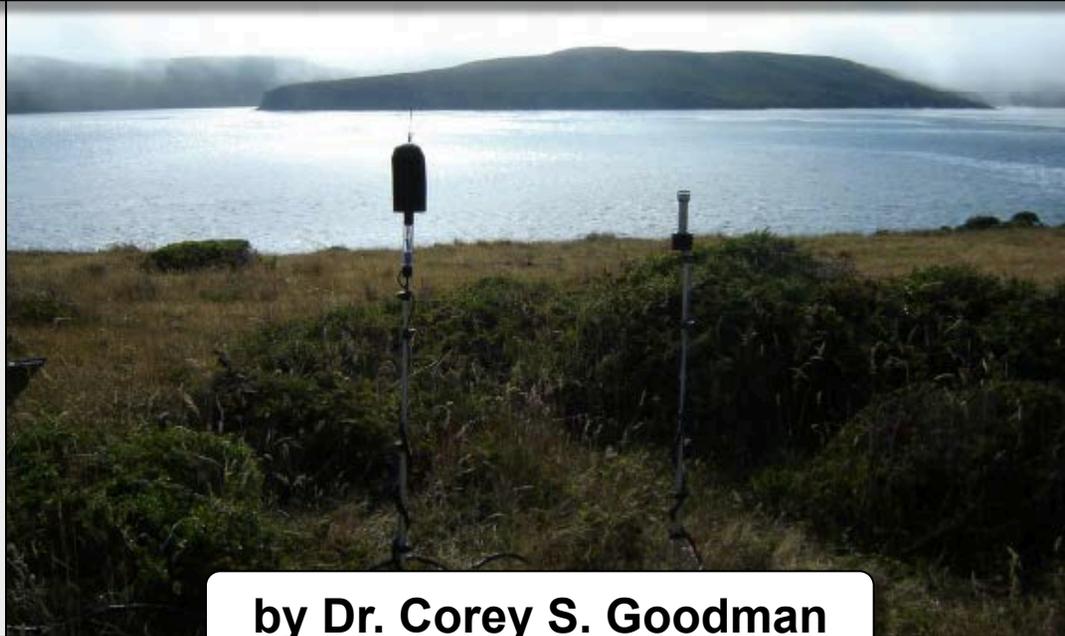


**NPS Misrepresented and Concealed Acoustic Data
And Deceived the Peer Reviewers
of the Draft Environmental Impact Statement (DEIS) on DBOC
Part 4**



by Dr. Corey S. Goodman

**4. Concealed key acoustic data in Chapters 3 and 4
that contradicted the DEIS.**

April 24, 2012

These slides are intended to supplement and not replace the written material.

4. Concealed key acoustic data in Chapters 3 and 4 that contradicted DEIS.

4. Conclusions

The NPS DEIS on DBOC:

- a) Knew or should have known that the PORE 004 microphone should have recorded daily DBOC boat trips and equipment if the numbers in Tables 3-3, 4-2, 4-3, & 4-4 were correct.
- b) Claimed the bluff blocked the sound path from boat to microphone, when Google earth elevation profiles and FAA photographs show this is incorrect.
- c) Knew or should have known that the microphone had not recorded daily DBOC boat trips and equipment, showing the numbers in Tables 3-3, 4-2, 4-3, & 4-4 were incorrect.
- d) Concealed key data that contradicted their conclusions in the NPS DEIS.



Western-Pacific Region
Los Angeles, CA 90009
FP-01 (D857)

BASLINE AMBIENT SOUND LEVELS IN POINT REYES NATIONAL SEASHORE

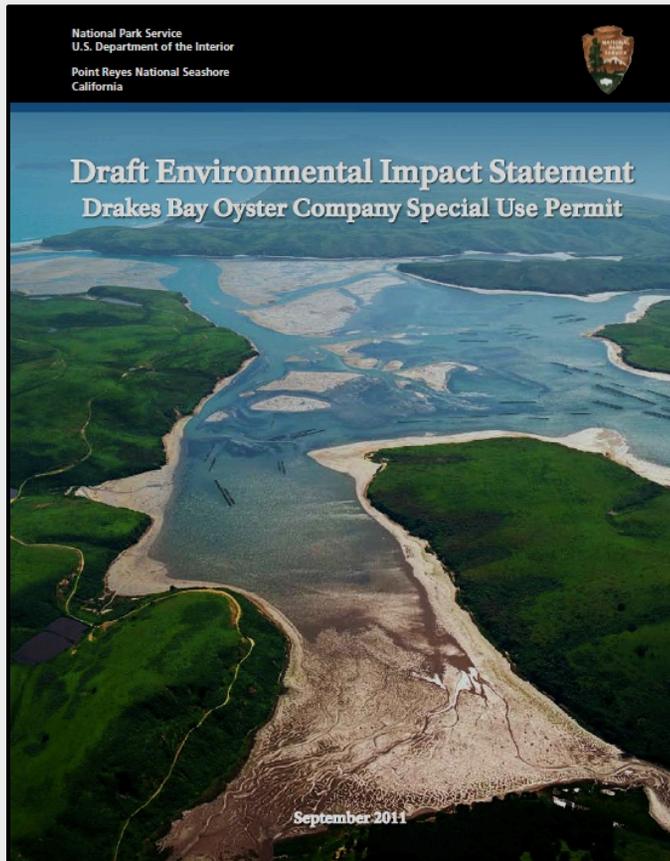


March 2011
Final Report



U.S. Department of Transportation
Federal Aviation Administration

NPS ignored appropriate data on DBOC noise-generating boats collected for VOLPE 2011 report and instead used inappropriate data in DEIS



- **What if NPS had data on DBOC boat noise but the data were suppressed?**
- NPS picked microphone PORE 004 location on July 14, 2009.
- PORE 004 microphone was close to NPS secret cameras; microphone & cameras overlapped for 2 weeks summer 2009.
- NPS intentionally picked this “*sound-sensitive area*” on shore of Drakes Estero near DBOC oyster boats and workers.
- PORE 004 microphone data should have recorded daily boat trips, but did not.
- VOLPE 2011 report never mentioned DBOC boats, site selection for PORE 004, or lack of DBOC boat recordings.
- NPS DEIS dismissed PORE 004 microphone for false reason: assertion that the bluff blocked the sound.

NPS policy is to pick “*sound-sensitive areas*” for noise measurements

Skip Ambrose
Shan Burson

Soundscape Studies in National Parks

The National Park Service (NPS) recognizes the value and importance of natural sounds. NPS management policy 4.9 states: “The National Park Service will preserve, to the greatest extent possible, the natural soundscapes of parks. Natural soundscapes exist in the absence of human-caused sound. The natural soundscape is the aggregate of all the natural sounds that occur in parks, together with the physical capacity for transmitting natural sounds. Natural sounds occur within and beyond the range of sounds that humans can perceive, and can be transmitted through air, water, or solid materials. The Service will restore degraded soundscapes to the natural condition wherever possible, and will protect natural soundscapes from degradation due to noise (undesirable human-caused sound)” (NPS 2000).

NPS has initiated acoustical studies in several national parks in recent years. In many parks, these studies are conducted with acoustics staff from the Volpe Center (part of the U.S. Department of Transportation) to collect acoustical data necessary to develop air tour management plans (ATMPs) with the Federal Aviation Administration (FAA) as called for in the Air Tour Management Act of 2000. For these and other acoustical studies, a scientifically credible, standardized approach to measuring and managing soundscapes is essential. This paper presents an acoustical primer and outlines the NPS approach to studies of national park soundscapes.

“Soundscape” can be defined as the total ambient acoustical environment associated with a given area such as a national park. In a national park setting, soundscapes may be natural sounds only, or both natural and human-made sounds. Sound is measured in terms of frequency content and amplitude, and can be adjusted (“weighted”) to match the hearing abilities of a given animal. “Frequency” is defined as the number of times

per second (Hz) that the wave of sound repeats itself, and “amplitude” is the relative strength of the pressure level (in decibels, or dB). Humans with normal hearing can hear sounds between 20 Hz and 20,000 Hz, and as low as 0 dB at 1,000 Hz. The range of pressures a human can detect is greater than 1,000,000:1. Because of this very large range, the decibel scale is used. A decibel is the logarithm of a ratio of the measured pressure to a reference pressure.

Figures 1 and 2 illustrate the components of sound; frequency and amplitude. One-third octave band frequency data (31 bands between 20 and 20,000 Hz) are along the X-axis, and amplitude data are along the left Y-axis. The wideband metric (far right) is a single number representing the sum of all the energy in the frequency data. This example is from Jackson Hole, Wyoming, and includes an airplane at 100 Hz and elk bugling between about 1,250 Hz and 5,000 Hz. In Figure 1, all data are flat, or unweighted, and in Figure 2, all data are A-weighted (dBA), or adjusted for the hearing ability of humans. Humans and many other animals do

- Concerning measurement locations, NPS scientists wrote: “... *potential locations should be reviewed by individuals familiar with the park in order to ensure that measurements are made ... with consideration of park management zones, specific soundscape management objectives of those zones, and any sound-sensitive areas.*”
- Placing PORE 004 microphone near NPS cameras was no coincidence.
- Both cameras and microphone measured a sensitive area: DBOC boats relative to harbor seals in Drakes Estero.

NPS managers failed to follow policies concerning soundscape analysis

Other NPS EIS reports picked sound-sensitive areas for noise measurements

Golden Gate National Recreation Area

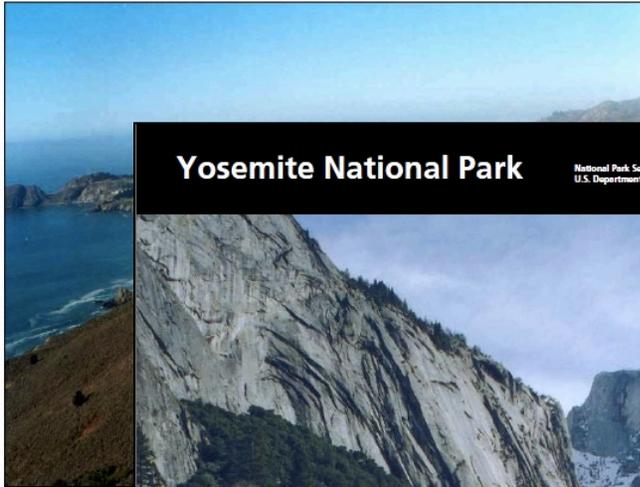
National Park Service
U.S. Department of the Interior
www.nps.gov/goga



Marin Headlands and Fort Baker Transportation Infrastructure and Management Plan

Marin County, California

Final Environmental Impact Statement



March 2009

Yosemite National Park

National Park Service
U.S. Department of the Interior



Yosemite
Environmental Education
Center

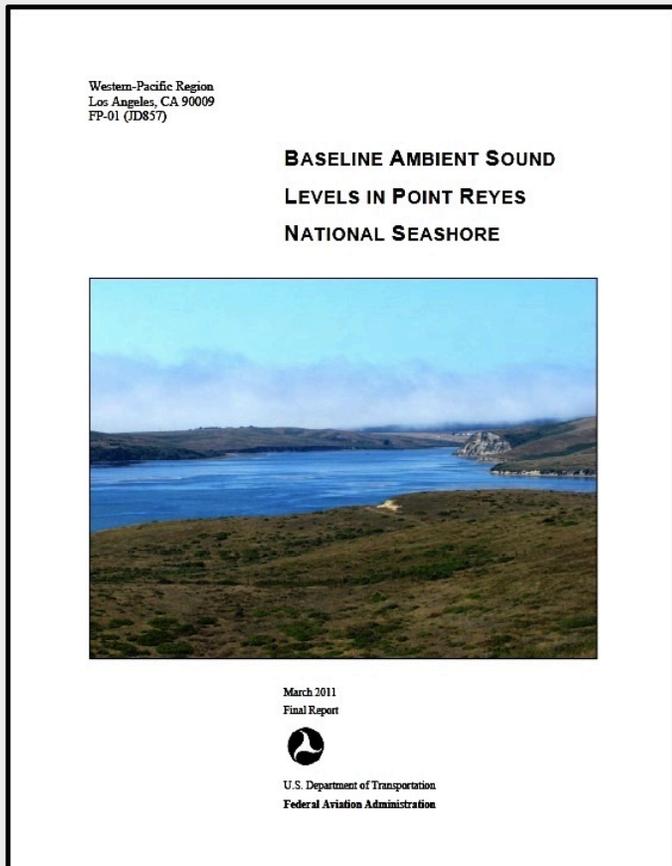
Final
Environmental
Impact Statement

January 2010



- The GGNRA NPS EIS stated: *“In addition, an ambient noise survey was conducted on July 20, 2005 (a weekday) to document the typical existing noise environment at various locations, specifically at noise-sensitive receptors within the study area (see Table 3-13). Noise-sensitive land uses generally include those uses where exposure to noise would result in adverse effects ...”*
- Focus is on sound-sensitive areas

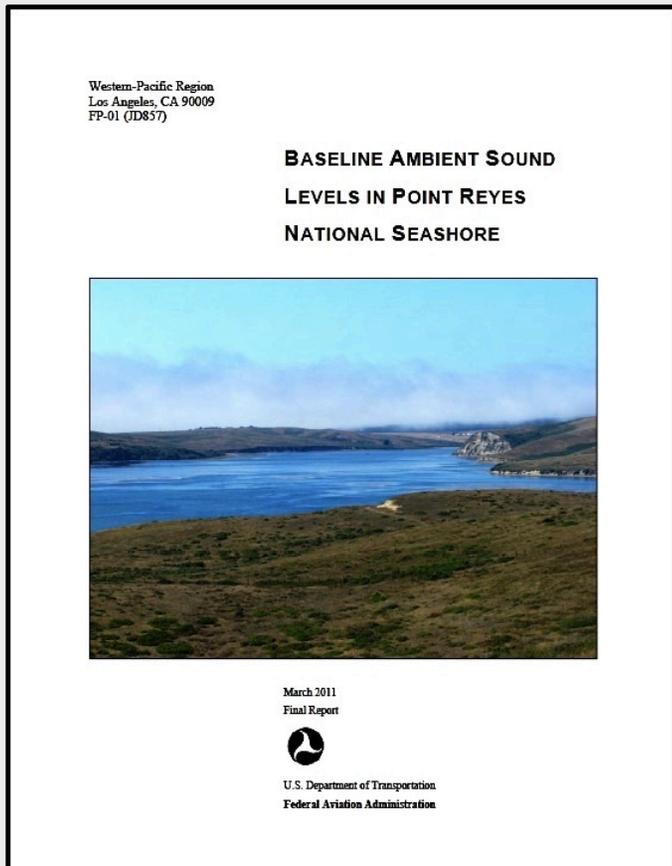
NPS policy is to pick “*sound-sensitive areas*” for noise measurements



- VOLPE 2011 report stated: “*These sites were selected during a meeting on July 14, 2009 between Point Reyes NPS and FAA Western-Pacific Regional personnel, and the Volpe Center (with NPS Natural Sound Program Officer participating via phone).*”
- The VOLPE report made no mention of “*sound-sensitive areas*” yet microphone PORE 004 was in just such a location near the secret cameras along Drakes Estero.
- NPS DEIS acknowledged that DBOC noise should have influenced its recordings at PORE 004 microphone.

NPS DEIS failed to follow policies concerning soundscape analysis

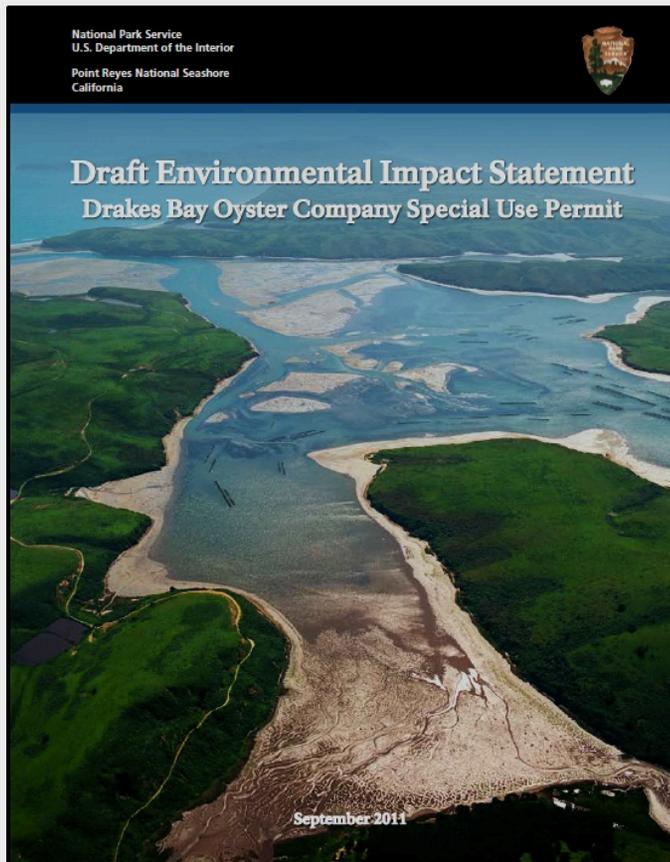
NPS policy is to pick “*sound-sensitive areas*” for noise measurements



- Concerning the directive to monitor “*noise-generating human activities*” from DBOC, NPS failed. No data from DBOC were presented in DEIS.
- If DEIS was correct in its numbers, then microphone PORE 004 should have recorded daily DBOC boat trips out west channel to oyster bags on OB and UEN.
- VOLPE 2011 report said nothing about DBOC boats.
- DEIS simply stated that the bluff below the microphone likely blocked the sound path from boats to microphone.
- As shown here, that was incorrect. The sound path was unobstructed.

NPS DEIS failed to follow policies concerning soundscape analysis

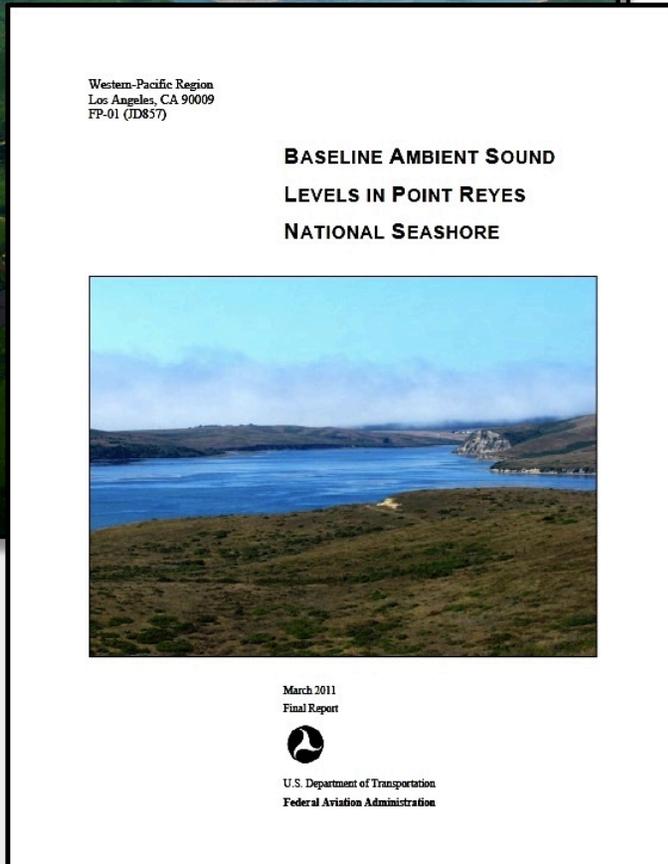
NPS policy is to pick “*sound-sensitive areas*” for noise measurements



- The National Academy of Sciences study on Drakes Estero was released in May 2009.
- The NPS supported a petition to the Marine Mammal Commission to study the impact of DBOC boats on harbor seals in June 2009.
- Why was the microphone PORE 004 site picked on July 14, 2009 if not because this was a “*sound-sensitive area*” along Drakes Estero where DBOC boats and equipment should be recorded?
- This site was close to where the PRNS Superintendent had placed the NPS secret cameras. Yet ...

