28.13
11-Oct	38	13.19
12-Oct	33	11.46
13-Oct	32	11.11
14-Oct	28	9.72
15-Oct	46	15.97
16-Oct	44	15.28
17-Oct	42	14.58
18-Oct	39	13.54
19-Oct	25	8.68
20-Oct	26	9.03
21-Oct	23	7.99
22-Oct	48	16.67
23-Oct	70	24.31
24-Oct	40	13.89
25-Oct	67	23.26
26-Oct	23	7.99

APPENDIX V (cont'd)

Data for Figure 43. The number of dolphin encounters and the mean encounter duration recorded on the EAR at site C2 (near Lung Kwu Chau) during the pre-construction period

Date	# of encounters	Avg. encounter duration	Std Dev
27-Sep	6	21.67	33.57
28-Sep	7	19.00	32.58
29-Sep	11	9.00	13.83
30-Sep	7	20.29	30.10
1-Oct	3	1.67	2.89
2-Oct	7	22.00	26.23
3-Oct	7	8.00	9.38
4-Oct	10	13.50	20.69
5-Oct	8	35.75	49.87
6-Oct	9	18.22	29.11
7-Oct	10	27.40	20.76
8-Oct	11	32.18	41.80
9-Oct	10	30.50	45.07
10-Oct	11	44.27	71.78
11-Oct	9	31.67	49.25
12-Oct	7	30.57	50.26
13-Oct	6	49.83	52.50
14-Oct	8	18.50	14.80
15-Oct	10	19.90	14.61
16-Oct	13	16.23	24.00
17-Oct	9	24.56	40.68
18-Oct	11	20.82	16.32
19-Oct	8	16.13	21.72
20-Oct	10	11.60	27.97
21-Oct	9	18.22	17.06
22-Oct	8	33.63	37.79
23-Oct	9	13.78	10.91
24-Oct	8	70.25	125.90
25-Oct	10	48.70	65.32
26-Oct	6	21.67	36.62

APPENDIX V (cont'd)

Data for Figure 44. Detections of dolphin signals at site C2 (near Lung Kwu Chau) as a function of the hour of the day. Values are the total number of detections in each hour across the entire pre-construction monitoring period (shaded cells represent nigttime period).

Hour of day	Click Detections	Whistle Detections
0	62	6
1	65	4
2	45	14
3	51	11
4	44	5
5	47	13
6	57	6
7	85	3
8	71	7
9	65	2
10	36	1
11	16	5
12	25	5
13	19	4
14	33	4
15	25	3
16	37	11
17	33	5
18	34	3
19	43	1
20	16	1
21	33	7
22	34	7
23	49	4

APPENDIX V (cont'd)

Data for Figure 46. Histogram of the percentage of EAR recordings with dolphin detections made at site C1 (Bridge Alignment Area) during the construction period.

Date	# of files	% files per day
5-Mar	0	0.00
6-Mar	0	0.00
7-Mar	0	0.00
8-Mar	0	0.00
9-Mar	0	0.00
10-Mar	0	0.00
11-Mar	0	0.00
12-Mar	0	0.00
13-Mar	0	0.00
14-Mar	1	0.35
15-Mar	0	0.00
16-Mar	1	0.35
17-Mar	0	0.00
18-Mar	1	0.35
19-Mar	0	0.00
20-Mar	0	0.00
21-Mar	1	0.35
22-Mar	0	0.00
23-Mar	1	0.35
24-Mar	0	0.00
25-Mar	0	0.00
26-Mar	0	0.00
27-Mar	0	0.00
28-Mar	0	0.00
29-Mar	0	0.00
30-Mar	0	0.00
31-Mar	0	0.00
1-Apr	0	0.00
2-Apr	0	0.00
3-Apr	0	0.00

APPENDIX V (cont'd)

Data for Figure 47. The number of dolphin encounters and the mean encounter duration recorded during the construction phase on the EAR at site C1 (Bridge Alignment Area).

Date	# of encounters	Average encounter duration (min)
5-Mar	0	0.00
6-Mar	0	0.00
7-Mar	0	0.00
8-Mar	0	0.00
9-Mar	0	0.00
10-Mar	0	0.00
11-Mar	0	0.00
12-Mar	0	0.00
13-Mar	0	0.00
14-Mar	1	5.00
15-Mar	0	0.00
16-Mar	1	5.00
17-Mar	0	0.00
18-Mar	1	5.00
19-Mar	0	0.00
20-Mar	0	0.00
21-Mar	1	5.00
22-Mar	0	0.00
23-Mar	1	5.00
24-Mar	0	0.00
25-Mar	0	0.00
26-Mar	0	0.00
27-Mar	0	0.00
28-Mar	0	0.00
29-Mar	0	0.00
30-Mar	0	0.00
31-Mar	0	0.00
1-Apr	0	0.00
2-Apr	0	0.00
3-Apr	0	0.00

APPENDIX V (cont'd)

Data for Figure 48. Detections of dolphin signals during the construction phase at site C1 (Bridge Alignment Area) as a function of the hour of the day. Values are the total number of detections in each hour across the entire monitoring period (shaded cells represent nigttime period).

Hour of Day	Clicks	Whistles
0	0	0
1	0	0
2	0	0
3	0	0
4	0	0
5	0	0
6	0	0
7	0	0
8	0	1
9	0	1
10	2	0
11	0	0
12	0	0
13	1	0
14	0	0
15	0	0
16	0	0
17	0	0
18	0	0
19	0	0
20	0	0
21	0	0
22	0	0
23	0	0

APPENDIX V (cont'd)

Data for Figure 50. Histogram of the percentage of EAR recordings with dolphin detections made at site C2 (near Lung Kwu Chau) during the construction period.

Date	# of files	% files per day
5-Mar	29	10.07
6-Mar	15	5.21
7-Mar	19	6.60
8-Mar	44	15.28
9-Mar	32	11.11
10-Mar	7	2.43
11-Mar	20	6.94
12-Mar	16	5.56
13-Mar	33	11.46
14-Mar	31	10.76
15-Mar	48	16.67
16-Mar	10	3.47
17-Mar	46	15.97
18-Mar	11	3.82
19-Mar	31	10.76
20-Mar	27	9.38
21-Mar	21	7.29
22-Mar	14	4.86
23-Mar	6	2.08
24-Mar	6	2.08
25-Mar	18	6.25
26-Mar	28	9.72
27-Mar	5	1.74
28-Mar	16	5.56
29-Mar	18	6.25
30-Mar	6	2.08
31-Mar	15	5.21
1-Apr	16	5.56
2-Apr	12	4.17
3-Apr	7	2.43

APPENDIX V (cont'd)

Data for Figure 51. The number of dolphin encounters and the mean encounter duration recorded during the construction phase on the EAR at site C2 (near Lung Kwu Chau).

Date	# of encounters	Average encounter duration (min)
5-Mar	5	41.00
6-Mar	6	18.33
7-Mar	5	17.00
8-Mar	6	40.83
9-Mar	15	12.67
10-Mar	5	6.00
11-Mar	7	15.00
12-Mar	7	9.29
13-Mar	9	21.11
14-Mar	12	12.92
15-Mar	10	29.09
16-Mar	4	11.25
17-Mar	9	31.67
18-Mar	8	8.13
19-Mar	11	15.45
20-Mar	11	9.17
21-Mar	3	9.58
22-Mar	5	15.71
23-Mar	12	6.67
24-Mar	7	6.25
25-Mar	6	23.33
26-Mar	9	13.33
27-Mar	5	5.00
28-Mar	4	21.25
29-Mar	8	10.00
30-Mar	3	10.00
31-Mar	4	20.00
1-Apr	5	23.00
2-Apr	5	7.00
3-Apr	3	10.00

APPENDIX V (cont'd)

Data for Figure 52. Detections of dolphin signals during the construction phase at site C2 (near Lung Kwu Chau) as a function of the hour of the day. Values are the total number of detections in each hour across the entire monitoring period (shaded cells represent nigttime period).