NPS DEIS failed to follow policies concerning soundscape analysis

NPS policy is to pick “*sound-sensitive areas*” for noise measurements



- ... the VOLPE 2011 report neither mentioned importance of PORE 004 site selection nor whether noise from DBOC boats or equipment were detected in the 59-day recordings.
- Although the DEIS did mention the importance of location, it then dismissed it due to bluff below the microphone.
- What follows here is our analysis of the data collected by PORE 004.
- The microphone did indeed record DBOC boats, but the implications of which boats were recorded (weekly in main channel) vs. which were not (daily in west and lateral channels) has profound implications in contradicting the DEIS.

NPS DEIS failed to follow policies concerning soundscape analysis

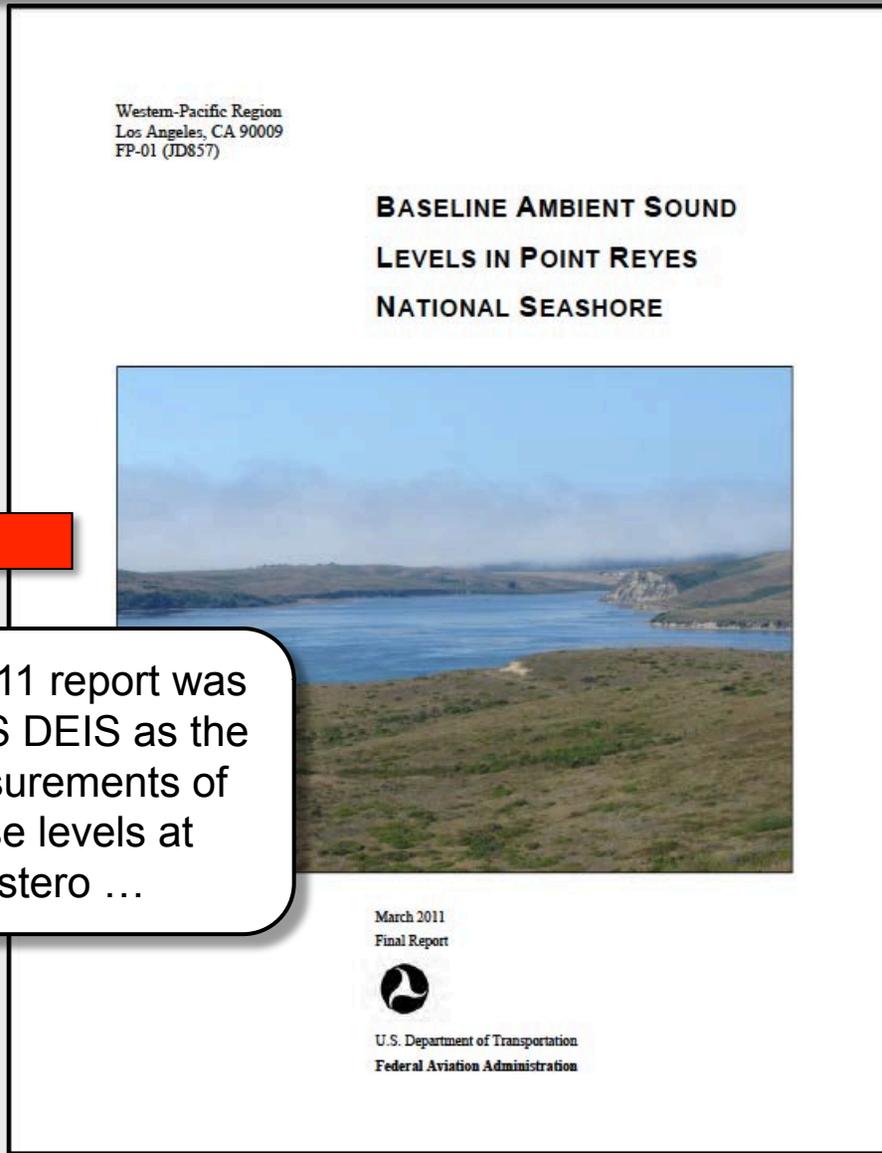
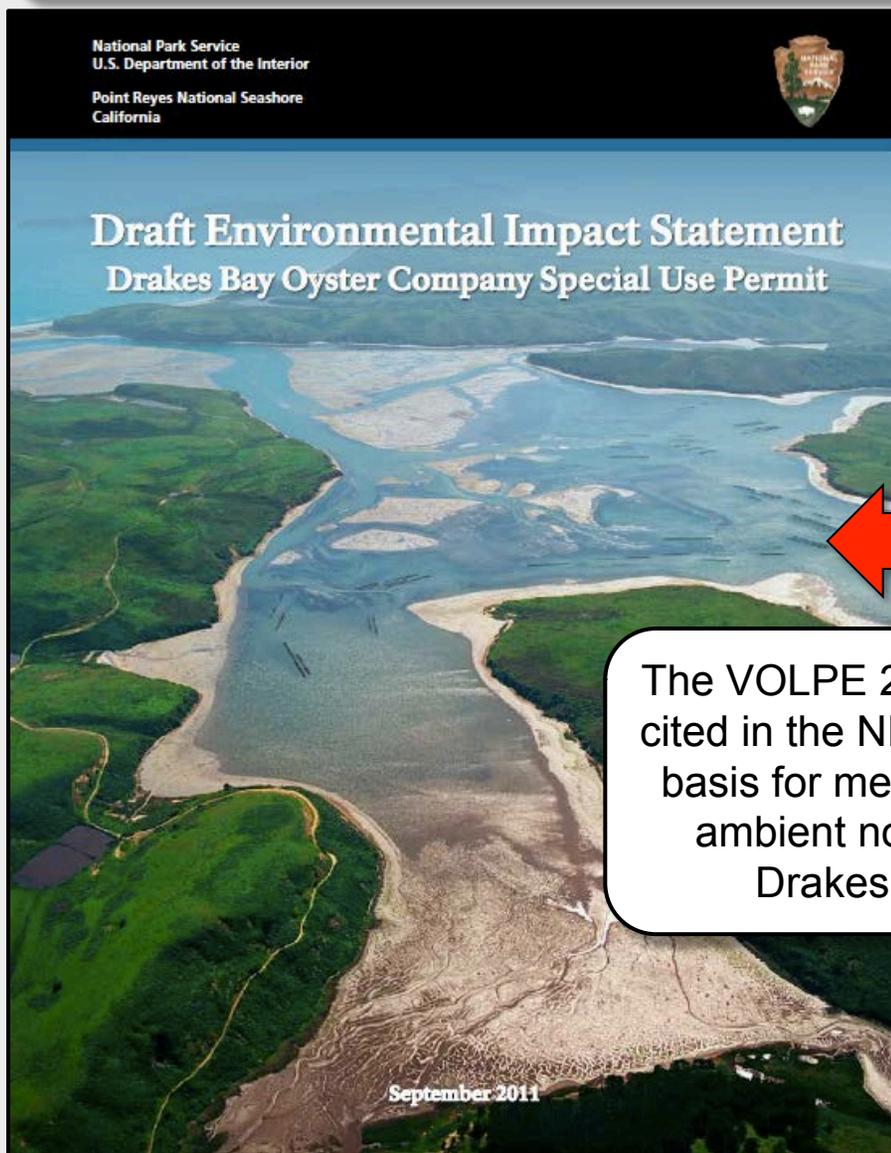
NPS scientists knew DBOC boats were not that loud from direct observation



- NPS has video recordings of DBOC boats and seals.
- This video was made at 2:05 pm on May 15, 2008 by NPS scientist Sarah Codde.
- Video made from a location near PORE 004 microphone and NPS secret cameras.
- Video showed a DBOC boat travelling north in west channel. It was a calm day.
- Audio portion of video recorded shore birds down on Drakes Estero.
- Boat engine was not heard on audio.
- This contradicted the DEIS.
- [This also contradicts the MMC 2011 report, as described elsewhere.]

NPS video recording showed DBOC boats not be heard from across estero

NPS DEIS (left) used data from VOLPE 2011 report (right) recorded by PORE 004 microphone in July 2009 and January 2010 along Drakes Estero



The VOLPE 2011 report was cited in the NPS DEIS as the basis for measurements of ambient noise levels at Drakes Estero ...

Did VOLPE PORE 004 microphone record the DBOC boats? Which ones?

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If the NPS DEIS numbers are correct, then the VOLPE PORE 004 microphone at Drakes Estero should have recorded the DBOC boats ...

Appendix A

A.4 Site PORE004 – Drakes Head Estero

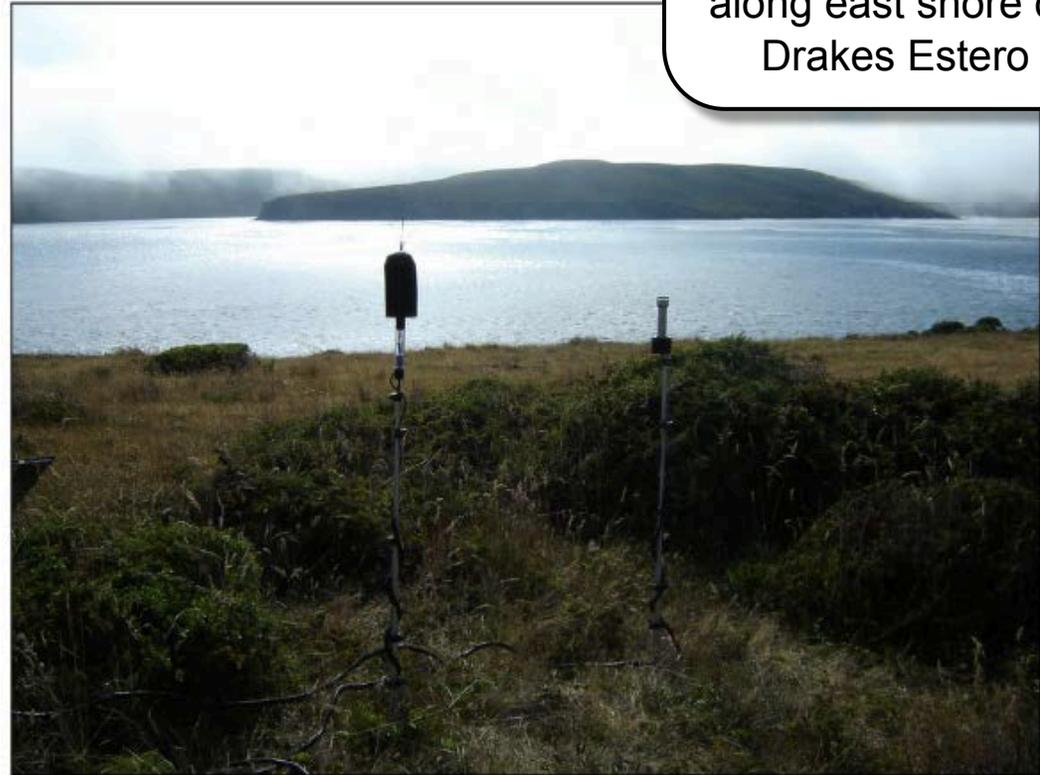


Figure 53. Site PORE004: Description and photograph.

Note the clear unobstructed view of Drakes Estero from the PORE 004 microphone

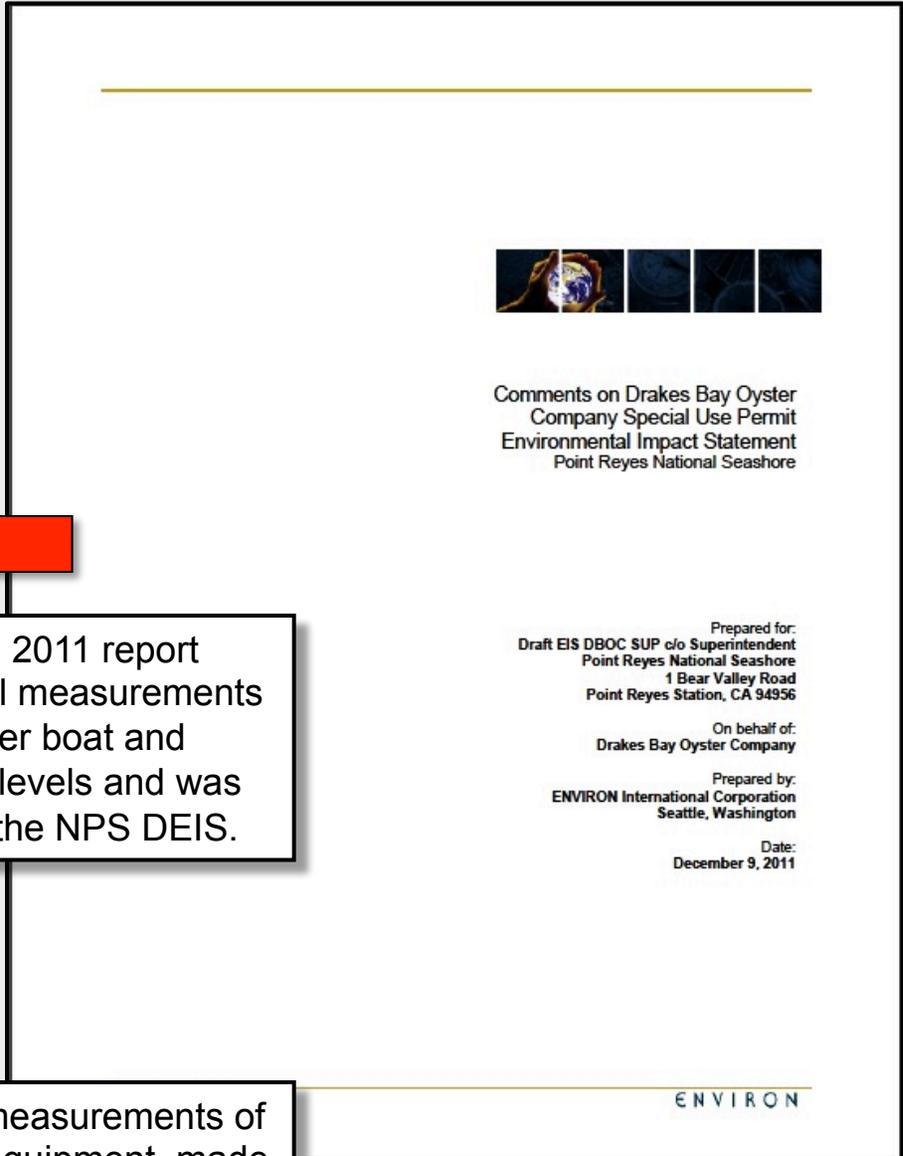
VOLPE PORE 004 microphone located very close to NPS secret cameras along east shore of Drakes Estero

NPS DEIS (left) was contradicted by data from ENVIRON 2011 report (right)

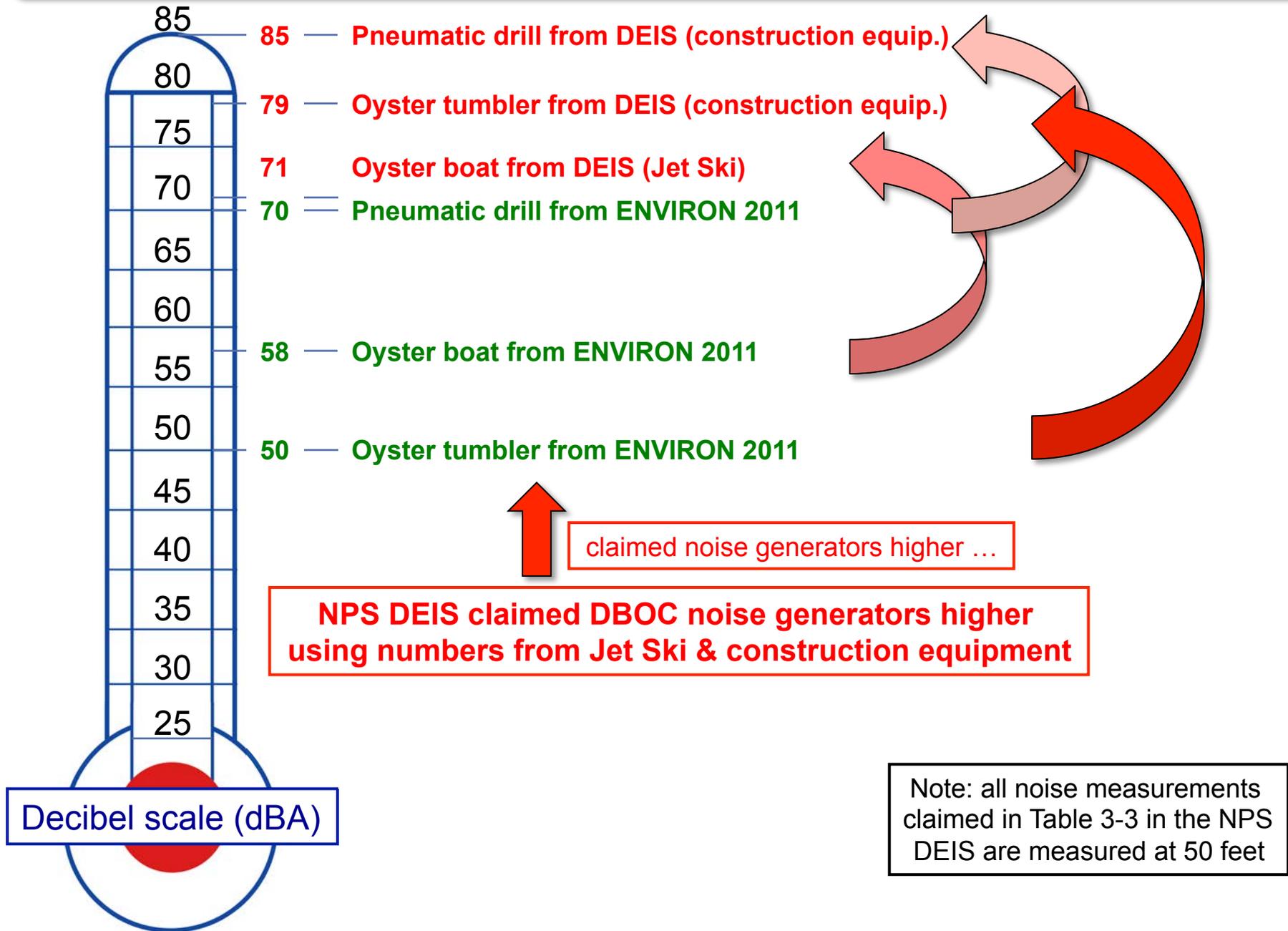


The ENVIRON 2011 report provided the actual measurements of DBOC oyster boat and equipment noise levels and was highly critical of the NPS DEIS.

These are actual measurements of DBOC boats and equipment, made at the request of DBOC.



NPS DEIS Chapter 3 claimed DBOC sound levels higher using false data



NPS DEIS Chapter 4 claimed ambient sound lower using incorrect standard

Here are the three measures by which VOLPE 2011 listed ambient noise measurements in Table 2. The “*lowest daily ambient level*” was neither listed nor was the term ever used in the VOLPE 2011 report, yet that is the number the NPS DEIS picked for Tables 4-2 to 4-4 in Chapter 4.