Hour	Clicks	Whistles
0	43	1
1	19	0
2	17	0
3	10	0
4	14	0
5	42	0
6	33	0
7	30	1
8	27	0
9	29	0
10	14	0
11	12	0
12	10	0
13	13	0
14	12	0
15	28	1
16	11	0
17	23	0
18	22	0
19	48	2
20	33	1
21	46	0
22	35	0
23	33	0

APPENDIX V (cont'd)

Data for Figure 54. Histogram of the percentage of EAR recordings at site C1 (Bridge Alignment Area) and C2 (near Lung Kwu Chau) , with dolphin detections made during each day of the baseline and construction periods.

C1

PRE-CONSTRUCTION			CONSTRUCTION		
Date	**# of files**	**% files per day**	**Date**	**# of files**	**% files per day**
25-Sep	0	0.00	5-Mar	0	0.00
26-Sep	1	0.35	6-Mar	0	0.00
27-Sep	0	0.00	7-Mar	0	0.00
28-Sep	0	0.00	8-Mar	0	0.00
29-Sep	3	1.04	9-Mar	0	0.00
30-Sep	1	0.35	10-Mar	0	0.00
1-Oct	1	0.35	11-Mar	0	0.00
2-Oct	1	0.35	12-Mar	0	0.00
3-Oct	13	4.51	13-Mar	0	0.00
4-Oct	11	3.82	14-Mar	1	0.35
5-Oct	13	4.51	15-Mar	0	0.00
6-Oct	6	2.08	16-Mar	1	0.35
7-Oct	6	2.08	17-Mar	0	0.00
8-Oct	7	2.43	18-Mar	1	0.35
9-Oct	11	3.82	19-Mar	0	0.00
10-Oct	9	3.13	20-Mar	0	0.00
11-Oct	10	3.47	21-Mar	1	0.35
12-Oct	2	0.69	22-Mar	0	0.00
13-Oct	5	1.74	23-Mar	1	0.35
14-Oct	8	2.78	24-Mar	0	0.00
15-Oct	5	1.74	25-Mar	0	0.00
16-Oct	7	2.43	26-Mar	0	0.00
17-Oct	7	2.43	27-Mar	0	0.00
18-Oct	6	2.08	28-Mar	0	0.00
19-Oct	1	0.35	29-Mar	0	0.00
20-Oct	1	0.35	30-Mar	0	0.00
21-Oct	0	0.00	31-Mar	0	0.00
22-Oct	1	0.35	1-Apr	0	0.00
23-Oct	2	0.69	2-Apr	0	0.00
24-Oct	1	0.35	3-Apr	0	0.00

APPENDIX V (cont'd)

Data for Figure 54 (cont'd)

C2

PRE-CONSTRUCTION			CONSTRUCTION		
Date	**# of files**	**% files per day**	**Date**	**# of files**	**% files per day**
25-Sep	23	7.99	5-Mar	29	10.07
26-Sep	18	6.25	6-Mar	15	5.21
27-Sep	24	8.33	7-Mar	19	6.60
28-Sep	24	8.33	8-Mar	44	15.28
29-Sep	4	1.39	9-Mar	32	11.11
30-Sep	30	10.42	10-Mar	7	2.43
1-Oct	14	4.86	11-Mar	20	6.94
2-Oct	34	11.81	12-Mar	16	5.56
3-Oct	43	14.93	13-Mar	33	11.46
4-Oct	35	12.15	14-Mar	31	10.76
5-Oct	40	13.89	15-Mar	48	16.67
6-Oct	55	19.10	16-Mar	10	3.47
7-Oct	59	20.49	17-Mar	46	15.97
8-Oct	81	28.13	18-Mar	11	3.82
9-Oct	38	13.19	19-Mar	31	10.76
10-Oct	33	11.46	20-Mar	27	9.38
11-Oct	32	11.11	21-Mar	21	7.29
12-Oct	28	9.72	22-Mar	14	4.86
13-Oct	46	15.97	23-Mar	6	2.08
14-Oct	44	15.28	24-Mar	6	2.08
15-Oct	42	14.58	25-Mar	18	6.25
16-Oct	39	13.54	26-Mar	28	9.72
17-Oct	25	8.68	27-Mar	5	1.74
18-Oct	26	9.03	28-Mar	16	5.56
19-Oct	23	7.99	29-Mar	18	6.25
20-Oct	48	16.67	30-Mar	6	2.08
21-Oct	70	24.31	31-Mar	15	5.21
22-Oct	40	13.89	1-Apr	16	5.56
23-Oct	67	23.26	2-Apr	12	4.17
24-Oct	23	7.99	3-Apr	7	2.43

APPENDIX V (cont'd)

Data for Figure 55. Detections of dolphin signals at sites C1 (Bridge Alignment Area) and C2 (near Lung Kwu Chau) during the baseline and construction periods as a function of the hour of the day

C1

PRE-CONSTRUCTION PHASE			CONSTRUCTION PHASE		
Hour of day	**Clicks**	**Whistles**	**Hour of Day**	**Clicks**	**Whistles**
0	10	0	0	0	0
1	7	0	1	0	0
2	6	0	2	0	0
3	3	0	3	0	0
4	6	0	4	0	0
5	7	0	5	0	0
6	2	0	6	0	0
7	4	0	7	0	0
8	5	0	8	0	1
9	3	0	9	0	1
10	3	0	10	2	0
11	7	0	11	0	0
12	6	0	12	0	0
13	6	0	13	1	0
14	7	0	14	0	0
15	6	0	15	0	0
16	4	0	16	0	0
17	8	0	17	0	0
18	4	0	18	0	0
19	7	0	19	0	0
20	7	0	20	0	0
21	8	0	21	0	0
22	5	0	22	0	0
23	8	0	23	0	0

APPENDIX V (cont'd)

Data for Figure 55 (cont'd).

C2

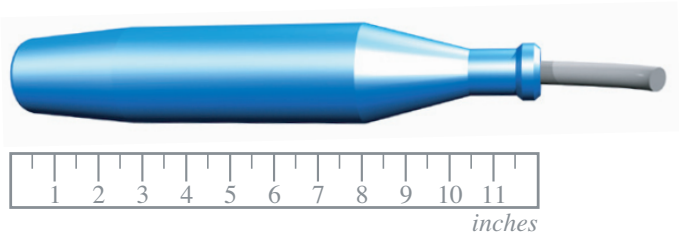
PRE-CONSTRUCTION PHASE			CONSTRUCTION PHASE		
Hour of day	**Clicks**	**Whistles**	**Hour**	**Clicks**	**Whistles**
0	62	6	0	43	1
1	65	4	1	19	0
2	45	14	2	17	0
3	51	11	3	10	0
4	44	5	4	14	0
5	47	13	5	42	0
6	57	6	6	33	0
7	85	3	7	30	1
8	71	7	8	27	0
9	65	2	9	29	0
10	36	1	10	14	0
11	16	5	11	12	0
12	25	5	12	10	0
13	19	4	13	13	0
14	33	4	14	12	0
15	25	3	15	28	1
16	37	11	16	11	0
17	33	5	17	23	0
18	34	3	18	22	0
19	43	1	19	48	2
20	16	1	20	33	1
21	33	7	21	46	0
22	34	7	22	35	0
23	49	4	23	33	0

Attachment I. Specifications of dipping hydrophone (Model ITC6050C) and associated calibration record