L_{Aeq} dBA	L_{50} dBA	L_{90} dBA
---------------	--------------	--------------

NPS DEIS claimed ambient background lower using a number not found in summary tables in VOLPE 2011

... and ambient background lower



- 41 — L_{Aeq} from VOLPE 2011 (standard for EIS reports)
- 34 — L_{50} from VOLPE 2011 (text of DEIS) (and Tables in June non-public version)
- 24 — “lowest daily ambient level” (Tables 4-2 to 4-4 in DEIS September version)

Decibel scale (dBA)

85

80

75

70

65

60

55

50

45

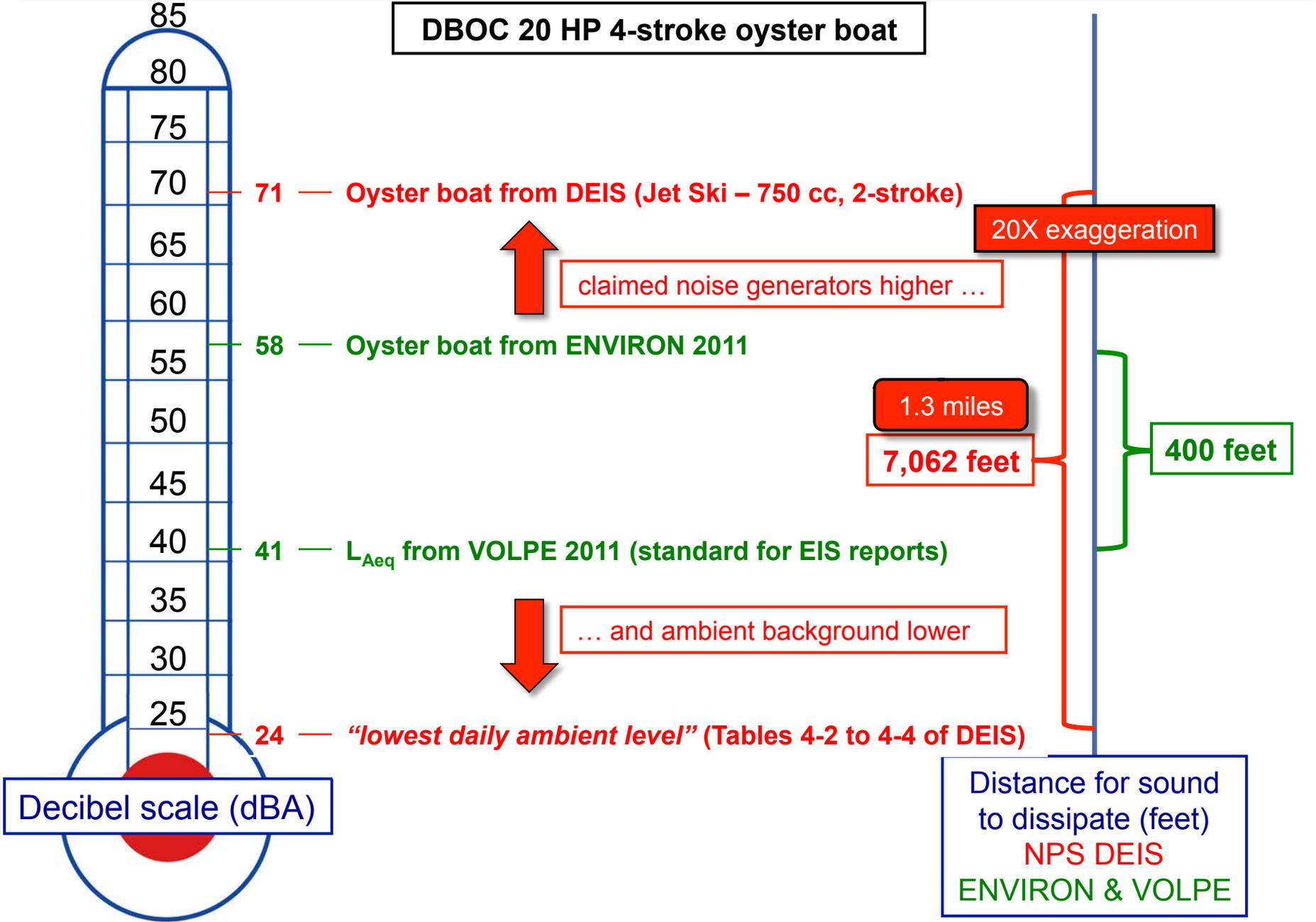
40

35

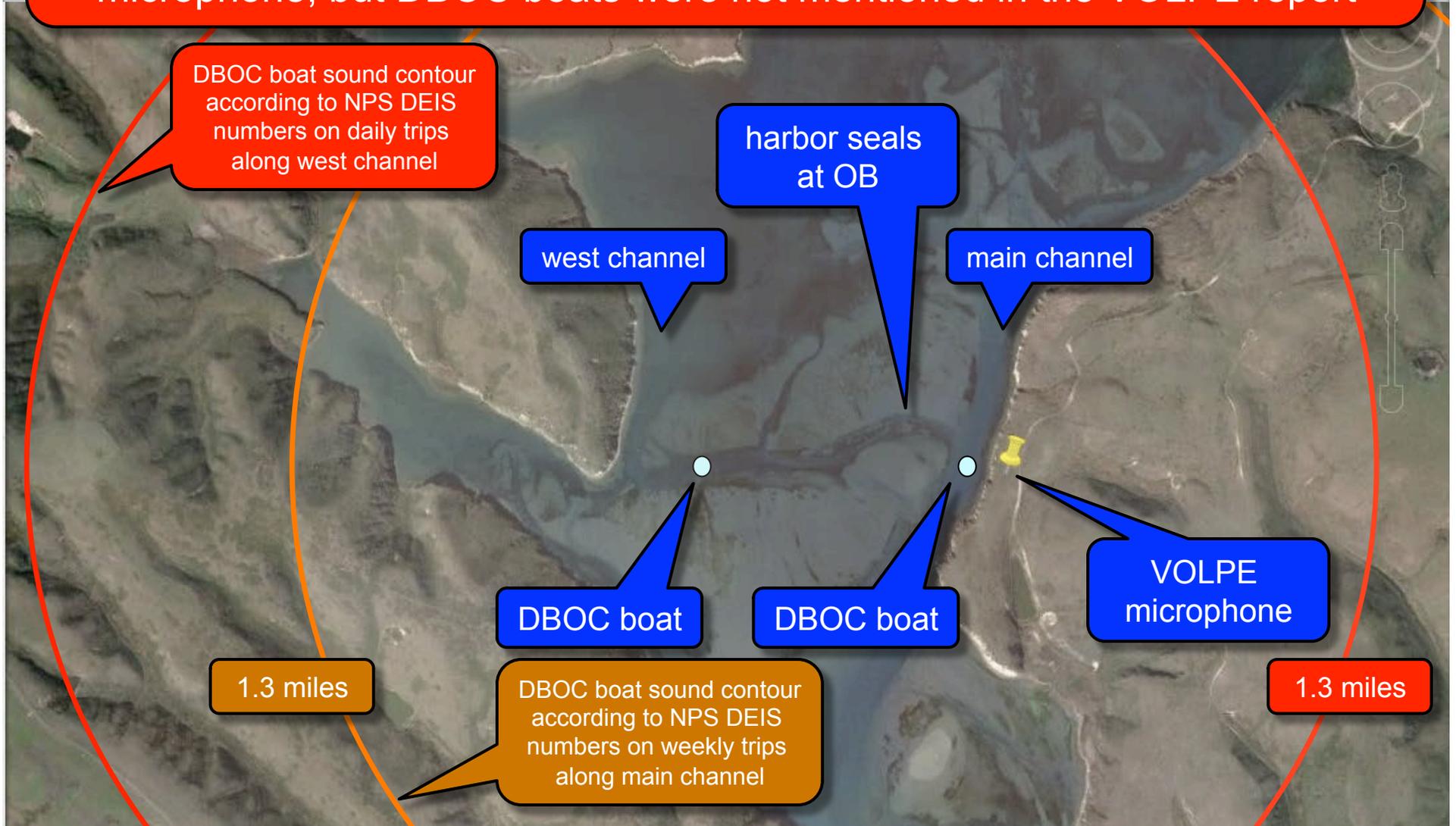
30

25

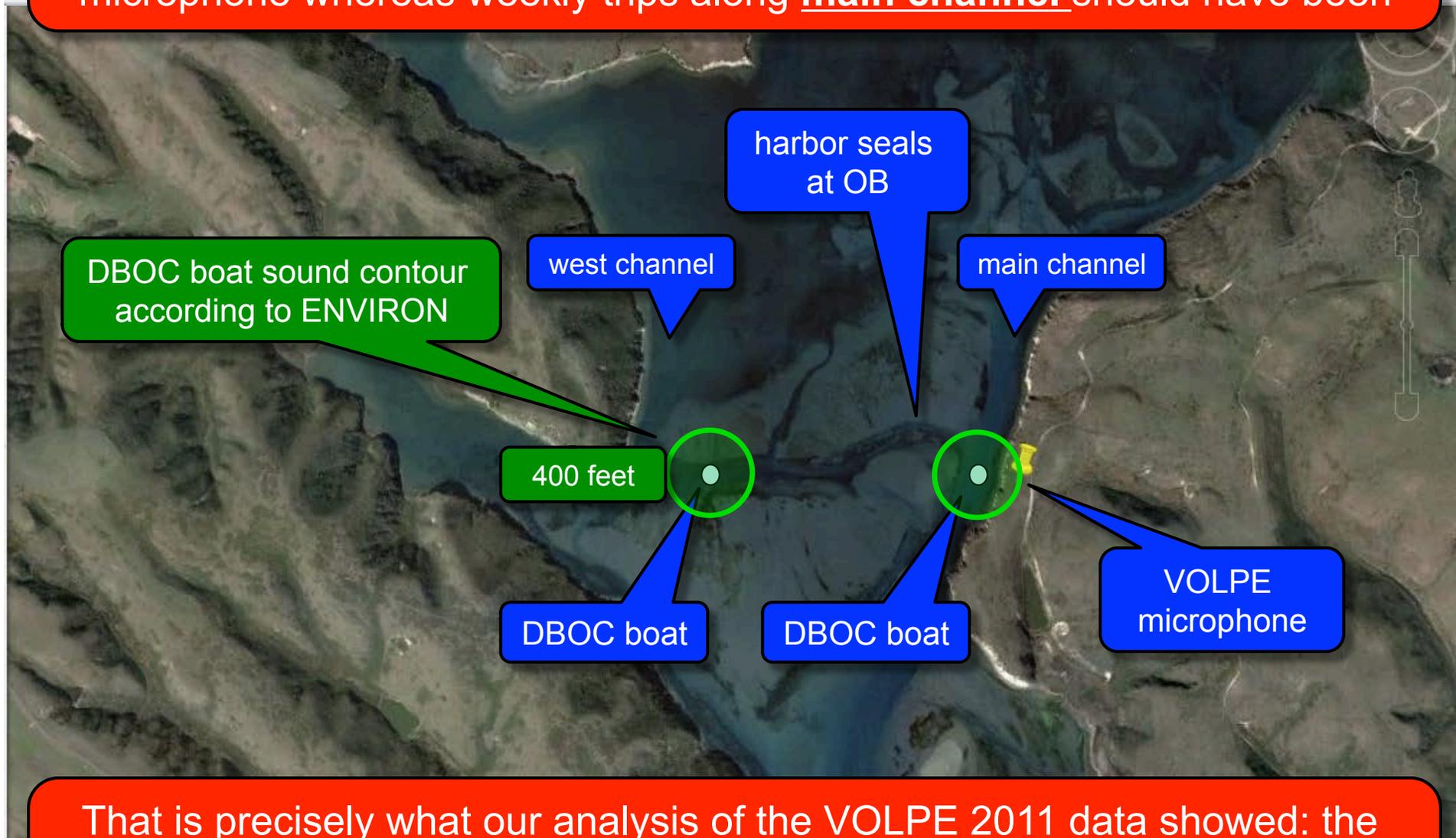
NPS DEIS exaggerated DBOC oyster boat sound levels & distances



According to DEIS noise measurements of DBOC oyster boats, the noise from the DBOC boats should have been recorded by VOLPE PORE 004 microphone, but DBOC boats were not mentioned in the VOLPE report



According to ENVIRON noise measurements of DBOC boats, daily DBOC boat trips along west channel should not have been recorded by microphone whereas weekly trips along main channel should have been



That is precisely what our analysis of the VOLPE 2011 data showed: the weekly boat trips in the main channel were recorded by the PORE 004 microphone, while the daily boat trips in the west channel were not

According to DEIS, VOLPE PORE 004 microphone on bluff over Drakes Estero may not have recorded boats due to blocking of sound by bluff ...

TABLE 3-3. NOISE GENERATORS AT DBOC

From NPS DEIS Chapter 3

Equipment	Description†	Frequency of Use (Weather Permitting)†	Representative Sound Level at 50 Feet (dBA) ^a
Motorboat	20 HP, 4-cycle engine	Up to 12 40-minute trips/day	71*
Motorboat	40 HP, 4-cycle engine	Up to 12 40-minute trips/day	71*
		2 to 4 hours/day	
	drills	Approximately	
	ters by size,	Approximately	

... unless features of the topography blocked the sound of the DBOC boats. Did the bluff block the sound?

“2009 sound measurements” refers to VOLPE PORE 004 microphone along east shore of Drakes Estero near location of NPS secret cameras

† Data from various sources, including: **FHWA 2006.

^a Hourly values

Topography can affect sound transmission through air. Steep topography such as the bluffs around some of Drakes Estero can block sound transmission. Because the 2009 sound measurements used in this EIS were taken on a bluff well above Drakes Estero, the measurements may have recorded limited mariculture-related noises.

Puzzling: if boat noise blocked from reaching PORE 004 site as suggested in DEIS, then why did NPS pick location for “*sound-sensitive area*”?

The VOLPE 2011 report mentioned airplanes and “hikers, campers, talking, motor vehicles” for human intrusion, but does not mention the oyster farm

Table 2. Summary of measured ambient sound level data for both summer and winter seasons.*

Acoustic Zone	Site Name	Site ID	Total # Days	Existing Ambient						Existing Ambient Without Air Tours† (Daytime Data Only 7 am to 7 pm)	Existing Ambient Without All Aircraft (Daytime Data Only 7 am to 7 pm)	Natural Ambient (Daytime Data Only 7 am to 7 pm)
				Daytime Data Only 7 am to 7 pm			Nighttime Data Only 7 pm to 7 am					
				L _{Aeq} (dBA)	L ₅₀ (dBA)	L ₉₀ (dBA)	L _{Aeq} (dBA)	L ₅₀ (dBA)	L ₉₀ (dBA)	L ₅₀ (dBA)	L ₅₀ (dBA)	L ₅₀ (dBA)
Summer Season												
Developed	Bear Valley Visitor Center	PORE 001	30	40.0	36.7	31.3	32.1	23.6	18.0	36.1	35.1	31.3
Mixed Forest (Inverness Ridge)	Fire Road Trail	PORE 002	29	37.1	31.8	26.3	36.6	31.8	23.3	31.1	29.9	29.0
Scrub-Grassland (Tomales Point Wilderness)	Tomales Bay Point	PORE 003	29	39.9	35.3	28.7	40.4	38.8	31.3	34.9	34.6	34.1
Wetlands (Estero)	Drakes Head Estero	PORE 004	30	40.3	33.8	25.7	39.6	33.2	24.7	33.0	32.4	32.2
Winter Season												
Developed	Bear Valley Visitor Center	PORE 001	30	45.5	38.8	32.8	40.2	33.6	25.5	38.6	36.7	32.8
Mixed Forest (Inverness Ridge)	Fire Road Trail	PORE 002	30	51.9	38.1	23.0	52.9	37.1	22.0	37.0	33.5	32.8
Scrub-Grassland (Tomales Point Wilderness)	Tomales Bay Point	PORE 003	27	42.4	37.6	31.9	44.7	37.6	32.7	37.2	36.2	36.2
Wetlands (Estero)	Drakes Head Estero	PORE 004	29	41.6	35.8	25.7	41.2	35.4	28.4	34.9	34.1	33.9

From VOLPE 2011 report

Day vs. night difference are small (0.4 to 0.6 dBA) and not attributed to differences in DBOC boats and workers

Airplanes contribute 1.4 to 1.7 dBA above natural ambient, but other human sources contribute only 0.2 dBA above natural

The DEIS stated that “these values overstate the natural background source level in Drakes Estero relative to DBOC noise ...” but ...

Table 2. Summary of measured ambient sound level data for both summer and winter seasons.*

Acoustic Zone	Site Name	Site ID	Total # Days	Existing Ambient						Existing Ambient Without Air Tours† (Daytime Data Only 7 am to 7 pm)	Existing Ambient Without All Aircraft (Daytime Data Only 7 am to 7 pm)	Natural Ambient (Daytime Data Only 7 am to 7 pm)
				Daytime Data Only 7 am to 7 pm			Nighttime Data Only 7 pm to 7 am					
				L _{Aeq} (dBA)	L ₅₀ (dBA)	L ₉₀ (dBA)	L _{Aeq} (dBA)	L ₅₀ (dBA)	L ₉₀ (dBA)	L ₅₀ (dBA)	L ₅₀ (dBA)	L ₅₀ (dBA)
Summer Season												
Developed	Bear Valley Visitor Center	PORE 001	30	40.0	36.7	31.3	32.1	23.6	18.0	36.1	35.1	31.3
Mixed Forest (Inverness Ridge)	Fire Road Trail	PORE 002	29	37.1	31.8	26.3	36.0	23.6	18.0	36.1	29.9	29.0
Scrub-Grassland (Tomales Point Wilderness)	Tomales Bay Point	PORE 003	29	39.9	35.3	28.7	40.4	23.6	18.0	36.1	34.6	34.1
Wetlands (Estero)	Drakes Head Estero	PORE 004	30	40.3	33.8	25.7	39.0	23.6	18.0	36.1	32.4	32.2
Winter Season												
Developed	Bear Valley Visitor Center	PORE 001	30	45.5	38.8	32.8	40.1	23.6	18.0	36.1	36.7	32.8
Mixed Forest (Inverness Ridge)	Fire Road Trail	PORE 002	30	51.9	38.1	23.0	52.9	23.6	18.0	36.1	36.7	32.8
Scrub-Grassland (Tomales Point Wilderness)	Tomales Bay Point	PORE 003	27	42.4	37.6	31.9	44.7	37.6	32.7	37.2	36.2	36.2
Wetlands (Estero)	Drakes Head Estero	PORE 004	29	41.6	35.8	25.7	41.2	35.4	28.4	34.9	34.1	33.9

From VOLPE 2011 report

Median natural ambient for all four locations was 32.8 dBA while median natural ambient for Drakes Estero was 33.0 dBA. This did not account for higher winds at the exposed Estero.

... this too is puzzling, since the “natural ambient” sound level at Drakes Estero is no different than the median of all four microphone locations

The VOLPE 2011 report mentioned airplanes and “*hikers, campers, talking, motor vehicles*” for human intrusion, but does not mention the oyster farm

A.4 Site PORE004 – Drakes Head Estero

From VOLPE 2011 report



Observations

Site PORE004 was located to near the Drakes Estero and Estero Trail in an exposed area with nearby grasses and brush and a short distance from a bluff overlooking the Estero. The site is fairly exposed and subject to high winds at times. This area also has a wide variety of natural sounds from wind to various types of birds and sea-fowl and occasional sea lions. Visitor-use is low.

The overall median daytime sound level during the summer season was 33.8 dBA and human-related sounds were audible during 17% of the daytime hours. The overall median daytime sound level during the winter season was 35.8 dBA (only 2 dBA louder than summer) and human-related sounds were audible during 20% of the daytime hours. The daily sound level graphs demonstrate the influence of wind speed on the sound levels at this site. There was a small increase in audible aircraft overflights during the winter. Rain was much more prevalent in the winter season. There was also a noticeable lack of insect noise during the winter compared to summer. Birds were audible for most of the daytime during both seasons.

Human-related sounds were mostly aircraft (13-18%), with a small amount of hikers and people talking (3%).