Model ITC-6050C

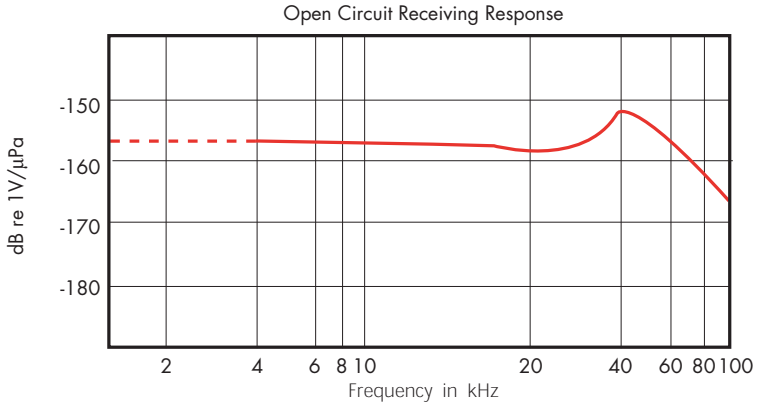
Preamplified Hydrophone

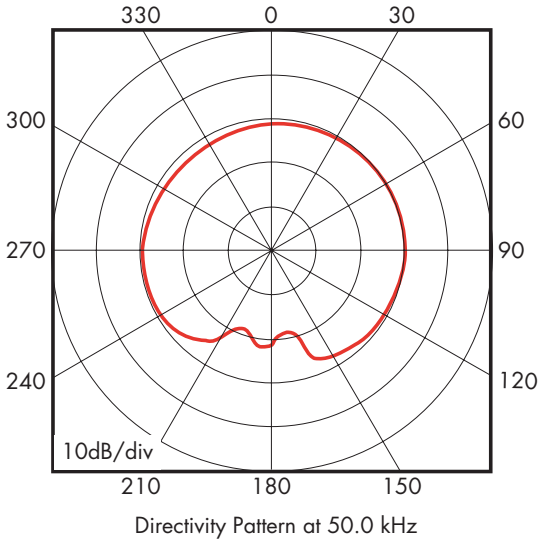
The Model ITC-6050C is a popular broadband hydrophone. The unit has a built-in, low noise preamplifier making it excellent for many field applications. Fully encapsulated in high quality polyurethane, it is well suited for rigorous conditions.



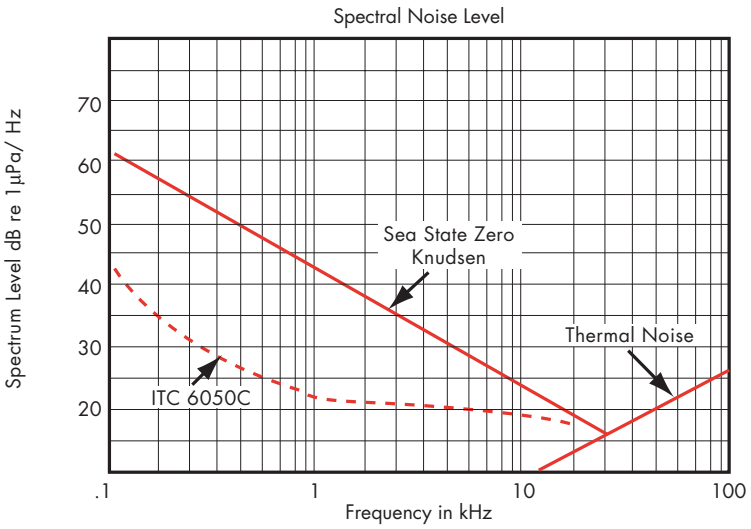
Specifications (Nominal)

Type	Hydrophone w/ Preamplifier
Resonance f_r	50 kHz
Depth	900 meters
Envelope Dimensions (in.)	2D x 12L
Midband OCV	-157 dB//1V/µPa
Suggested Band	.03 - 70 kHz
Beam Type	Spherical





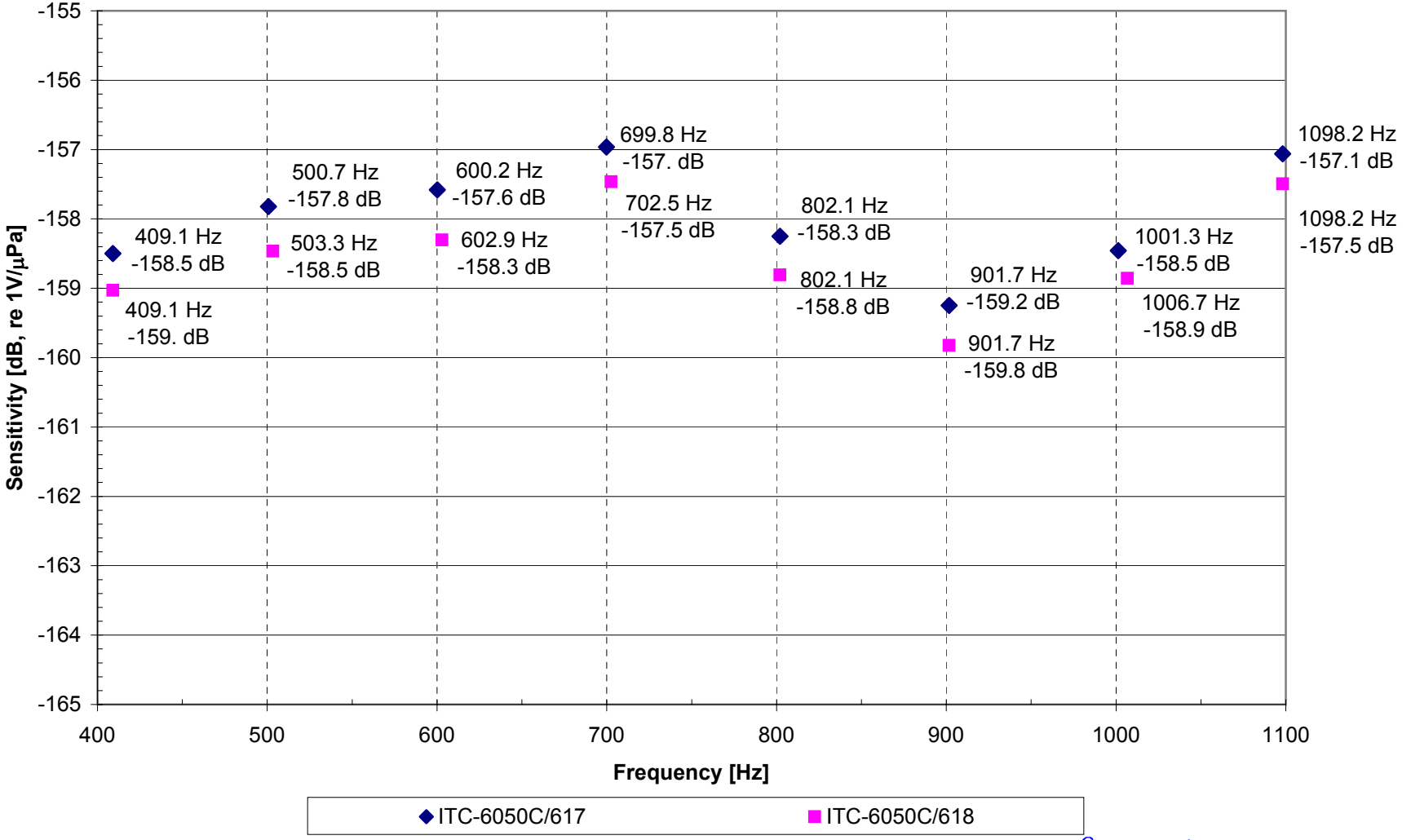
Directivity Pattern at 50.0 kHz



869 Ward Drive, Santa Barbara, CA 93111
805.683.2575 • 805.967.8199 FAX
International Transducer Corporation
ww.itc-transducers.com

Cetacean Research Technology
4728 12th Ave. NE
Seattle, WA 98105
www.cetaceanresearch.com

ITC-6050C/617 Mean Sensitivity = -158.0dB
ITC-6050C/618 Mean Sensitivity = -158.5dB



Method: USRD C100 Hydrophone Calibrator + ST191DSA
Water Temperature: 80F

Measurement Date: 26 August 2013

Attachment II. Calibration Record of Ecological Acoustic Recorders (EARs) by Oceanway Corporation Limited

Oceanway Corporation Limited
Unit. 3, G/F., N0. 34, Tai Chung Hau Village, Sai Kung, Hong Kong(S.A.R.), P.R.C.
Tel: (852) 2791 5331 Fax: (852) 2792 5331

REPORT ON ACOUSTICAL MEASUREMENTS CONDUCTED FOR

Hong Kong Cetacean Research Project

EQUIPMENT TESTED
Hydrophone on an Environmental Acoustic Recorder (EAR)
EAR S/N : 9300708B088
(B1)

REPORT NUMBER : EARS-001

PREPARED BY: Gus ZHANG Cheng

PREPARED ON: 13th September 2013

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TEST OBJECTIVE

The test objective for this report was designed to reproduce the frequency testing carried for the hydrophone model SQ26-01, fitted to an Environmental Acoustic Recorder (EAR).