At Drakes Estero, 80-83% of sound is natural, 13-18% is from aircraft, and 3% is from “human” sources that included “hikers, campers, talking, motor vehicles” but oyster farm boats and equipment were not mentioned

Table 3. Summary of acoustic observer log data (in situ and office listening combined) for all sites for both summer and winter season

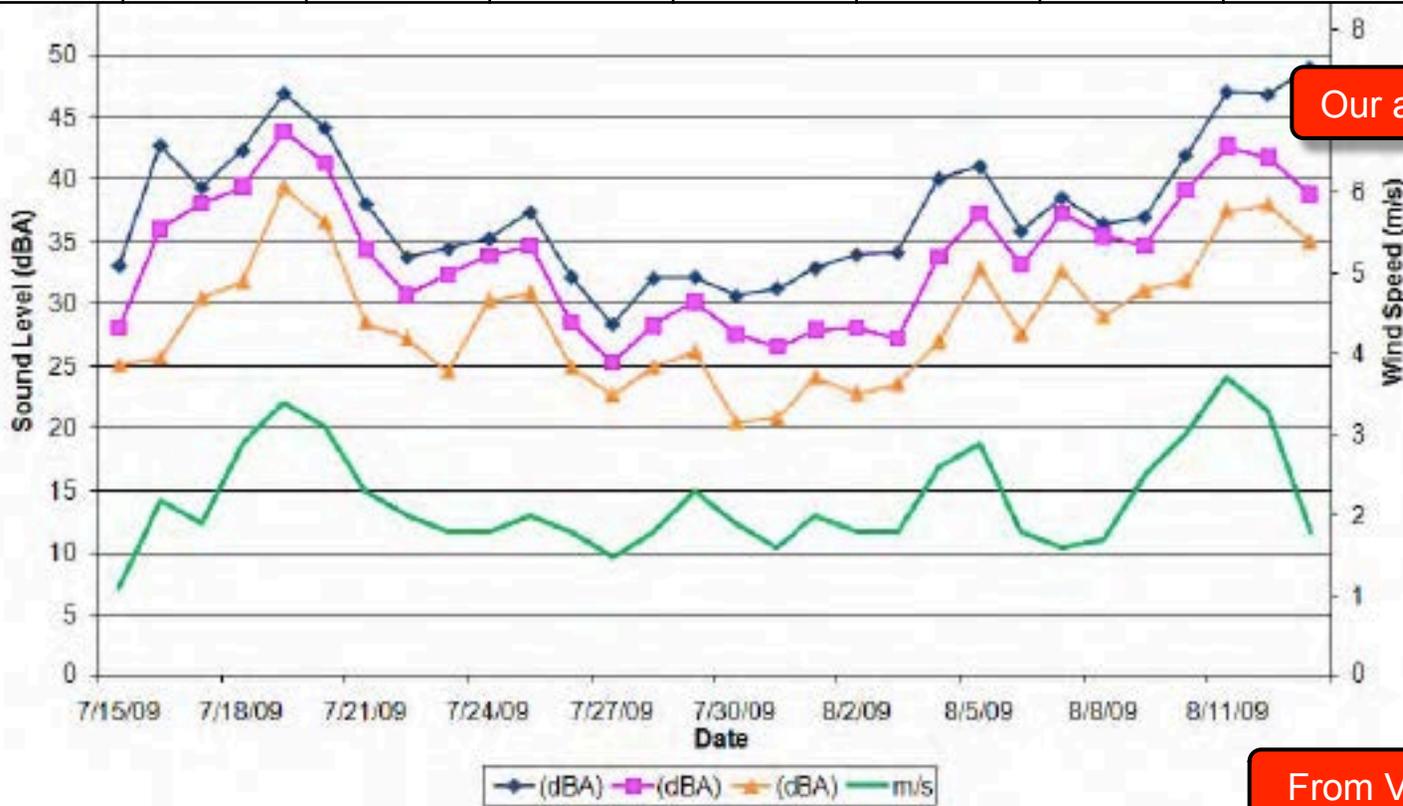
From VOLPE 2011 report

Acoustic Zone	Site Name	Site ID	Level of Visitor-Use	% Time Audible			
				Air Tour Aircraft	Other Aircraft	Human	Natural
Summer Season							
Developed	Bear Valley Visitor Center	PORE001	High	10.5%	16.6%	64.9%	8.0%
Mixed Forest (Inverness Ridge)	Fire Road Trail	PORE002	Moderate	12.8%	20.9%	14.0%	52.2%
Scrub-Grassland (Tomales Point Wilderness)	Tomales Bay Point	PORE003	Moderate	5.7%	3.9%	6.8%	83.6%
Wetlands (Estero)	Drakes Head Estero	PORE004	Low	8.4%	5.0%	3.4%	83.3%
Winter Season							
Developed	Bear Valley Visitor Center	PORE001	High	2.3%	27.2%	58.9%	11.7%
Mixed Forest (Inverness Ridge)	Fire Road Trail	PORE002	Moderate	5.9%	20.4%	2.7%	71.0%
Scrub-Grassland (Tomales Point Wilderness)	Tomales Bay Point	PORE003	Moderate	6.0%	15.0%	1.1%	77.9%
Wetlands (Estero)	Drakes Head Estero	PORE004	Low	9.1%	8.5%	2.7%	79.7%

Human-related sounds were mostly aircraft (13-18%), with a small amount of hikers and people talking (3%).

Daily sound levels at Drakes Estero correlate with wind speed but not with whether DBOC employees were working (Tues – Sat) or not (Sun – Mon)

Combined summer and winter	Sunday DBOC off	Monday DBOC off	Tues. DBOC on	Wed. DBOC on	Thurs. DBOC on	Friday DBOC on	Sat. DBOC on	All DBOC off	All DBOC on
L₅₀	36.6	36.4	35.8	34.4	34.0	34.7	35.7	36.5	34.9
N =	8	8	8	9	8	9	9	16	43



Our analysis of VOLPE data

- LAeq
- L50
- L90
- wind

From VOLPE 2011 report

Figure 57. Daily sound levels and wind speeds for Site PORE004 for summer season.

According to DEIS, VOLPE PORE 004 microphone on bluff over Drakes Estero may not have recorded boats due to blocking of sound by bluff ...

The recordings from PORE 004 microphone got dismissed with this sentence.

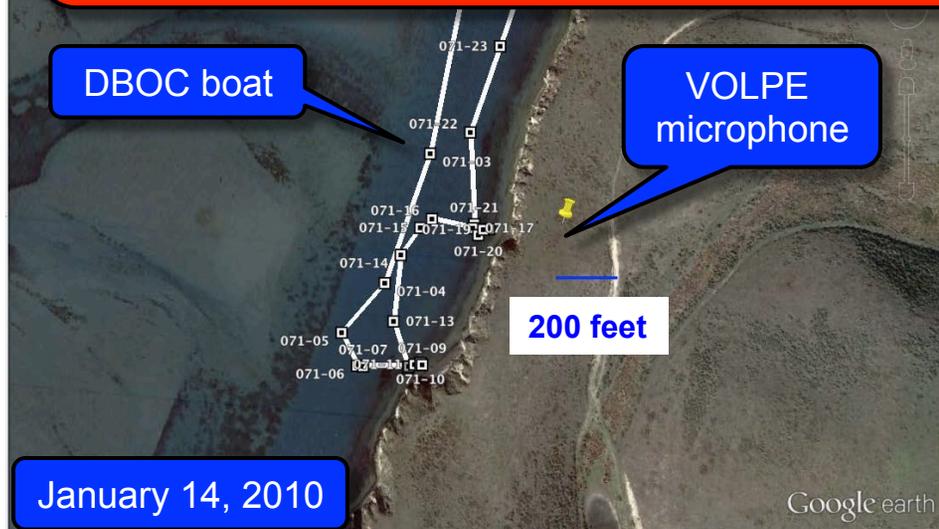
From NPS DEIS Chapter 3

Topography can affect sound transmission through air. Steep topography such as the bluffs around some of Drakes Estero can block sound transmission. Because the 2009 sound measurements used in this EIS were taken on a bluff well above Drakes Estero, the measurements may have recorded limited mariculture-related noises.

“2009 sound measurements” refers to VOLPE PORE 004 microphone along east shore of Drakes Estero near location of NPS secret cameras

... but this can be directly tested using Google earth elevation profiles of DBOC boats and PORE 004 microphone to determine if the sound path from the boat to the microphone was obstructed as suggested in the DEIS

Google earth map of GPS recording of four DBOC boat trips along main channel in Jan-Feb 2010 vs. VOLPE PORE 004 microphone: the sound path was unobstructed and the microphone should have recorded the boat



Google earth map of GPS recording of January 14, 2010 DBOC boat trip along main channel vs. VOLPE PORE 004 microphone: the sound path was unobstructed and the microphone should have recorded the boat



Google earth map and elevation profile of GPS recording of DBOC boat trip January 14, 2010 vs. VOLPE PORE 004 microphone: 071-4 @ 13:51:34

DEIS claimed DBOC boat generates 71 dBA noise at 50 ft. At 580 ft, boat should be 50 dBA, above 41 dBA L_{Aeq} ambient and especially above 24 dBA ambient as in DEIS.

DBOC boat

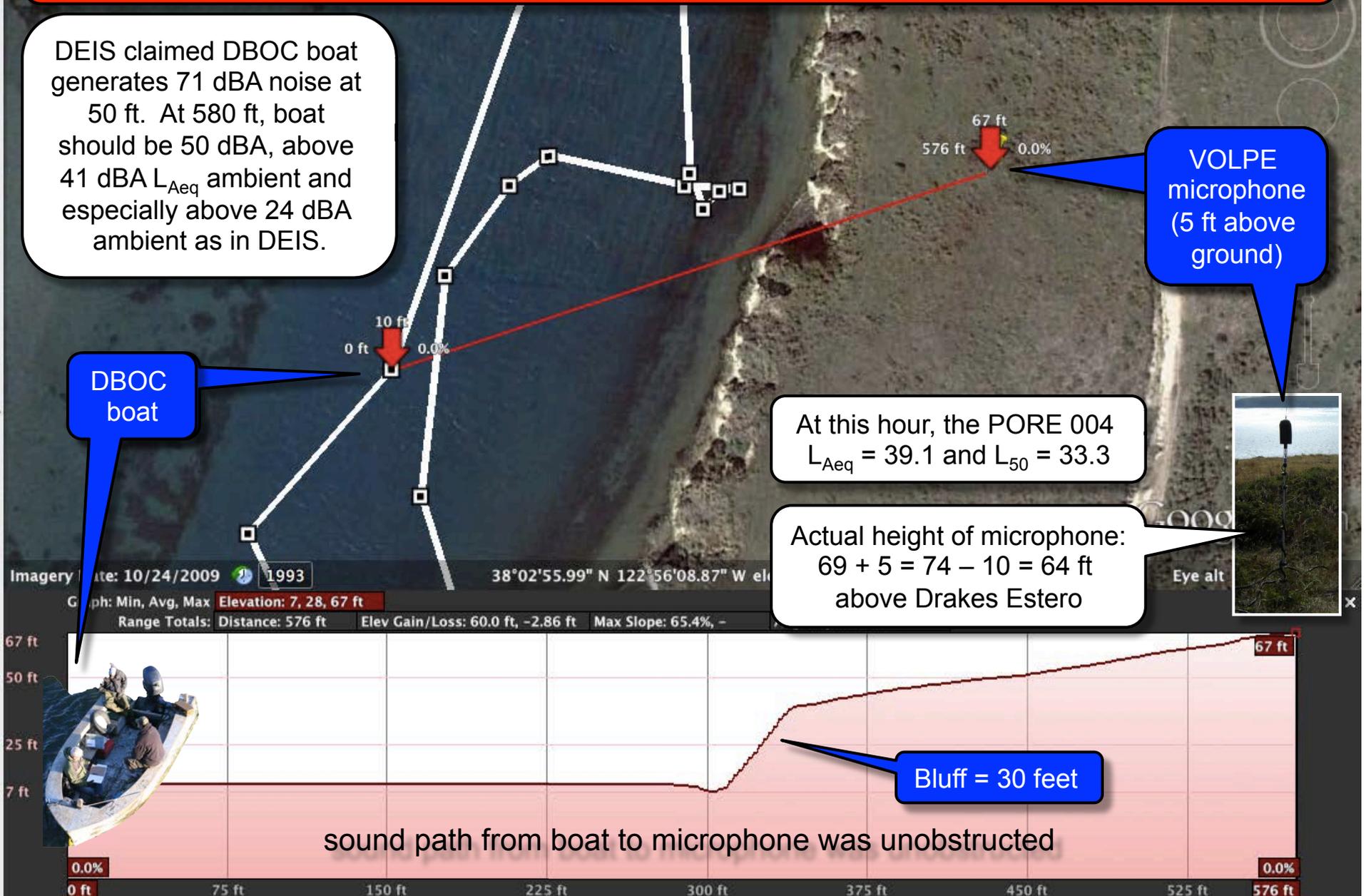
VOLPE microphone (5 ft above ground)

At this hour, the PORE 004 $L_{Aeq} = 39.1$ and $L_{50} = 33.3$

Actual height of microphone:
 $69 + 5 = 74 - 10 = 64$ ft
above Drakes Estero

Bluff = 30 feet

sound path from boat to microphone was unobstructed



Google earth map and elevation profile of GPS recording of DBOC boat trip January 14, 2010 vs. VOLPE PORE 004 microphone: 071-14 @ 13:55:44

DEIS claimed DBOC boat generates 71 dBA noise at 50 ft. At 520 ft, boat should be 51 dBA, above 41 dBA L_{Aeq} ambient and especially above 24 dBA ambient as in DEIS.

DBOC boat

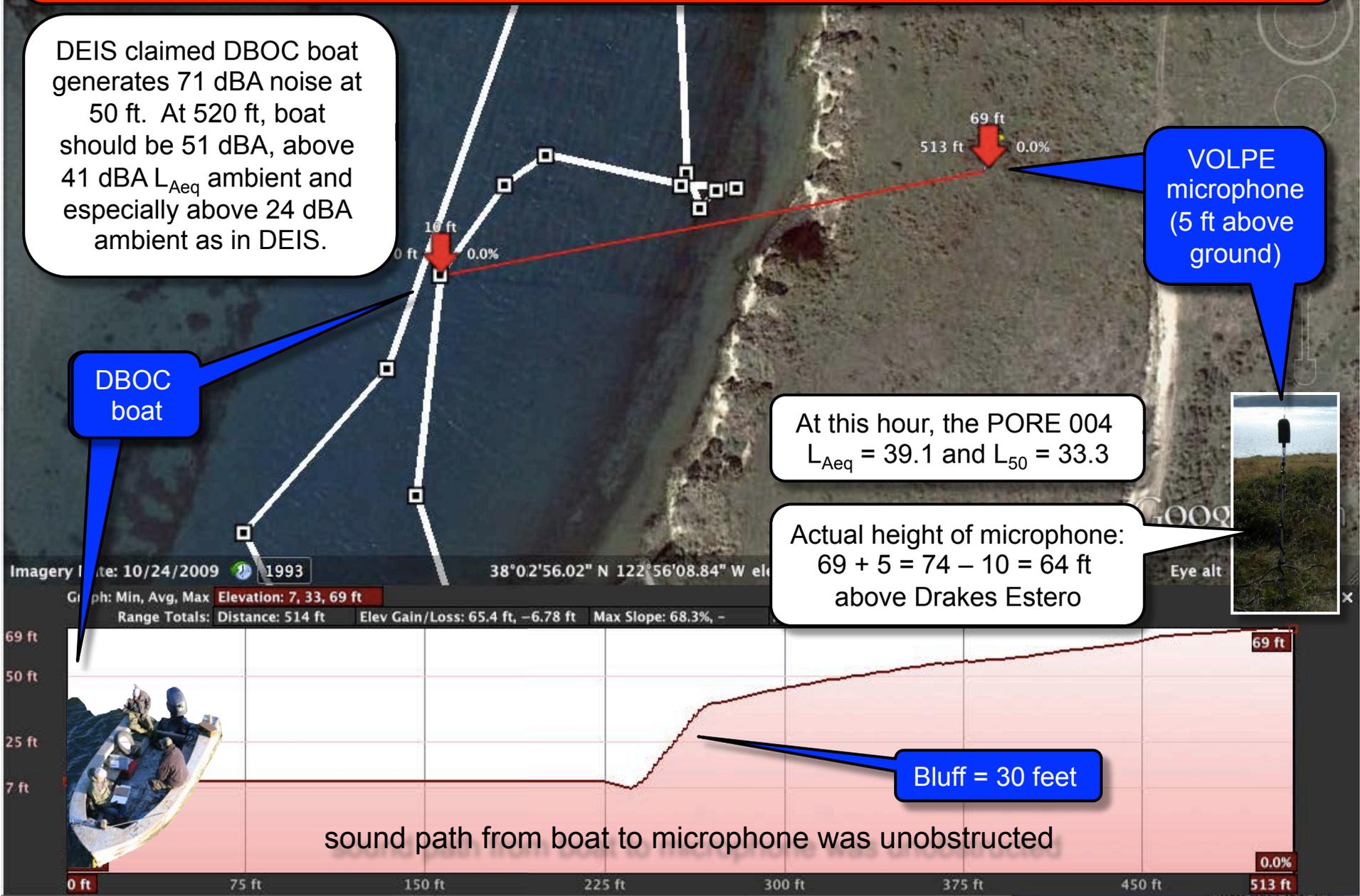
VOLPE microphone (5 ft above ground)

At this hour, the PORE 004 $L_{Aeq} = 39.1$ and $L_{50} = 33.3$

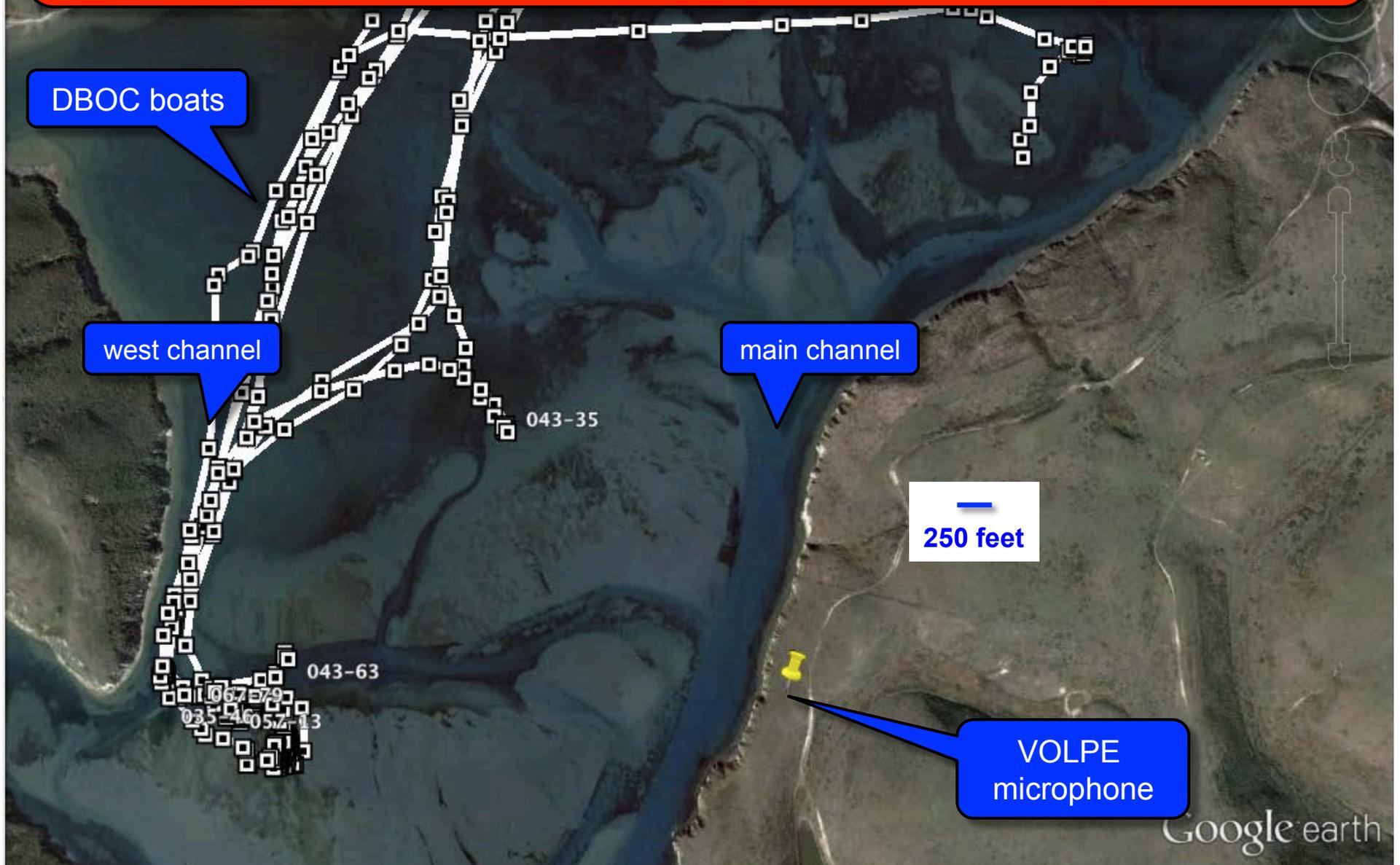
Actual height of microphone: $69 + 5 = 74 - 10 = 64$ ft above Drakes Estero

Bluff = 30 feet

sound path from boat to microphone was unobstructed

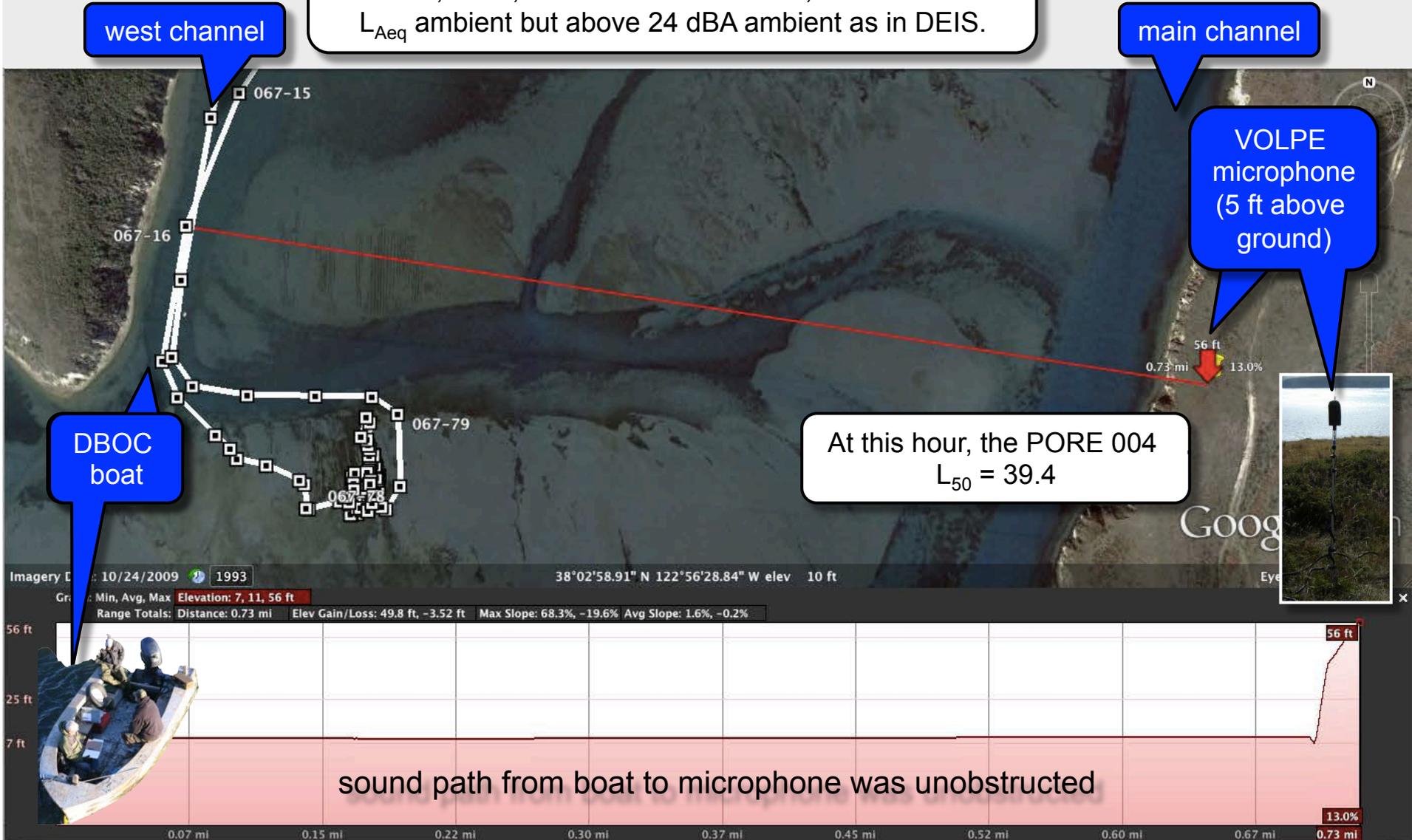


Google earth map of GPS recording of DBOC boat trips along west channel in Jan-Feb 2010 vs. PORE 004 microphone: sound path was unobstructed and the microphone should have recorded the boat, but it did not



Google earth map and elevation profile of GPS recording of DBOC boat trip
 January 14, 2010 vs. VOLPE PORE 004 microphone: 067-79 @ 8:24:37

DEIS claimed DBOC boat generates 71 dBA noise at 50 ft. At 3,850 ft, boat should be 33 dBA, below 41 dBA L_{Aeq} ambient but above 24 dBA ambient as in DEIS.



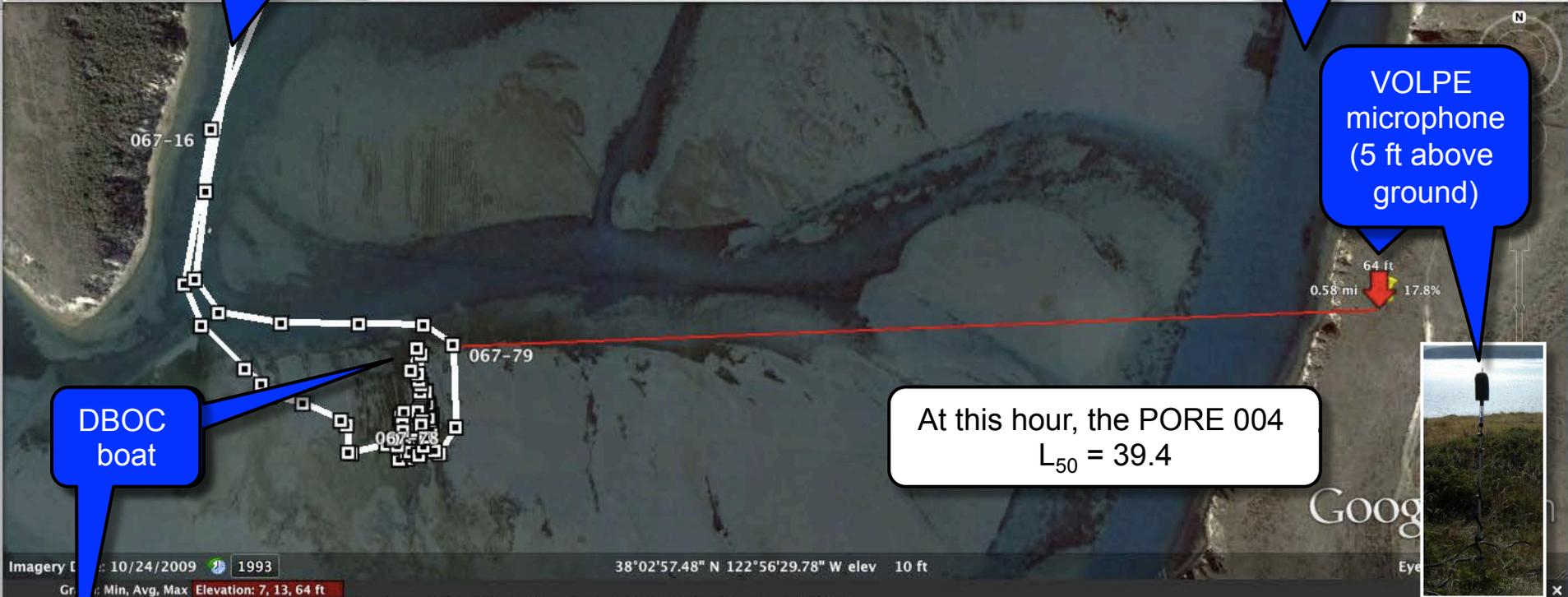
Google earth map and elevation profile of GPS recording of DBOC boat trip
January 14, 2010 vs. VOLPE PORE 004 microphone: 067-79 @ 8:52:36

DEIS claimed DBOC boat generates 71 dBA noise at 50 ft. At 3,200 ft, boat should be 35 dBA, below 41 dBA L_{Aeq} ambient but above 24 dBA ambient as in DEIS.

west channel

main channel

VOLPE microphone (5 ft above ground)



DBOC boat

At this hour, the PORE 004 $L_{50} = 39.4$

Imagery Date: 10/24/2009 1993 38°02'57.48" N 122°56'29.78" W elev 10 ft
Range Totals: Distance: 0.58 mi Elev Gain/Loss: 90.9 ft, -36.8 ft Max Slope: 77.8%, -85.6% Avg Slope: 2.7%, -3.7%



sound path from boat to microphone was unobstructed

According to DEIS, VOLPE PORE 004 microphone on bluff over Drakes Estero may not have recorded boats due to blocking of sound by bluff ...

TABLE 3-3. NOISE GENERATORS AT DBOC

From NPS DEIS Chapter 3

Equipment	Description†	Frequency of Use (Weather Permitting)†	Representative Sound Level at 50 Feet (dBA) ^a
Motorboat	20 HP, 4-cycle engine	Up to 12 40-minute trips/day	71*
Motorboat	40 HP, 4-cycle engine	Up to 12 40-minute trips/day	71*
Forklift	60 HP diesel engine	2 to 4 hours/day	79**
Pneumatic drills	Handheld hydraulic drills	Approximately 2 hours/day	85**
Oyster tumbler	Tube for sorting oysters by size, run by electric motor	Approximately 2 hours/day	79**

Sources: †DBOC [Lunny], pers. comm., 2011h; *Noise Unlimited, Inc, 1995; **FHWA 2006.

^a Hourly values

Topography can affect sound transmission through air. Steep topography such as the bluffs around some of Drakes Estero can block sound transmission. Because the 2009 sound measurements used in this EIS were taken on a bluff well above Drakes Estero, the measurements may have recorded limited mariculture-related noises.

... but Google earth elevation profiles of DBOC boats and PORE 004 microphone show DEIS is incorrect: bluff is 30 feet, did not block sound
Conclusion: sound path from DBOC boat to microphone was unobstructed

Conclusion: sound path from DBOC boats to PORE 004 microphone was unobstructed; VOLPE 2011 report should have recorded DBOC boats

Western-Pacific Region
Los Angeles, CA 90009
FP-01 (JD857)

**BASELINE AMBIENT SOUND
LEVELS IN POINT REYES
NATIONAL SEASHORE**



March 2011
Final Report



U.S. Department of Transportation
Federal Aviation Administration

Special thanks to Dr. Kurt Frstrup and Damon Joyce, Natural Sounds Program, NPS, Fort Collins, for their help in providing the Volpe data and answering our questions.

Appendix A

**Baseline Ambient Sound Levels
in Point Reyes National Seashore**

A.4 Site PORE004 – Drakes Head Estero

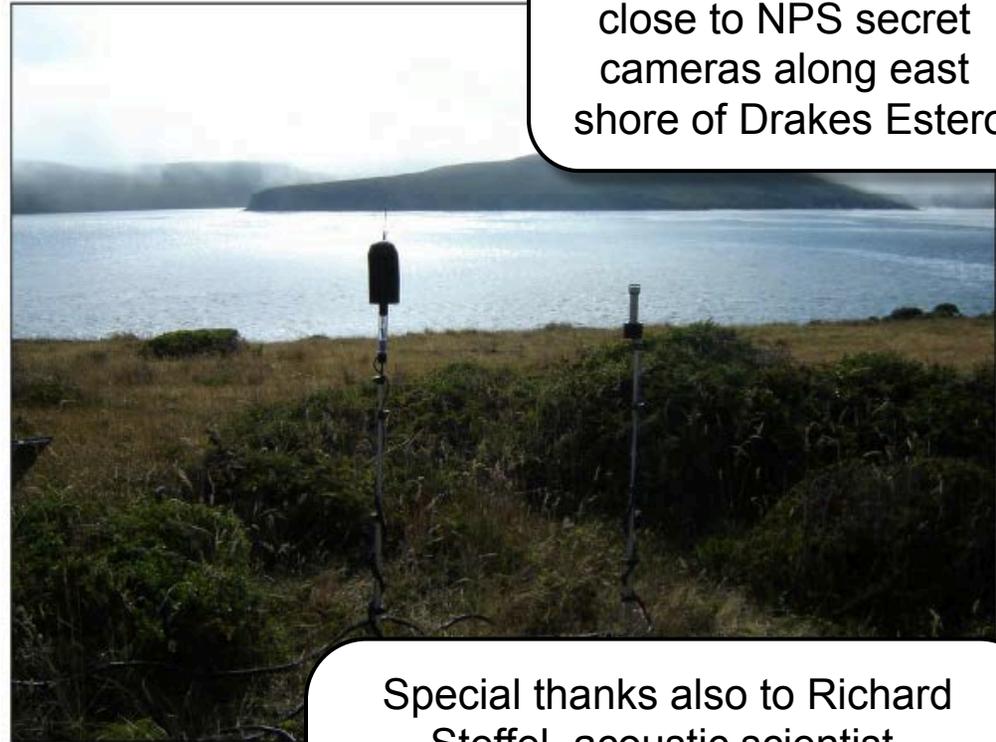
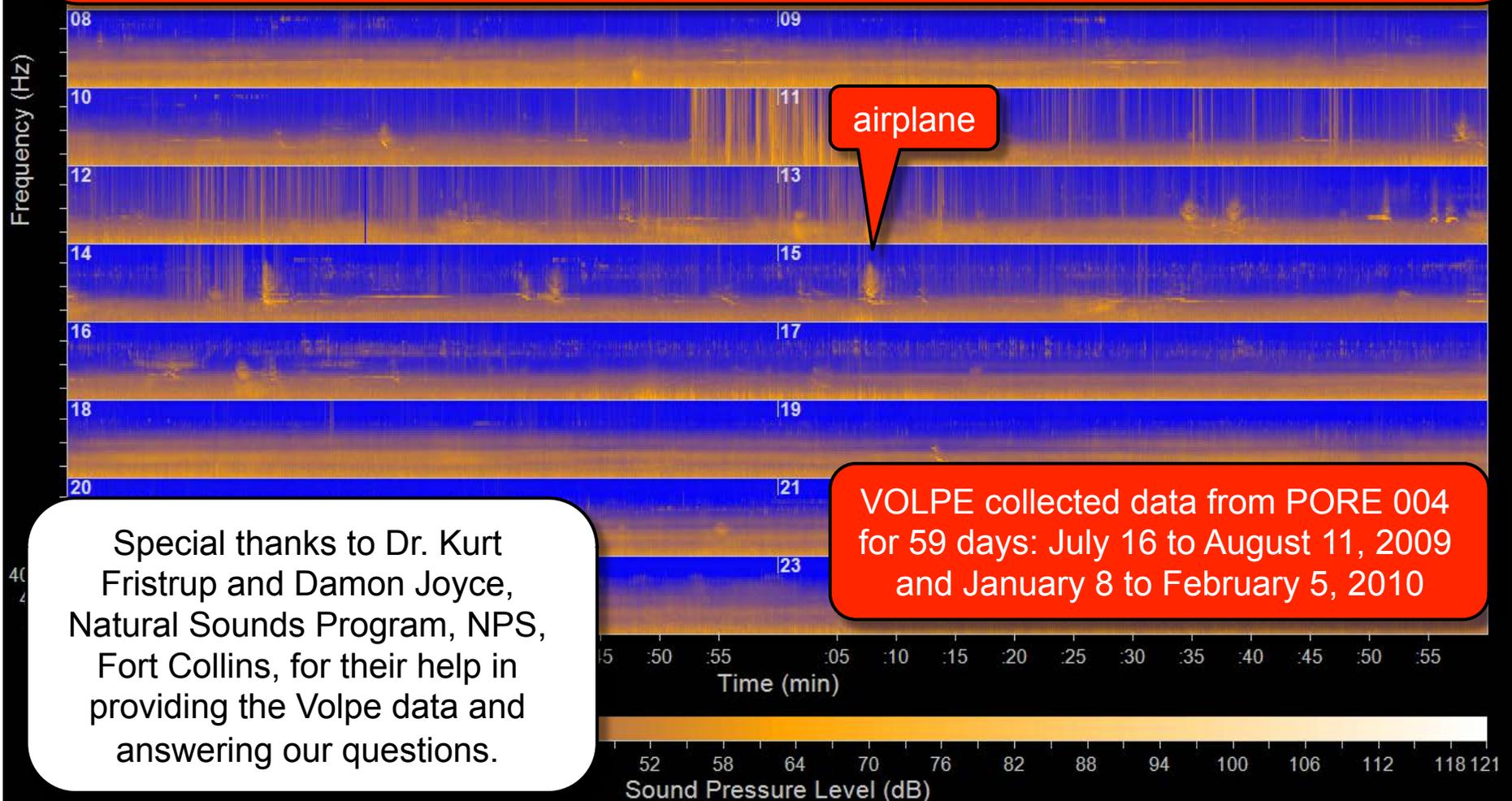


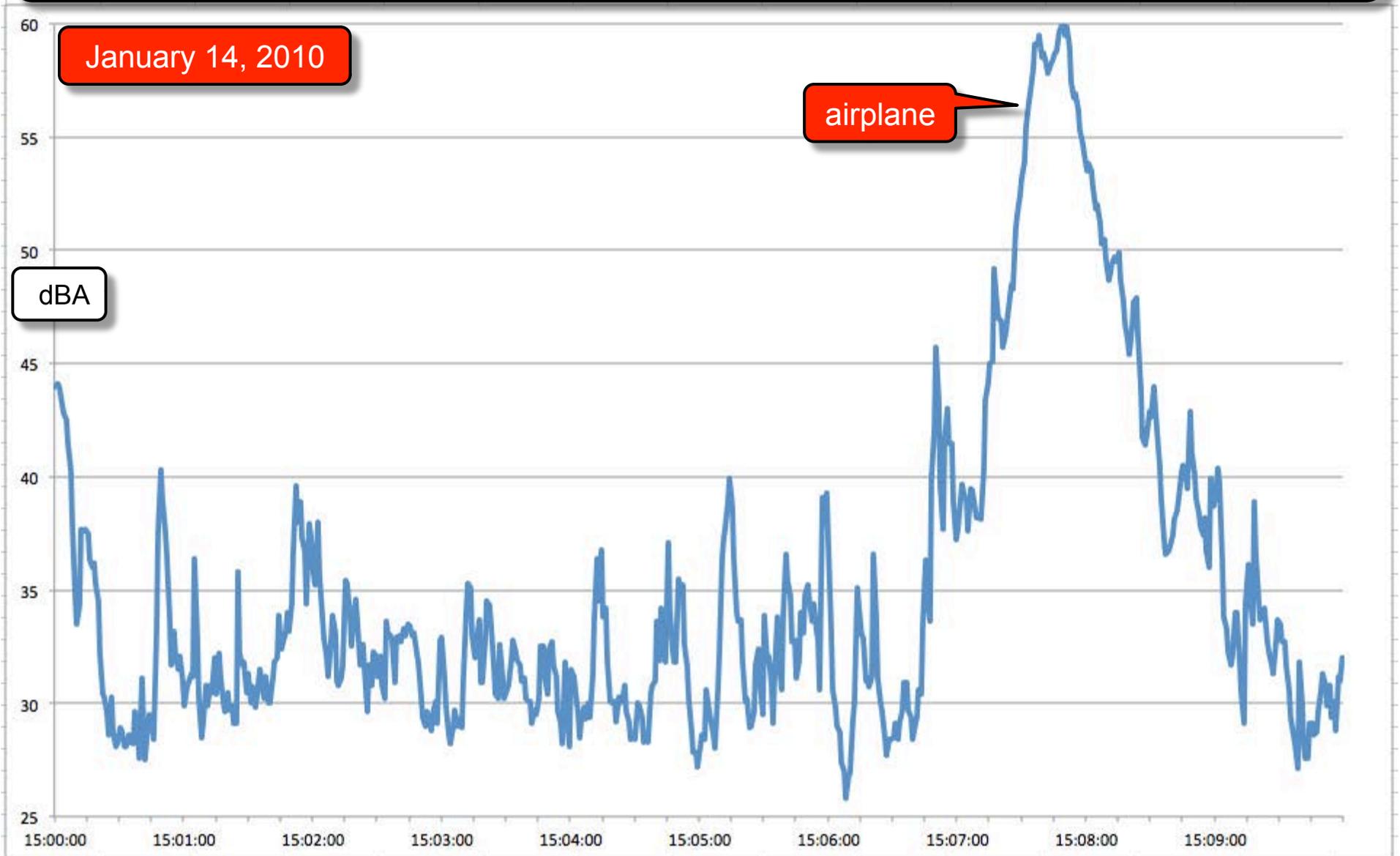
Figure 53.