The SQ26-01 is manufactured by Sensor Technology Limited, a Canadian Company with an address given as P.O. Box 97, Collingwood, Ontario, Canada L9Y 3Z4. The hydrophone SQ26-01 is described as a general purpose, low-cost electrically shielded hydrophone.

The Environmental Acoustic Recorder (EAR) is supplied by Oceanwide Science Institute with an address given as 3620 Baldwin Ave. Ste 204, Makawao, HI 96768, U.S.A.

MEASUREMENT INSTRUMENTATION

The measurement Instrumentation was comprised of a calibrated hydrophone probe, an Agilent Technologies DSO-X-3024A Digital Oscilloscope, and an 8116A Hewlett Packard Pulse/Function Generator. All results were recorded in a Dell Laptop running Excel.

Two calibrated by-laminar membrane hydrophones were used. One used for the frequency range from 0.1KHz to 20KHz, the other from 15KHz to 50KHz. The overlap of frequency was used to check the calibration of both of the equipment used.

MEASUREMENT SETUP
The 0.1KHz to 20KHz by-laminar membrane hydrophone was connected to the Hewlett Packard Signal Generator. The unit was set to give a single frequency sine wave at a voltage level of 30Vp-p.

The hydrophone on the EAR's unit (model SQ26-01) was electrically disconnected from the electronic circuit and directly connected to the Agilent Digital oscilloscope. The latter was configured to display the signal being received by the hydrophone as well as the Fast Fourier Transformation (FFT) of that signal.

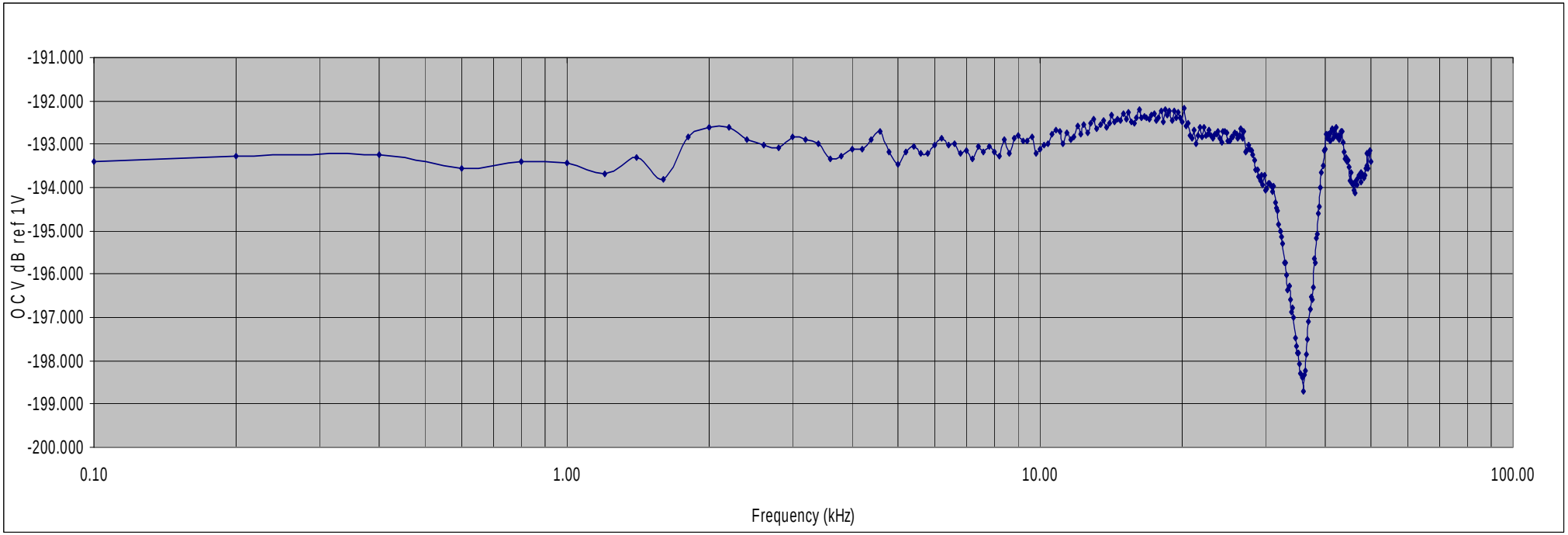
The by-laminar membrane hydrophone was mechanically connected to the top of the SQ26-01 hydrophone.

The frequency of the signal Generator was varied in 200Hz graduations through the range of 0.1KHz to 50KHz and the corresponding height of the FFT displayed result was measured using the calibrated internal cursor on the oscilloscope screen. In all a total of 250 readings were taken.

Agilent Technologies DSO-X-3024A serial number : MY52161670
Hewlett Packard Function Generator serial number : 178667-03

RESULTS

The results of the testing for frequencies from 0.1KHz to 50KHz are shown in the Received Voltage Response graph below:



Temperature during the test = 20ºC.
Pressure was 1.001mB
Location of test : HKU Laboratory
Date of test = 7th September 2013.

PERFORMANCE STATEMENT

The results of these tests shows that the maximum received frequency attenuation deviation of the SQ26-01 hydrophone fitted to the EAR unit with serial number 9300708B088, as compared to the manufacturers quoted specification (see Appendix A for details) is less than 0.5dBA. This gives a worst case deviation of <±1dBA. This is an acceptable result for such a sensor given the specification quotes a deviation of ±1dBA is acceptable (see Appendix A).

Signed : 

Date : _13th September 2013.

APPENDIX A - SQ23-01 Data Sheet

The SQ23-01 data sheet showing the frequency attenuation response.

SENSOR

Sensor Technology Limited

Hydrophone SQ26-01

Features

- Low cost
- Rugged
- Good depth capability

Applications

- General purpose research
- Towed arrays

Overview

The SQ26-01 is a general-purpose low-cost electrically shielded hydrophone. It has good sensitivity, wide bandwidth, and good stability. Custom configurations of these hydrophones are also available. For additional data on frequency response or outline drawings, please call our technical support. All parameters are measured after hydrophones have been subjected to pressures of 70 bar. The polyurethane-encapsulated hydrophone will withstand continuous immersion in isoparaffinic hydrocarbon fluids and sea water.

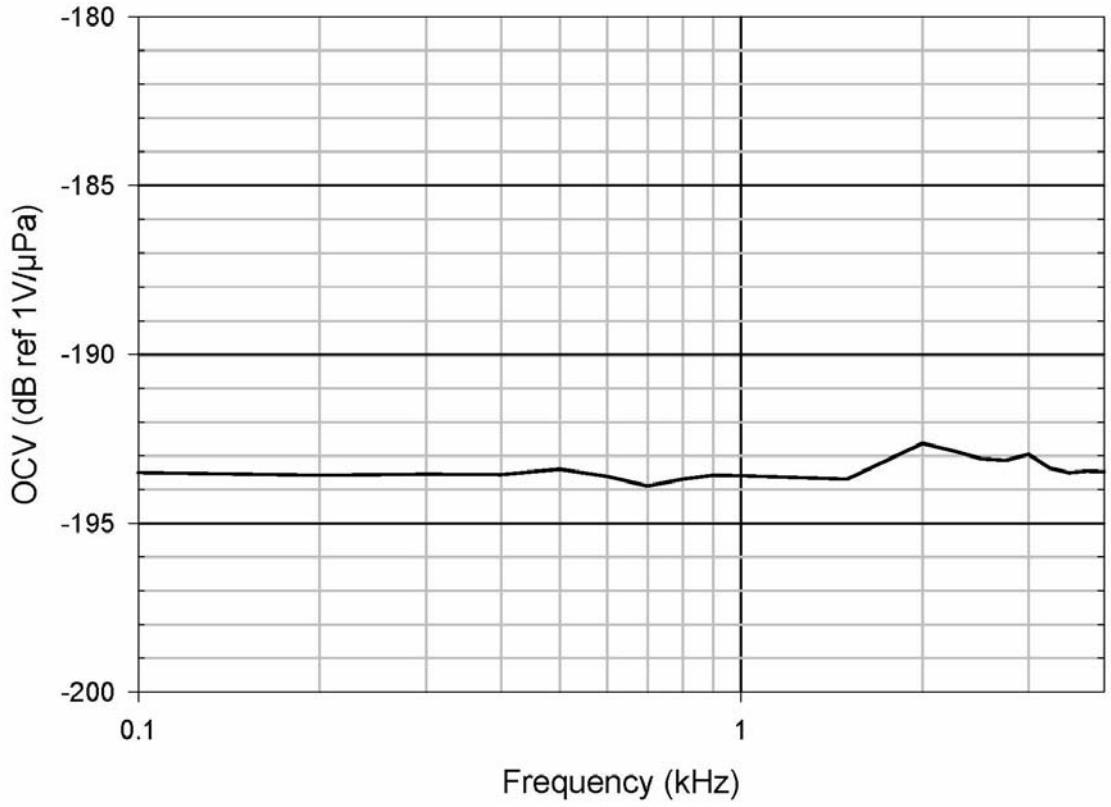
Specifications

Voltage sensitivity	-193.5 ± 1.0 dBV re 1 µPa @ 20 °C, 20 V/bar
Charge sensitivity	24 nC/bar
Capacitance	1.4 nF ± 10 % @ 20 °C
Sensitivity variation with temperature	less than 1 dB loss from 0 to 35 °C
Capacitance variation with temperature	0.33% increase per °C
Capacitance variation with depth	7% loss per 1,000 m
Operating depth	down to 1,000 m
Frequency response	flat from 1 Hz to 28,000 Hz
Acceleration sensitivity	< 0.2 mbar/g when properly mounted
Storage and operating temperature	-30 to +60 °C
Diameter	25.4 mm (1.0")
Length	25.4 mm (1.0") max
Mass	16 grams
Electrical leads	two-wire shielded, 28AWG, 30cm (12") long
Shielding	integral Faraday cage type
Electrical insulation	> 500 M Ohms
Water blocked leads	No

Sensor Technology Limited, PO Box 97, Collingwood Ontario, Canada L9Y 3Z4
Tel (705) 444-1440 Fax (705) 444-6787 www.Sensortech.ca Email: techsupport@Sensortech.ca

Rev. 09/03

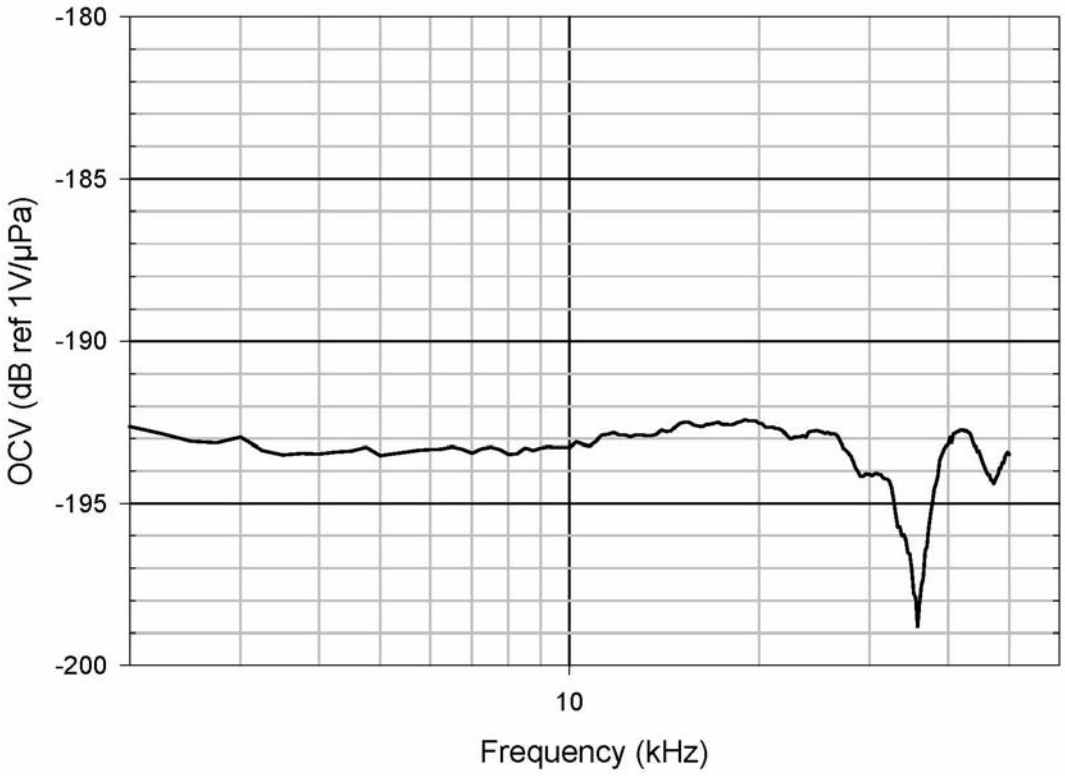
Receive Voltage Response
SQ26 (typical)



Date: October 4, 2004
Acoustic Test Facility: Newport Rhode Island
Transducer Model: SQ26
Test Frequency: 100 - 3000Hz
Spacing: 2.32 meters
Depth: 12 meters
Plane: XZ

SENSOR
Sensor Technology Limited

Receive Voltage Response
SQ26 (typical)



Date: Sept 16, 2004
Acoustic Test Facility: Seneca Lake Sonar Test Facility
Transducer Model: SQ26
Test Frequency: 2 - 50kHz
Spacing: 2.32 meters
Depth: 12 meters
Plane: XZ

SENSOR
Sensor Technology Limited

APPENDIX B - Raw Data

The raw data collected during the testing:

Frequency KHz	Log10 (v) dB
0.10	-193.403
0.20	-193.271
0.40	-193.241
0.60	-193.557
0.80	-193.394
1.00	-193.422
1.20	-193.678
1.40	-193.321
1.60	-193.797
1.80	-192.845
2.00	-192.598
2.20	-192.621
2.40	-192.901
2.60	-193.011
2.80	-193.073
3.00	-192.842
3.20	-192.897
3.40	-192.979
3.60	-193.346
3.80	-193.282
4.00	-193.112
4.20	-193.106
4.40	-192.895
4.60	-192.703
4.80	-193.175
5.00	-193.448
5.20	-193.184
5.40	-193.052
5.60	-193.224
5.80	-193.212
6.00	-193.028
6.20	-192.861
6.40	-193.035
6.60	-192.981
6.80	-193.201
7.00	-193.153
7.20	-193.338
7.40	-193.046
7.60	-193.184
7.80	-193.055
8.00	-193.178
8.20	-193.274
8.40	-192.902
8.60	-193.225
8.80	-192.873
9.00	-192.813
9.20	-192.918
9.40	-192.931
9.60	-192.845
9.80	-193.214
10.00	-193.104
10.20	-193.008
10.40	-192.999
10.60	-192.766
10.80	-192.689
11.00	-192.708
11.20	-192.984
11.40	-192.728
11.60	-192.888
11.80	-192.827
12.00	-192.582
12.20	-192.783
12.40	-192.554
12.60	-192.744
12.80	-192.509
13.00	-192.429
13.20	-192.641
13.40	-192.535
13.60	-192.445
13.80	-192.610

Frequency KHz	Log10 (v) dB
14.00	-192.520
14.20	-192.336
14.40	-192.477
14.60	-192.417
14.80	-192.454
15.00	-192.287
15.20	-192.435
15.40	-192.279
15.60	-192.474
15.80	-192.505
16.00	-192.384
16.20	-192.190
16.40	-192.380
16.60	-192.349
16.80	-192.402
17.00	-192.411
17.20	-192.328
17.40	-192.303
17.60	-192.440
17.80	-192.380
18.00	-192.217
18.20	-192.487
18.40	-192.194
18.60	-192.341
18.80	-192.233
19.00	-192.439
19.20	-192.226
19.40	-192.387
19.60	-192.251
19.80	-192.403
20.00	-192.485
20.20	-192.169
20.40	-192.570
20.60	-192.515
20.80	-192.810
21.00	-192.874
21.20	-192.660
21.40	-192.975
21.60	-192.804
21.80	-192.602
22.00	-192.837
22.20	-192.615
22.40	-192.797
22.60	-192.769
22.80	-192.671
23.00	-192.790
23.20	-192.872
23.40	-192.781
23.60	-192.760
23.80	-192.708
24.00	-192.856
24.20	-192.949
24.40	-192.695
24.60	-192.714
24.80	-192.748
25.00	-192.939
25.20	-192.916
25.40	-192.843
25.60	-192.824
25.80	-192.735
26.00	-192.766
26.20	-192.865
26.40	-192.809
26.60	-192.656
26.80	-192.854
27.00	-192.709
27.20	-193.172
27.40	-193.148
27.60	-193.035
27.80	-193.119