Special thanks also to Richard Steffel, acoustic scientist, ENVIRON, who collaborated with me to analyze the Volpe data and determine the spectral signature of the DBOC boats.

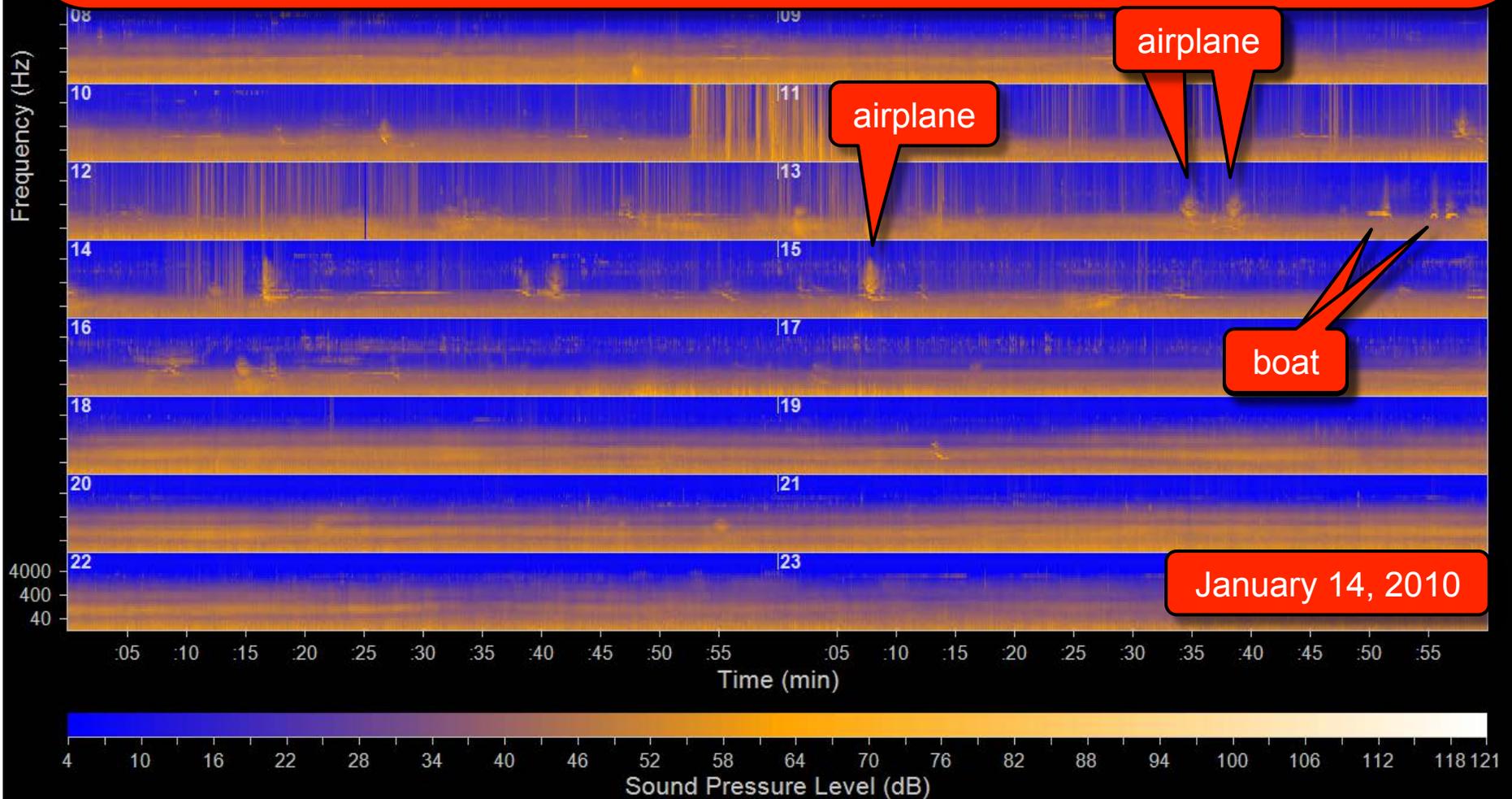
VOLPE and NPS scientists detect aircraft, looking at the visual signature in a spectrogram (there are many airplanes in the record below; one is marked), and listening to sample of corresponding audio data. Jet aircraft have a very distinctive signature (see below). Prop aircraft have a different signature. As shown here, DBOC boats have yet a different signature.



Whereas jet aircraft have distinctive spectral signature, when plotted as function of noise level and time, they look like other human-generated noises

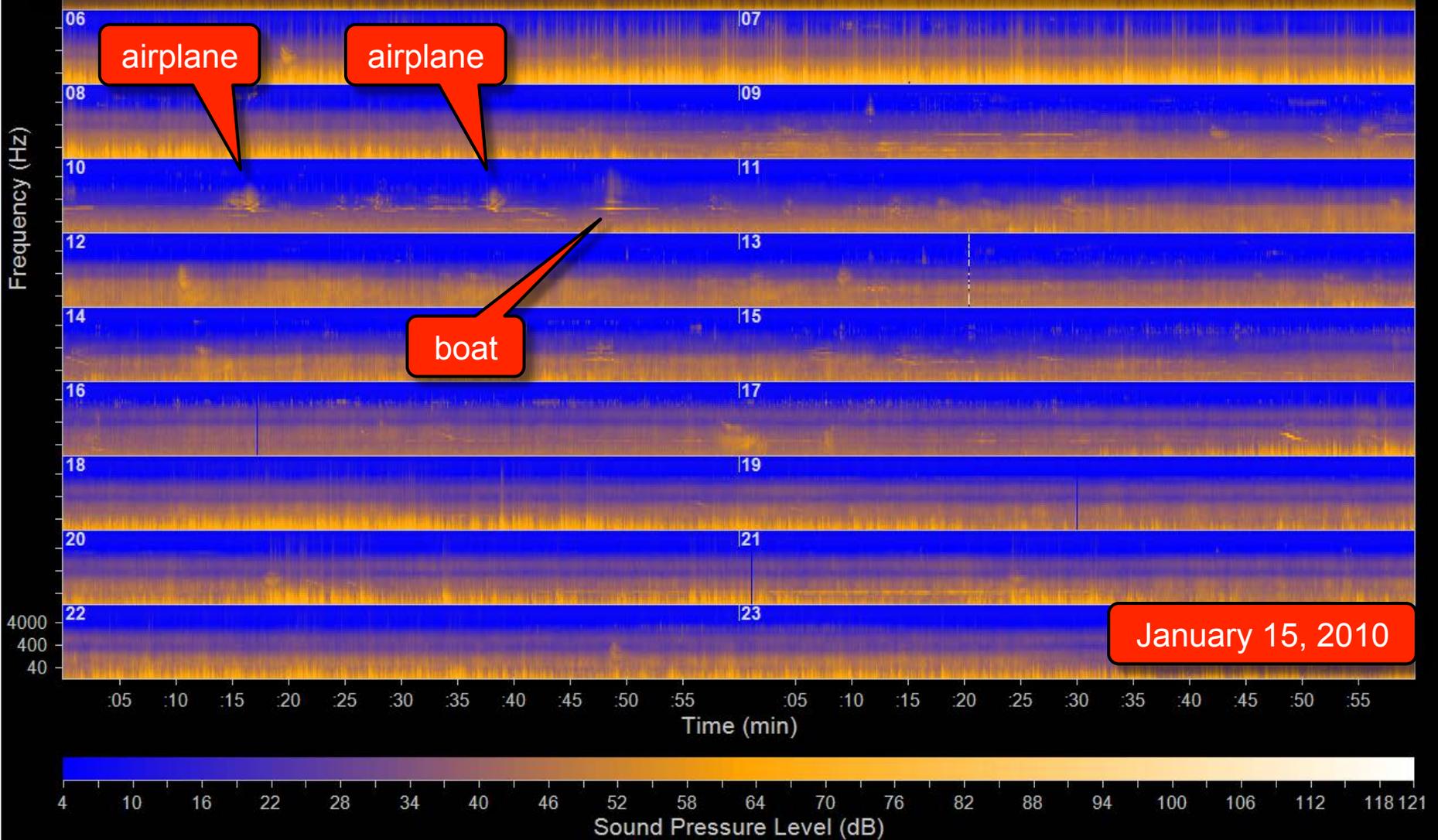


Richard Steffel (ENVIRON) and I used GPS records of DBOC boats in January-February 2010 to determine the spectral signature of these boats. One is shown below on January 14, 2010. While we identified ~1,000 recordings of airplanes during the 59 day period, we found only 7 recordings of boats: all were DBOC boat trips along the main channel. None of the daily DBOC boat trips along the west channel were detected.

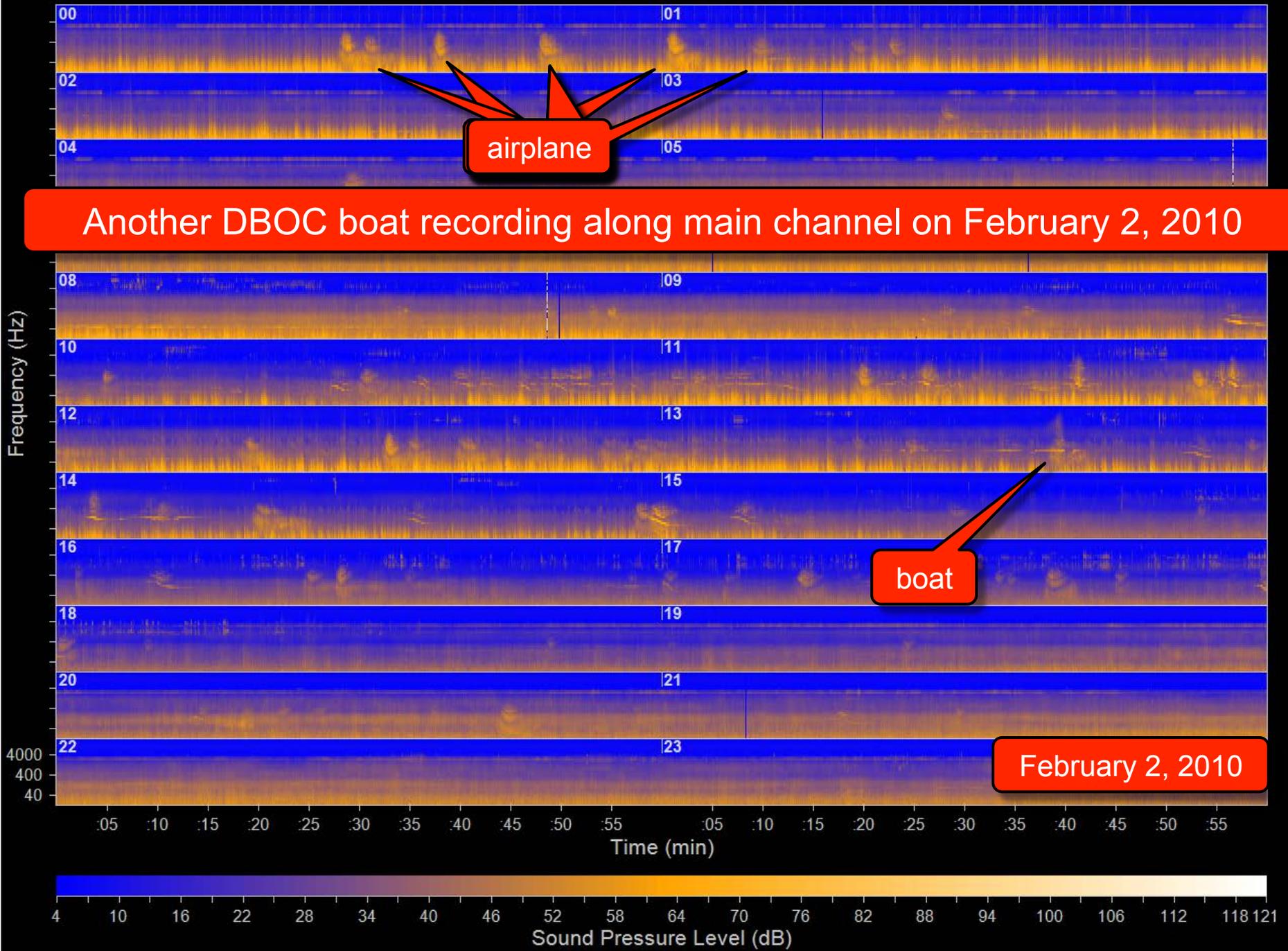


1/3 Octave Spectrogram for PR4 on 2010-01-15 (Unweighted)

Another DBOC boat recording along main channel on January 15, 2010

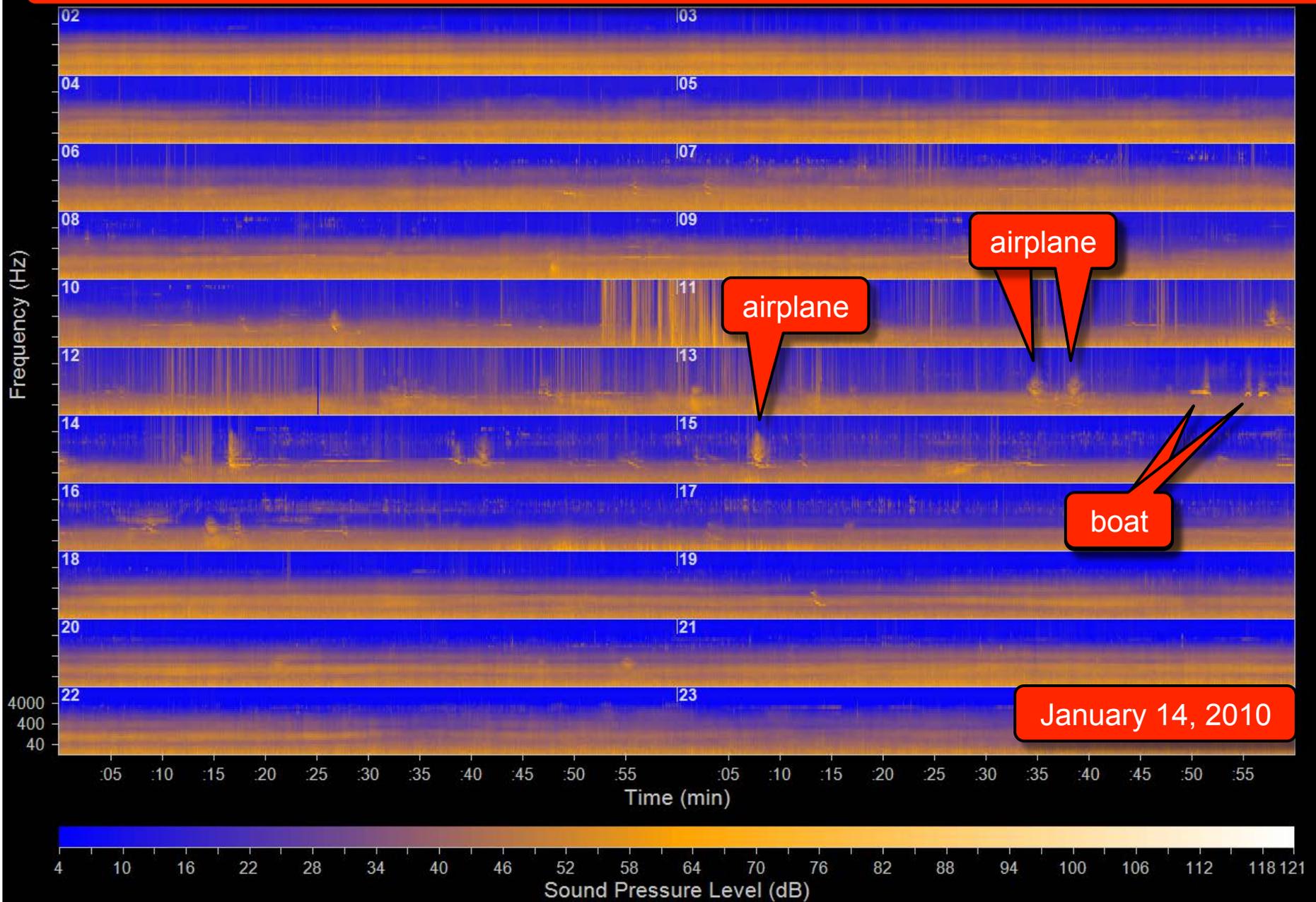


1/3 Octave Spectrogram for PR4 on 2010-02-02 (Unweighted)



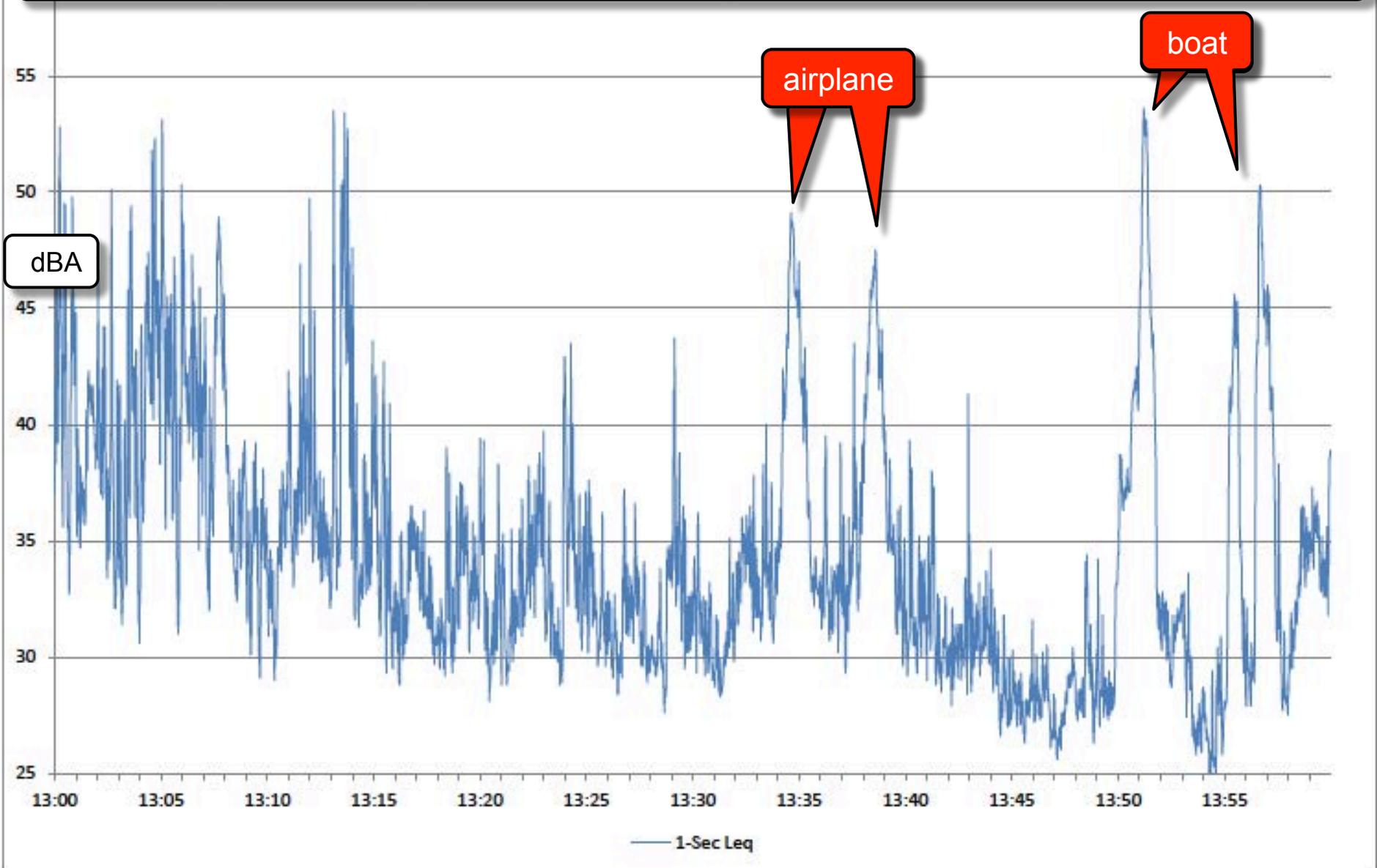
Another DBOC boat recording along main channel on February 2, 2010

Analysis of DBOC boat in the main channel on January 14, 2010 at 1:50 pm



PORE#4 - Jan. 14, 2010 1300-1400

From spectral analysis we can distinguish aircraft from the DBOC boat



GPS location of DBOC boat trip on January 14, 2010 from 1:50-1:59 pm



The only 7 records of boats on VOLPE PORE 004 microphone in 59 days of recording are trips along main channel as mandated by CA Dept. Public Health. These trips typically but not always occurred on Tuesdays and at high tide.