Frequency KHz	Log10 (v) dB
28.00	-193.161
28.20	-193.244
28.40	-193.373
28.60	-193.578
28.80	-193.589
29.00	-193.736
29.20	-193.831
29.40	-193.713
29.60	-193.925
29.80	-193.702
30.00	-194.070
30.20	-194.016
30.40	-193.893
30.60	-193.896
30.80	-193.976
31.00	-194.104
31.20	-193.959
31.40	-194.362
31.60	-194.479
31.80	-194.547
32.00	-194.844
32.20	-195.025
32.40	-195.137
32.60	-195.290
32.80	-195.729
33.00	-195.733
33.20	-196.015
33.40	-196.356
33.60	-196.283
33.80	-196.582
34.00	-196.882
34.20	-196.784
34.40	-196.985
34.60	-197.486
34.80	-197.665
35.00	-197.824
35.20	-197.827
35.40	-198.077
35.60	-198.298
35.80	-198.398
36.00	-198.697
36.20	-198.311
36.40	-198.217
36.60	-197.842
36.80	-197.493
37.00	-197.080
37.20	-196.823
37.40	-196.529
37.60	-196.597
37.80	-196.315
38.00	-195.656
38.20	-195.731
38.40	-195.181
38.60	-195.073
38.80	-194.599
39.00	-194.453
39.20	-194.009
39.40	-193.661
39.60	-193.499
39.80	-193.158
40.00	-193.125
40.20	-192.755
40.40	-192.864
40.60	-192.753
40.80	-192.807
41.00	-192.930
41.20	-192.695
41.40	-192.646
41.60	-192.876
41.80	-192.662

Frequency KHz	Log10 (v) dB
42.00	-192.790
42.20	-192.597
42.40	-192.832
42.60	-192.787
42.80	-192.909
43.00	-192.809
43.20	-192.817
43.40	-192.710
43.60	-192.702
43.80	-192.962
44.00	-193.165
44.20	-193.335
44.40	-193.299
44.60	-193.386
44.80	-193.380
45.00	-193.517
45.20	-193.826
45.40	-193.651
45.60	-193.903
45.80	-193.950
46.00	-193.905
46.20	-194.049
46.40	-194.121
46.60	-193.841
46.80	-193.944
47.00	-193.775
47.20	-193.707
47.40	-193.704
47.60	-193.658
47.80	-193.874
48.00	-193.679
48.20	-193.726
48.40	-193.764
48.60	-193.712
48.80	-193.561
49.00	-193.498
49.20	-193.222
49.40	-193.552
49.60	-193.225
49.80	-193.157
50.00	-193.390

Oceanway Corporation Limited
Unit. 3, G/F., N0. 34, Tai Chung Hau Village, Sai Kung, Hong Kong(S.A.R.), P.R.C.
Tel: (852) 2791 5331 Fax: (852) 2792 5331

REPORT ON ACOUSTICAL MEASUREMENTS CONDUCTED FOR

Hong Kong Cetacean Research Project

EQUIPMENT TESTED
Hydrophone on an Environmental Acoustic Recorder (EAR)
EAR S/N : 9300479B100
(B2)

REPORT NUMBER : EARS-002

PREPARED BY: Gus ZHANG Cheng

PREPARED ON: 13th September 2013

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TEST OBJECTIVE

The test objective for this report was designed to reproduce the frequency testing carried for the hydrophone model SQ26-01, fitted to an Environmental Acoustic Recorder (EAR).

The SQ26-01 is manufactured by Sensor Technology Limited, a Canadian Company with an address given as P.O. Box 97, Collingwood, Ontario, Canada L9Y 3Z4. The hydrophone SQ26-01 is described as a general purpose, low-cost electrically shielded hydrophone.

The Environmental Acoustic Recorder (EAR) is supplied by Oceanwide Science Institute with an address given as 3620 Baldwin Ave. Ste 204, Makawao, HI 96768, U.S.A.

MEASUREMENT INSTRUMENTATION

The measurement Instrumentation was comprised of a calibrated hydrophone probe, an Agilent Technologies DSO-X-3024A Digital Oscilloscope, and an 8116A Hewlett Packard Pulse/Function Generator. All results were recorded in a Dell Laptop running Excel.

Two calibrated by-laminar membrane hydrophones were used. One used for the frequency range from 0.1KHz to 20KHz, the other from 15KHz to 50KHz. The overlap of frequency was used to check the calibration of both of the equipment used.

MEASUREMENT SETUP
The 0.1KHz to 20KHz by-laminar membrane hydrophone was connected to the Hewlett Packard Signal Generator. The unit was set to give a single frequency sine wave at a voltage level of 30Vp-p.

The hydrophone on the EAR's unit (model SQ26-01) was electrically disconnected from the electronic circuit and directly connected to the Agilent Digital oscilloscope. The latter was configured to display the signal being received by the hydrophone as well as the Fast Fourier Transformation (FFT) of that signal.

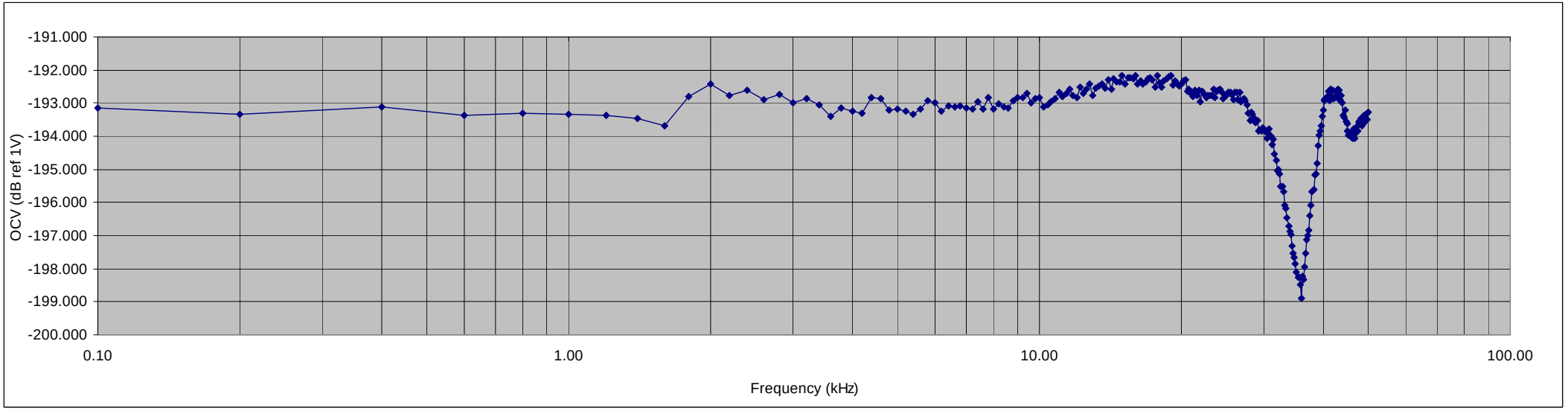
The by-laminar membrane hydrophone was mechanically connected to the top of the SQ26-01 hydrophone.

The frequency of the signal Generator was varied in 200Hz graduations through the range of 0.1KHz to 50KHz and the corresponding height of the FFT displayed result was measured using the calibrated internal cursor on the oscilloscope screen. In all a total of 251 readings were taken.

Agilent Technologies DSO-X-3024A serial number : MY52161670
Hewlett Packard Function Generator serial number : 178667-03

RESULTS

The results of the testing for frequencies from 0.1KHz to 50KHz are shown in the Received Voltage Response graph below:



Temperature during the test = 20ºC.
Pressure was 1.003mB
Location of test : HKU Laboratory
Date of test = 10th September 2013.