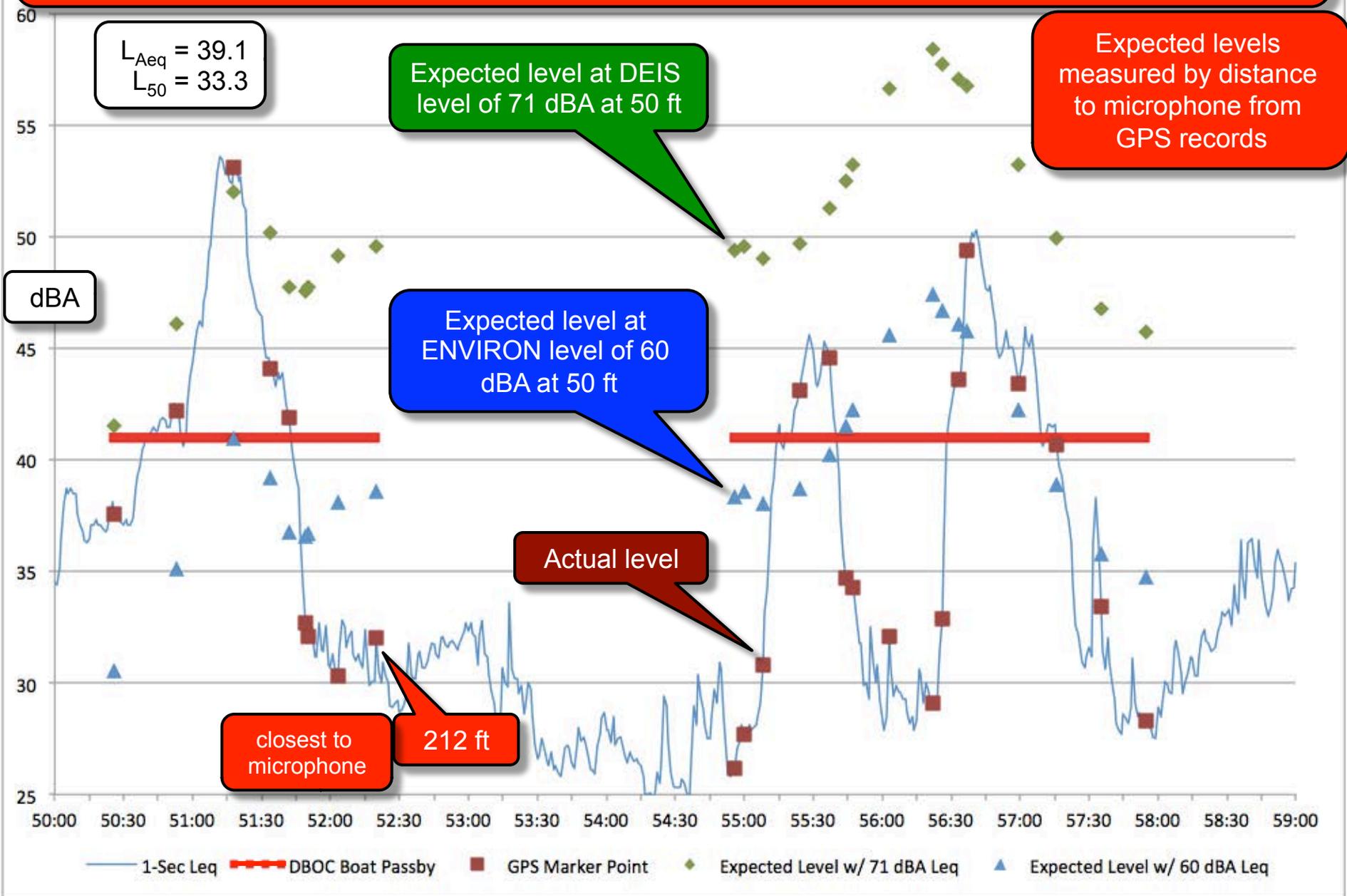
DBOC boat

VOLPE microphone

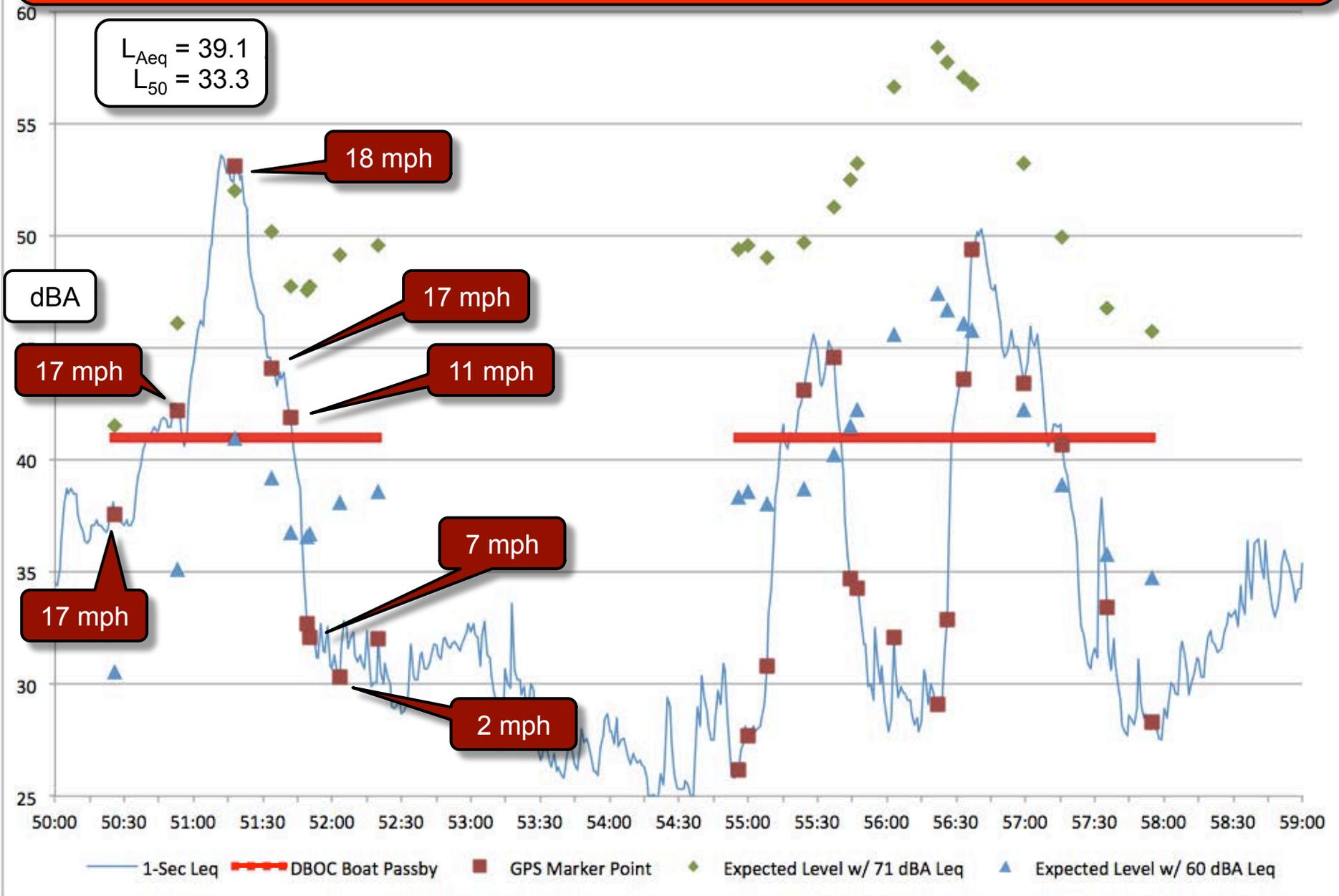
200 feet

main channel

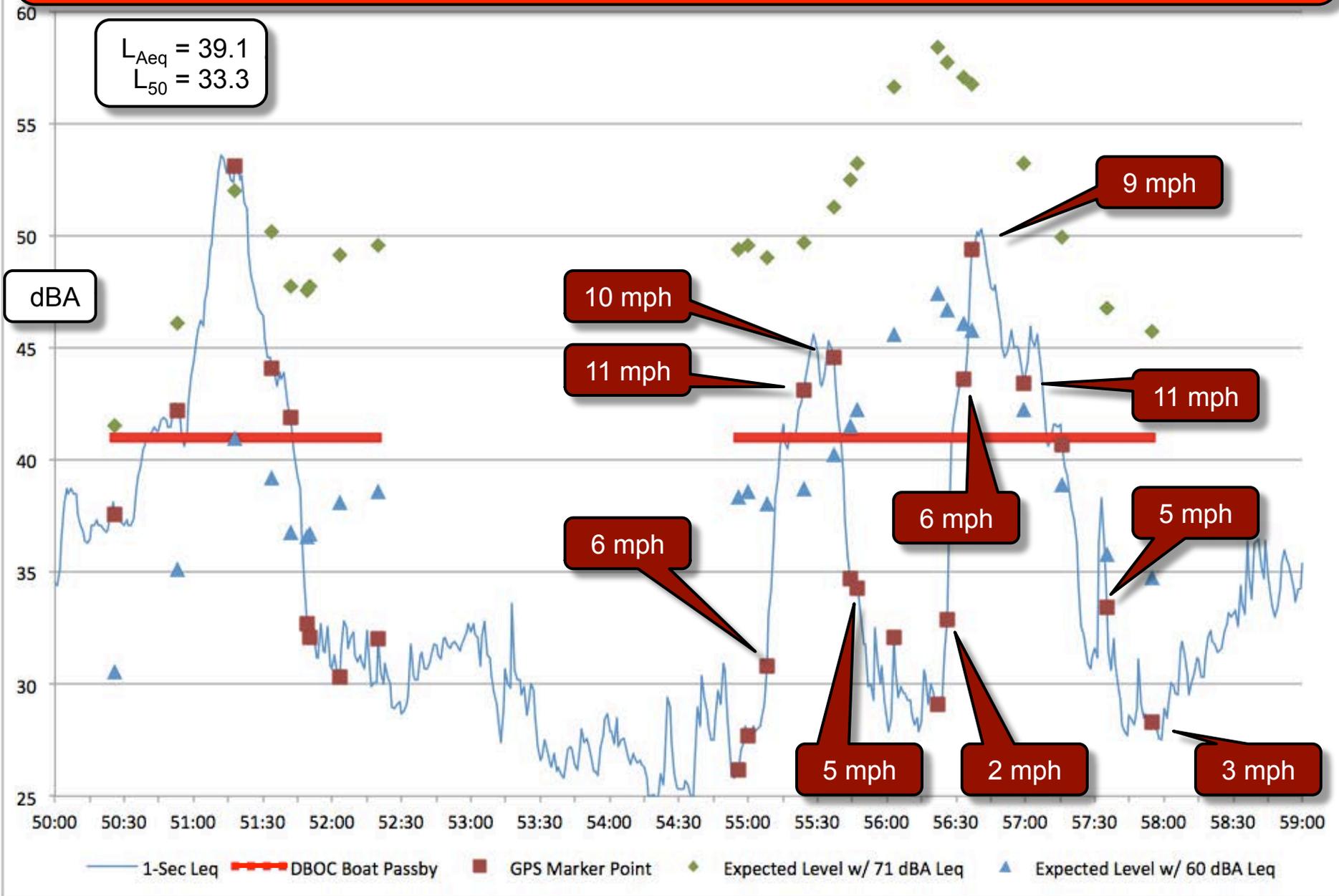
PORE 004 recording of DBOC boat in main channel between 1:50 pm and 1:59 pm on January 14, 2010; boat got within 250 feet of microphone



The relationship of the actual sound level with the DEIS vs. the ENVIRON expected level is a function of boat speed: the faster the boat the louder



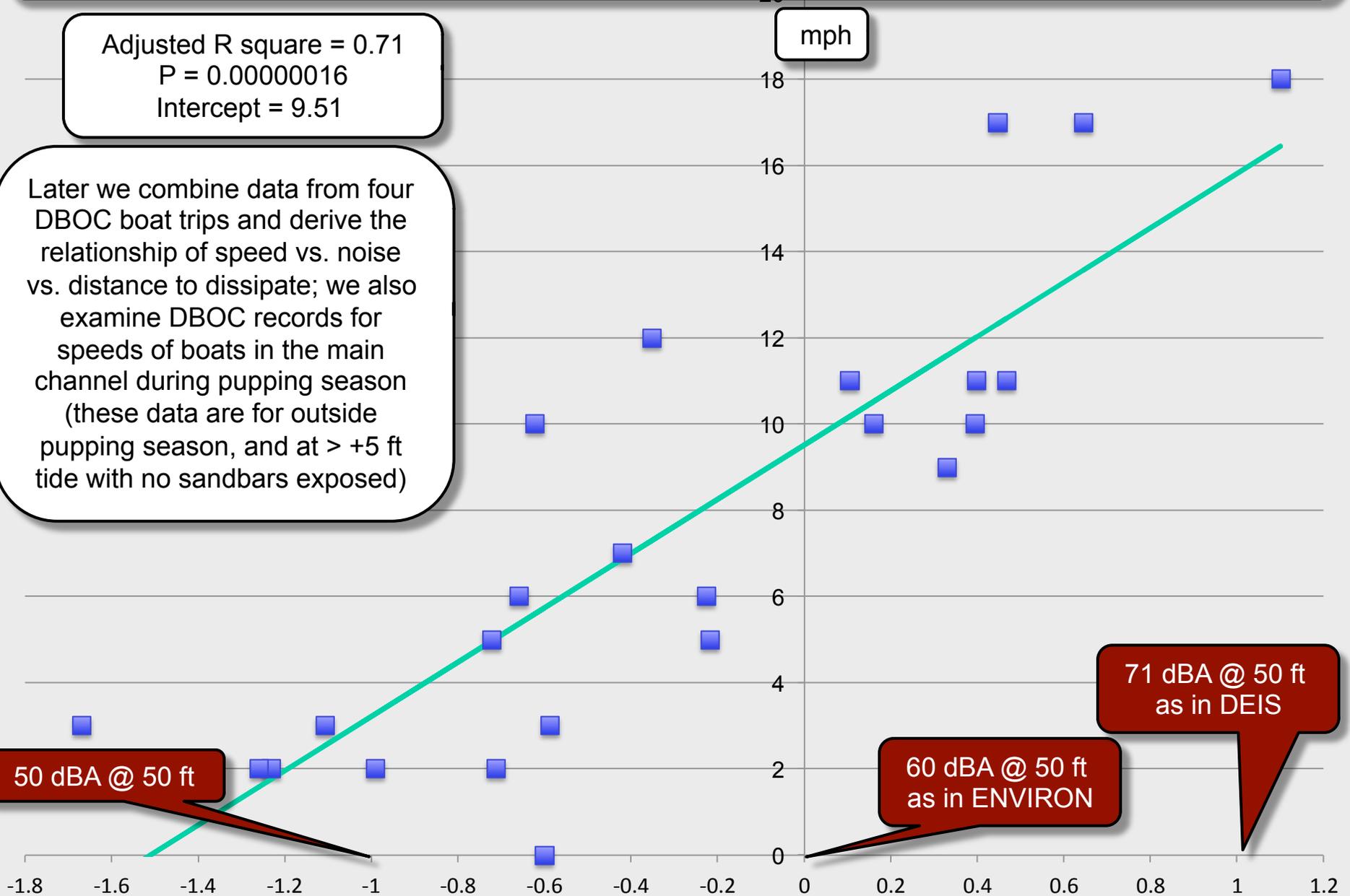
The relationship of the actual sound level with the DEIS vs. the ENVIRON expected level is a function of boat speed: the faster the boat the louder



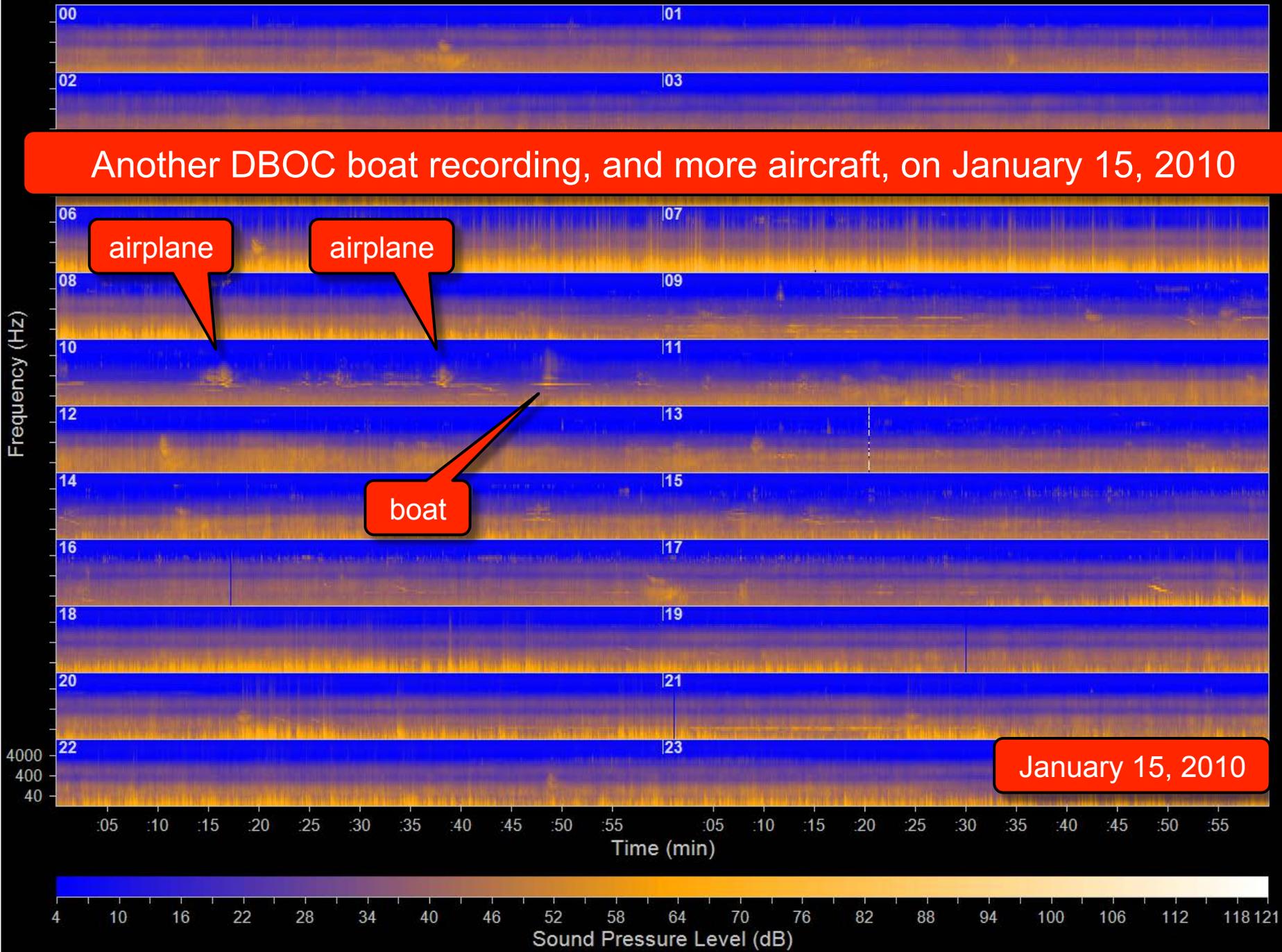
Linear regression analysis for the January 14, 2010 data shows a strong relationship between boat speed and noise level with adjusted $R^2 = 0.71$