PERFORMANCE STATEMENT

The results of these tests shows that the maximum received frequency attenuation deviation of the SQ26-01 hydrophone fitted to the EAR unit with serial number 9300479B100, as compared to the manufacturers quoted specification (see Appendix A for details) is less than 0.4dBA. This gives a worst case deviation of <±1dBA. This is an acceptable result for such a sensor given the specification quotes a deviation of ±1dBA is acceptable (see Appendix A).

Signed : 

Date : 13th September 2013

APPENDIX A - SQ23-01 Data Sheet

The SQ23-01 data sheet showing the frequency attenuation response.

SENSOR

Sensor Technology Limited

Hydrophone SQ26-01

Features

- Low cost
- Rugged
- Good depth capability

Applications

- General purpose research
- Towed arrays

Overview

The SQ26-01 is a general-purpose low-cost electrically shielded hydrophone. It has good sensitivity, wide bandwidth, and good stability. Custom configurations of these hydrophones are also available. For additional data on frequency response or outline drawings, please call our technical support. All parameters are measured after hydrophones have been subjected to pressures of 70 bar. The polyurethane-encapsulated hydrophone will withstand continuous immersion in isoparaffinic hydrocarbon fluids and sea water.

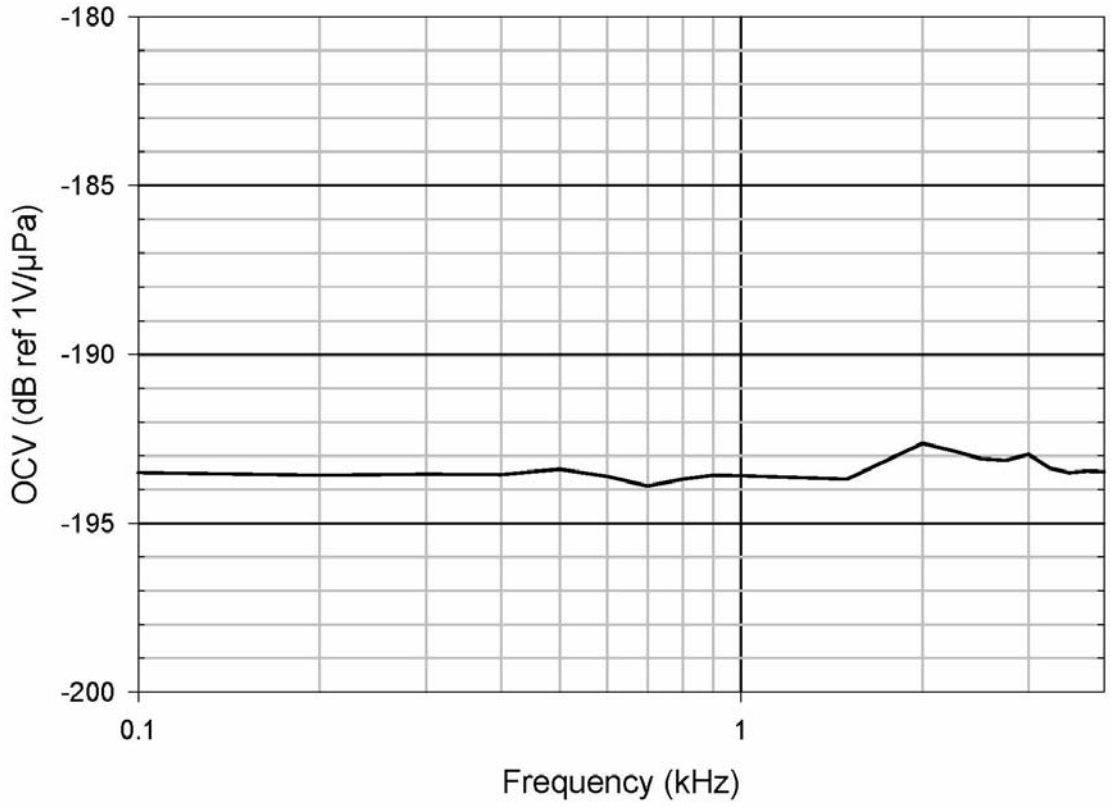
Specifications

Voltage sensitivity	-193.5 ± 1.0 dBV re 1 µPa @ 20 °C, 20 V/bar
Charge sensitivity	24 nC/bar
Capacitance	1.4 nF ± 10 % @ 20 °C
Sensitivity variation with temperature	less than 1 dB loss from 0 to 35 °C
Capacitance variation with temperature	0.33% increase per °C
Capacitance variation with depth	7% loss per 1,000 m
Operating depth	down to 1,000 m
Frequency response	flat from 1 Hz to 28,000 Hz
Acceleration sensitivity	< 0.2 mbar/g when properly mounted
Storage and operating temperature	-30 to +60 °C
Diameter	25.4 mm (1.0")
Length	25.4 mm (1.0") max
Mass	16 grams
Electrical leads	two-wire shielded, 28AWG, 30cm (12") long
Shielding	integral Faraday cage type
Electrical insulation	> 500 M Ohms
Water blocked leads	No

Sensor Technology Limited, PO Box 97, Collingwood Ontario, Canada L9Y 3Z4
Tel (705) 444-1440 Fax (705) 444-6787 www.Sensortech.ca Email: techsupport@Sensortech.ca

Rev. 09/03

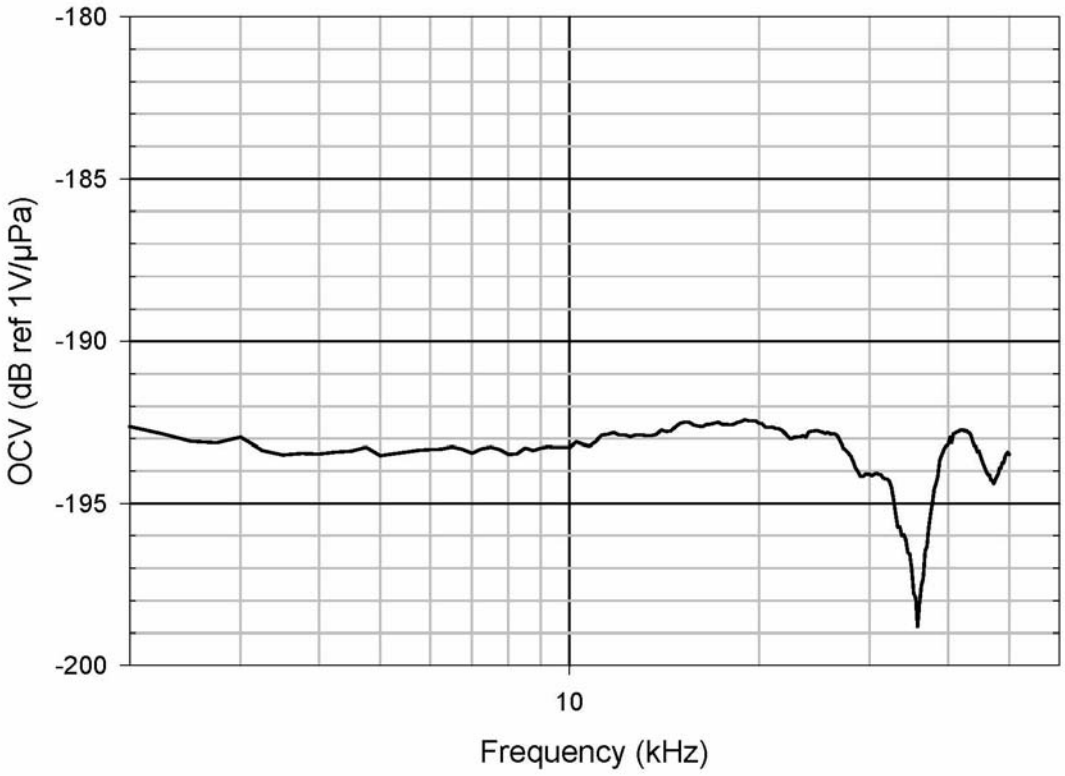
Receive Voltage Response
SQ26 (typical)



Date: October 4, 2004
Acoustic Test Facility: Newport Rhode Island
Transducer Model: SQ26
Test Frequency: 100 - 3000Hz
Spacing: 2.32 meters
Depth: 12 meters
Plane: XZ

SENSOR
Sensor Technology Limited

Receive Voltage Response
SQ26 (typical)



Date: Sept 16, 2004
Acoustic Test Facility: Seneca Lake Sonar Test Facility
Transducer Model: SQ26
Test Frequency: 2 - 50kHz
Spacing: 2.32 meters
Depth: 12 meters
Plane: XZ

SENSOR
Sensor Technology Limited

APPENDIX B - Raw Data

The raw data collected during the testing:

Frequency KHz	Log10 (v) dB
0.100	-193.134
0.200	-193.349
0.400	-193.114
0.600	-193.356
0.800	-193.320
1.000	-193.341
1.200	-193.370
1.400	-193.478
1.600	-193.684
1.800	-192.800
2.000	-192.409
2.200	-192.780
2.400	-192.603
2.600	-192.908
2.800	-192.737
3.000	-192.988
3.200	-192.851
3.400	-193.045
3.600	-193.408
3.800	-193.151
4.000	-193.238
4.200	-193.300
4.400	-192.845
4.600	-192.856
4.800	-193.219
5.000	-193.164
5.200	-193.234
5.400	-193.322
5.600	-193.177
5.800	-192.918
6.000	-192.993
6.200	-193.230
6.400	-193.080
6.600	-193.103
6.800	-193.082
7.000	-193.154
7.200	-193.174
7.400	-192.946
7.600	-193.178
7.800	-192.828
8.000	-193.170
8.200	-193.027
8.400	-193.112
8.600	-193.149
8.800	-192.921
9.000	-192.833
9.200	-192.818
9.400	-192.690
9.600	-192.982
9.800	-192.859
10.000	-192.825
10.200	-193.130
10.400	-193.040
10.600	-192.961
10.800	-192.869
11.000	-192.685
11.200	-192.790
11.400	-192.712
11.600	-192.575
11.800	-192.771
12.000	-192.824
12.200	-192.525
12.400	-192.701
12.600	-192.570
12.800	-192.424
13.000	-192.782
13.200	-192.536
13.400	-192.495
13.600	-192.416
13.800	-192.563

Frequency KHz	Log10 (v) dB
14.000	-192.293
14.200	-192.567
14.400	-192.274
14.600	-192.353
14.800	-192.372
15.000	-192.159
15.200	-192.416
15.400	-192.242
15.600	-192.235
15.800	-192.269
16.000	-192.154
16.200	-192.411
16.400	-192.334
16.600	-192.410
16.800	-192.351
17.000	-192.271
17.200	-192.240
17.400	-192.290
17.600	-192.512
17.800	-192.155
18.000	-192.391
18.200	-192.500
18.400	-192.337
18.600	-192.251
18.800	-192.186
19.000	-192.167
19.200	-192.445
19.400	-192.342
19.600	-192.429
19.800	-192.489
20.000	-192.428
20.200	-192.331
20.400	-192.303
20.600	-192.648
20.800	-192.575
21.000	-192.692
21.200	-192.789
21.400	-192.610
21.600	-192.753
21.800	-192.619
22.000	-192.946
22.200	-192.652
22.400	-192.739
22.600	-192.830
22.800	-192.779
23.000	-192.766
23.200	-192.777
23.400	-192.577
23.600	-192.847
23.800	-192.648
24.000	-192.619
24.200	-192.563
24.400	-192.676
24.600	-192.848
24.800	-192.756
25.000	-192.780
25.200	-192.683
25.400	-192.669
25.600	-192.744
25.800	-192.904
26.000	-192.679
26.200	-192.674
26.400	-192.897
26.600	-192.679
26.800	-192.946
27.000	-192.906
27.200	-192.863
27.400	-192.936
27.600	-193.068
27.800	-193.319

Frequency KHz	Log10 (v) dB
28.000	-193.526
28.200	-193.260
28.400	-193.341
28.600	-193.449
28.800	-193.576
29.000	-193.522
29.200	-193.833
29.400	-193.798
29.600	-193.852
29.800	-193.749
30.000	-193.779
30.200	-193.830
30.400	-194.057
30.600	-193.921
30.800	-193.789
31.000	-194.000
31.200	-194.263
31.400	-194.096
31.600	-194.534
31.800	-194.718
32.000	-195.050
32.200	-195.012
32.400	-195.149
32.600	-195.528
32.800	-195.516
33.000	-195.678
33.200	-196.071
33.400	-196.176
33.600	-196.466
33.800	-196.717
34.000	-196.858
34.200	-196.959
34.400	-197.301
34.600	-197.523
34.800	-197.652
35.000	-197.850
35.200	-198.104
35.400	-198.270
35.600	-198.277
35.800	-198.473
36.000	-198.884
36.200	-198.246
36.400	-198.323
36.600	-197.958
36.800	-197.543
37.000	-197.135
37.200	-196.988
37.400	-196.846
37.600	-196.396
37.800	-196.097
38.000	-195.666
38.200	-195.605
38.400	-195.172
38.600	-195.144
38.800	-194.835
39.000	-194.277
39.200	-193.983
39.400	-193.829
39.600	-193.696
39.800	-193.386
40.000	-193.195
40.200	-192.936
40.400	-192.886
40.600	-192.876
40.800	-192.838
41.000	-192.795
41.200	-192.650
41.400	-192.922
41.600	-192.572
41.800	-192.827

Frequency KHz	Log10 (v) dB
42.000	-192.597
42.200	-192.870
42.400	-192.817
42.600	-192.816
42.800	-192.680
43.000	-192.574
43.200	-192.597
43.400	-192.925
43.600	-192.892
43.800	-192.773
44.000	-192.977
44.200	-193.356
44.400	-193.446
44.600	-193.209
44.800	-193.559
45.000	-193.629
45.200	-193.845
45.400	-193.956
45.600	-193.981
45.800	-193.919
46.000	-193.975
46.200	-194.059
46.400	-193.863
46.600	-193.780
46.800	-194.056
47.000	-193.917
47.200	-193.722
47.400	-193.827
47.600	-193.635
47.800	-193.564
48.000	-193.548
48.200	-193.477
48.400	-193.681
48.600	-193.571
48.800	-193.623
49.000	-193.375
49.200	-193.553
49.400	-193.324
49.600	-193.312
49.800	-193.489
50.000	-193.265

Attachment III. **AFCD Permit to deploy EARs in Sha Chau and Lung Kwu Chau Marine Park**

漁農自然護理署
郊野公園及海岸公園管理局
九龍長沙灣道 303 號
長沙灣政府合署六樓

Agriculture, Fisheries & Conservation Department
Country & Marine Parks Authority
Cheung Sha Wan Government Offices
303 Cheung Sha Wan Road 6th floor
Kowloon, Hong Kong

本署檔號 OUR REF: (64) AF GR MPA 01/5/2 Pt.14
來函檔號 YOUR REF:
電　　話 TEL NO.: (852) 2150 6870
圖文傳真 Faxline No: (852) 2152 0060

Room 2004, 20/F,
Tamson Plaza, 161 Wai Yip Street,
Kwun Tong, Kowloon
Hong Kong

Attn: Dr. Hung Ka Yiu Samuel

18 September 2013

Dear Dr. Hung,

Application for Permission to Undertake Scientific Study in Sha Chau and Lung Kwu Chau Marine Park

I refer to your application, seeking permission to undertake a research project entitled "Application of Passive Acoustic Monitoring using Ecological Acoustic Recorder (EAR) within Sha Chau and Lung Kwu Chau Marine Park".

The permission is hereby given under Section 17 (5)(a) of the Marine Parks and Marine Reserves Regulation (Cap. 476A) to you for carrying out experimental devices installation activities in relation to the above research in the captioned Marine Park during the period from 18 September 2013 to 30 June 2014 subject to the conditions attached.

If you have any enquiry, please contact Ms. Hiu-yan LI at 2150 7150.

Yours sincerely,

(Alan Chan)
for Director of Agriculture, Fisheries and Conservation

Encl.

cc.
Internal
MP/W