Adjusted R square = 0.71
P = 0.00000016
Intercept = 9.51

Later we combine data from four DBOC boat trips and derive the relationship of speed vs. noise vs. distance to dissipate; we also examine DBOC records for speeds of boats in the main channel during pupping season (these data are for outside pupping season, and at > +5 ft tide with no sandbars exposed)



1/3 Octave Spectrogram for PR4 on 2010-01-15 (Unweighted)



Another DBOC boat recording, and more aircraft, on January 15, 2010

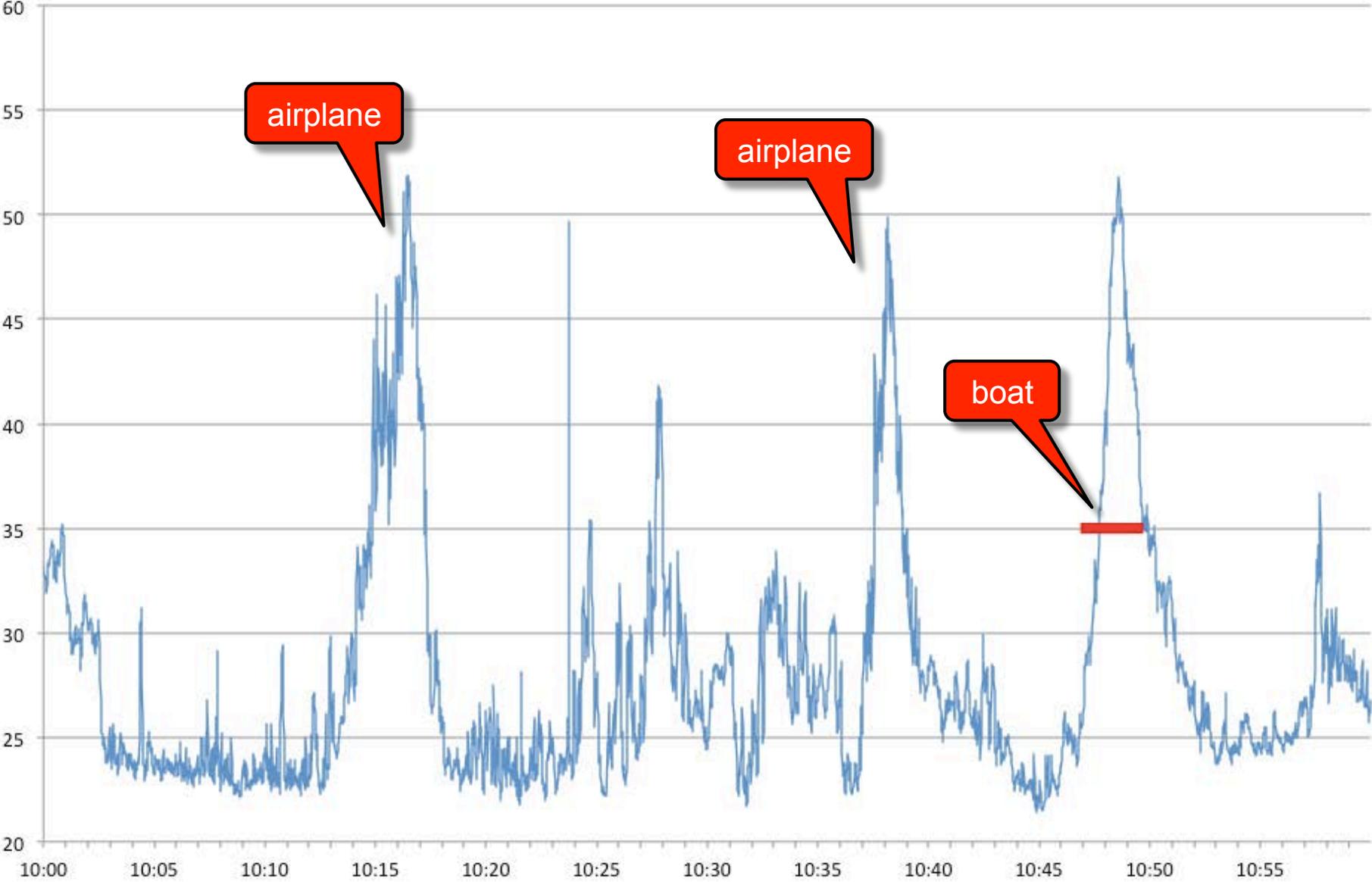
airplane

airplane

boat

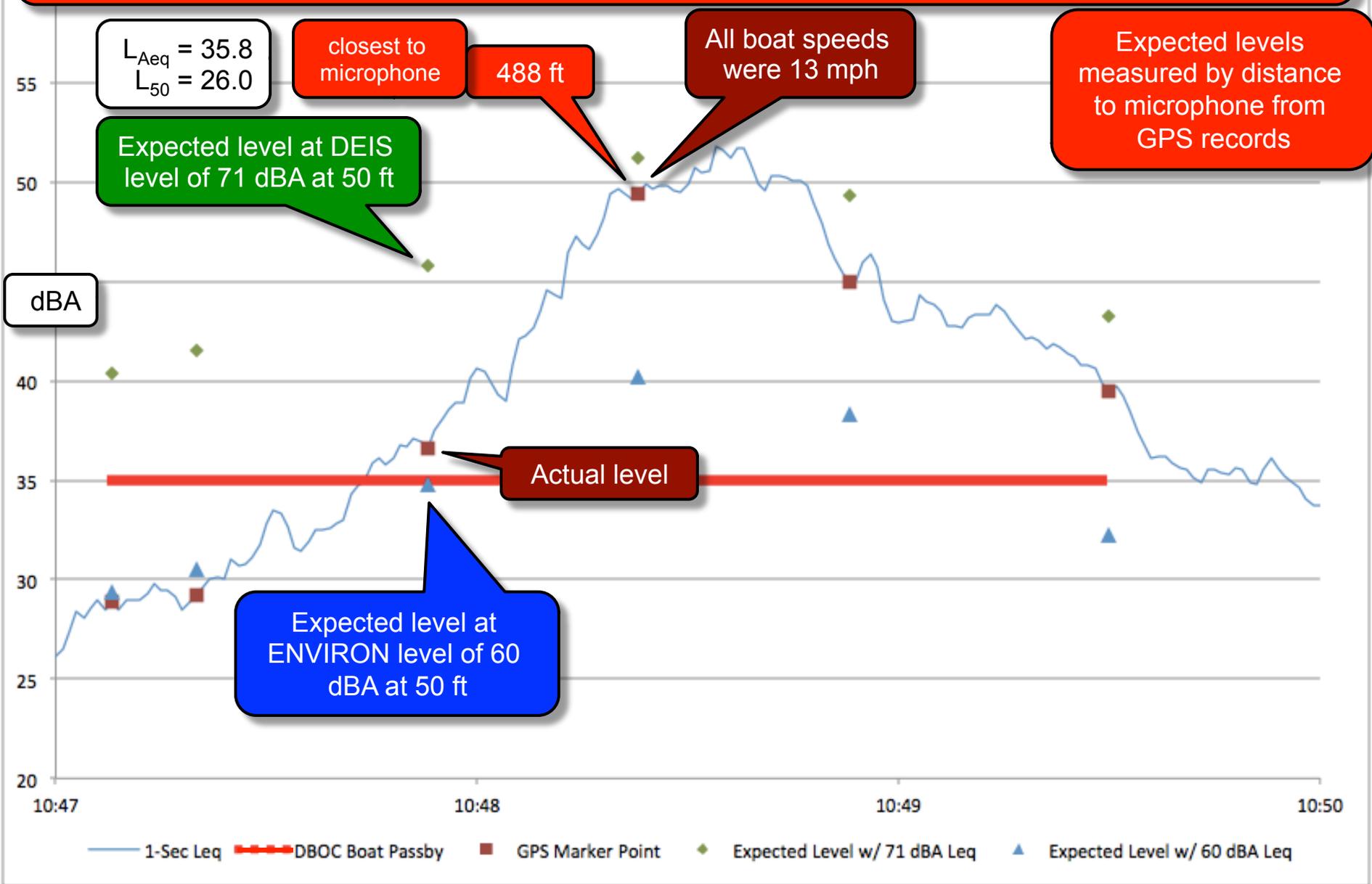
January 15, 2010

PORE#4 - Jan. 15, 2010 1000-1100

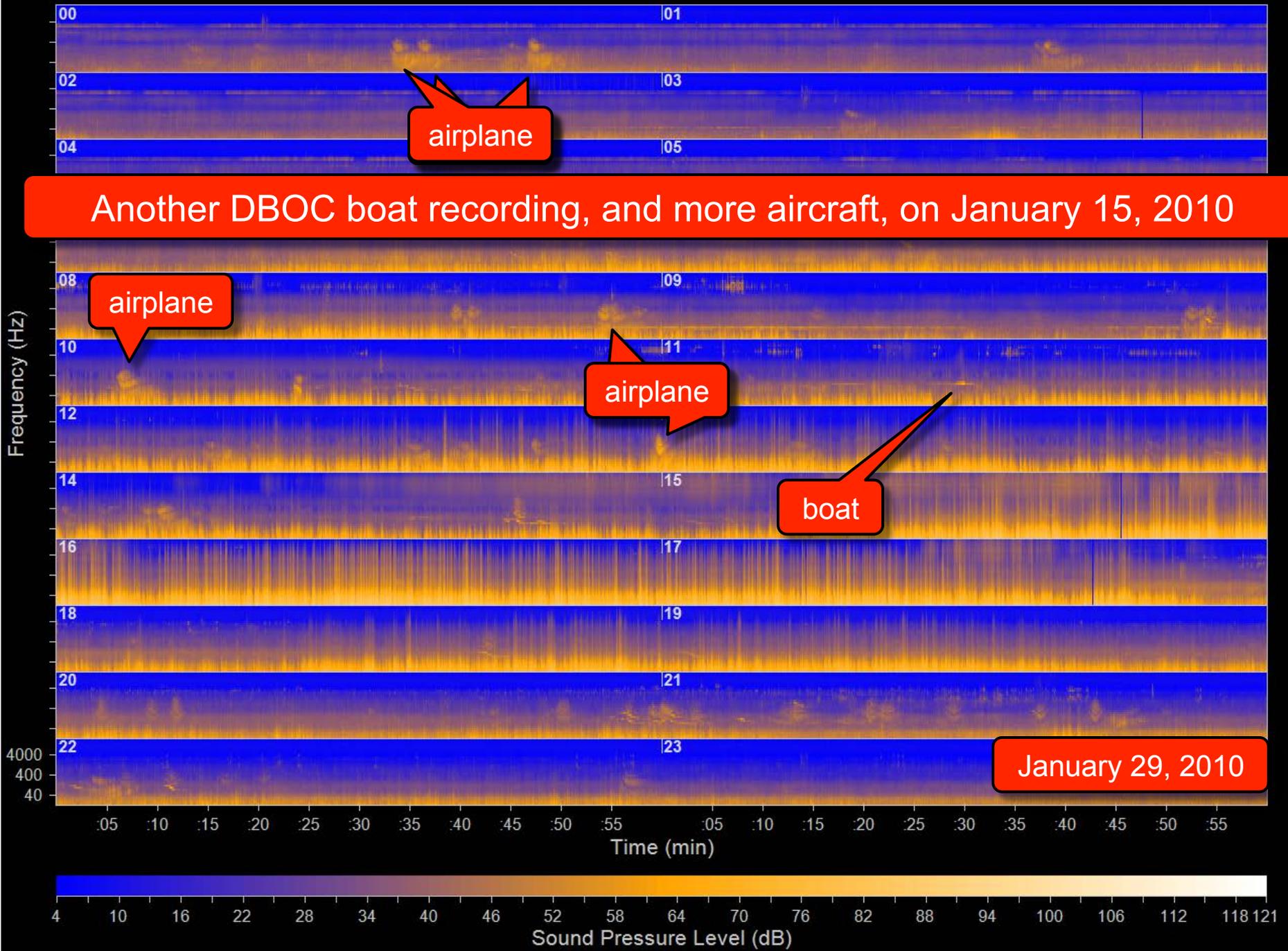


— 1-Sec Leq — DBOC Boat Passby

PORE 004 recording of DBOC boat in main channel between 10:47 and 10:50 am on January 15, 2010; boat got within 500 feet of microphone

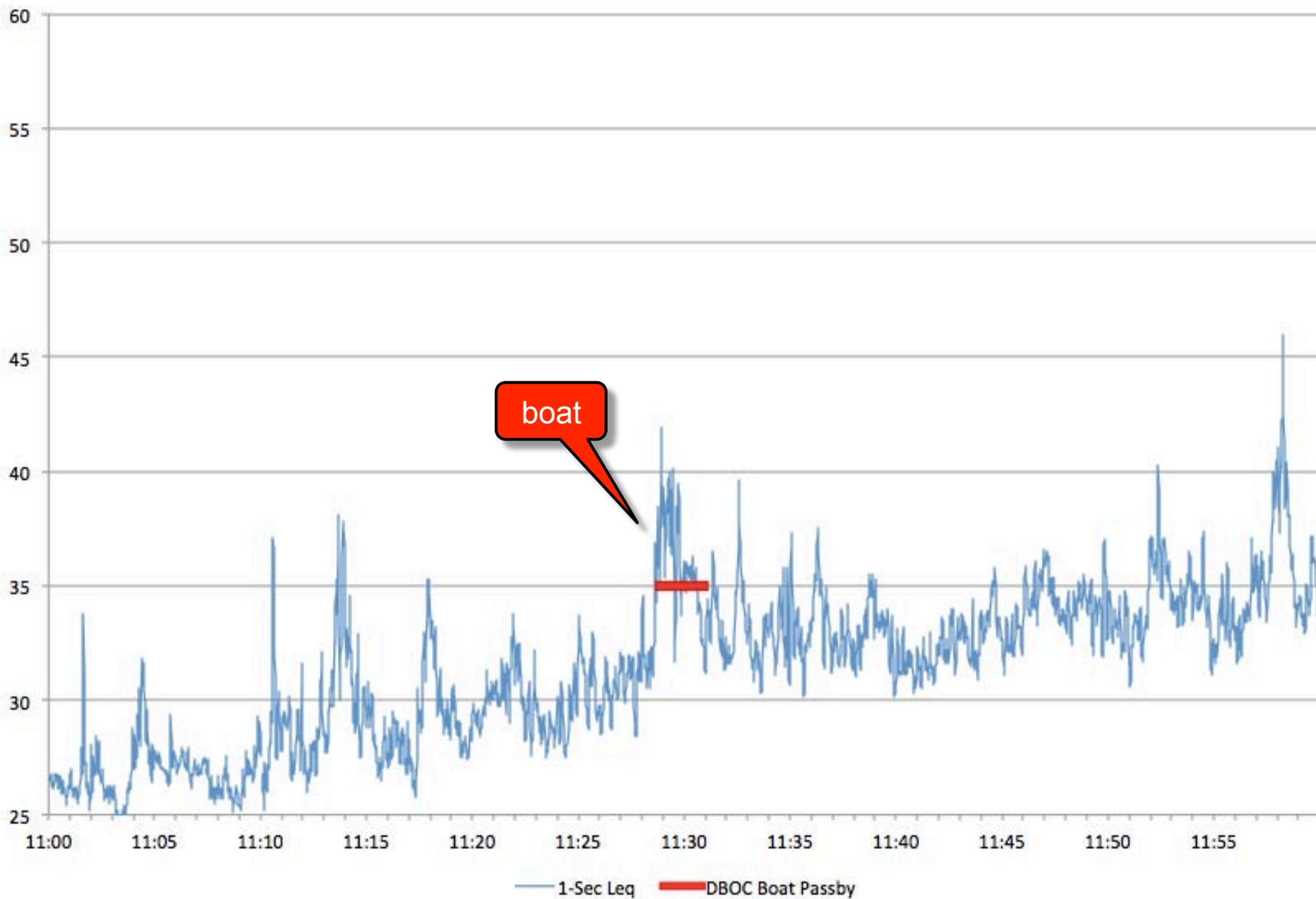


1/3 Octave Spectrogram for PR4 on 2010-01-29 (Unweighted)

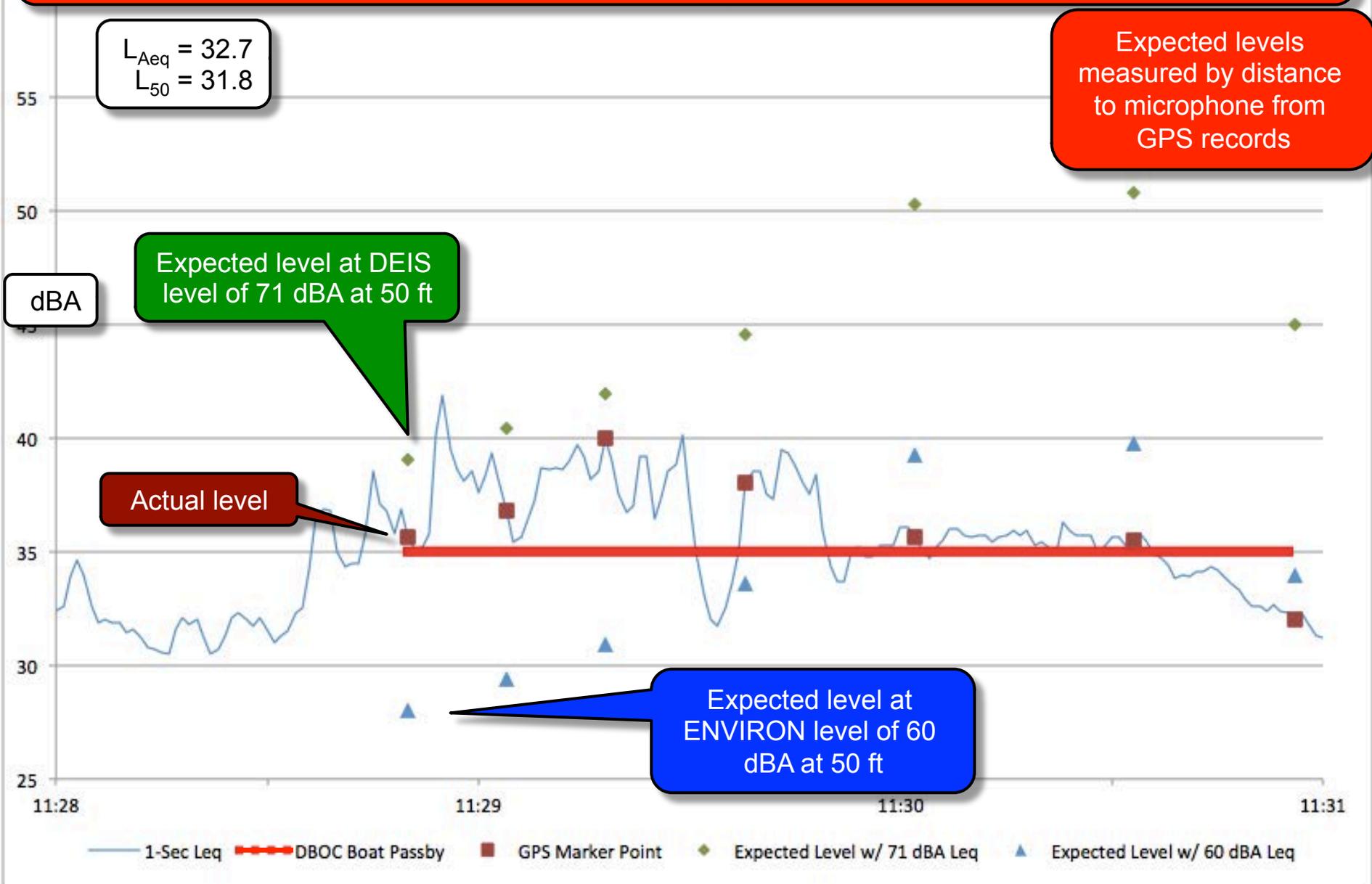


Another DBOC boat recording, and more aircraft, on January 15, 2010

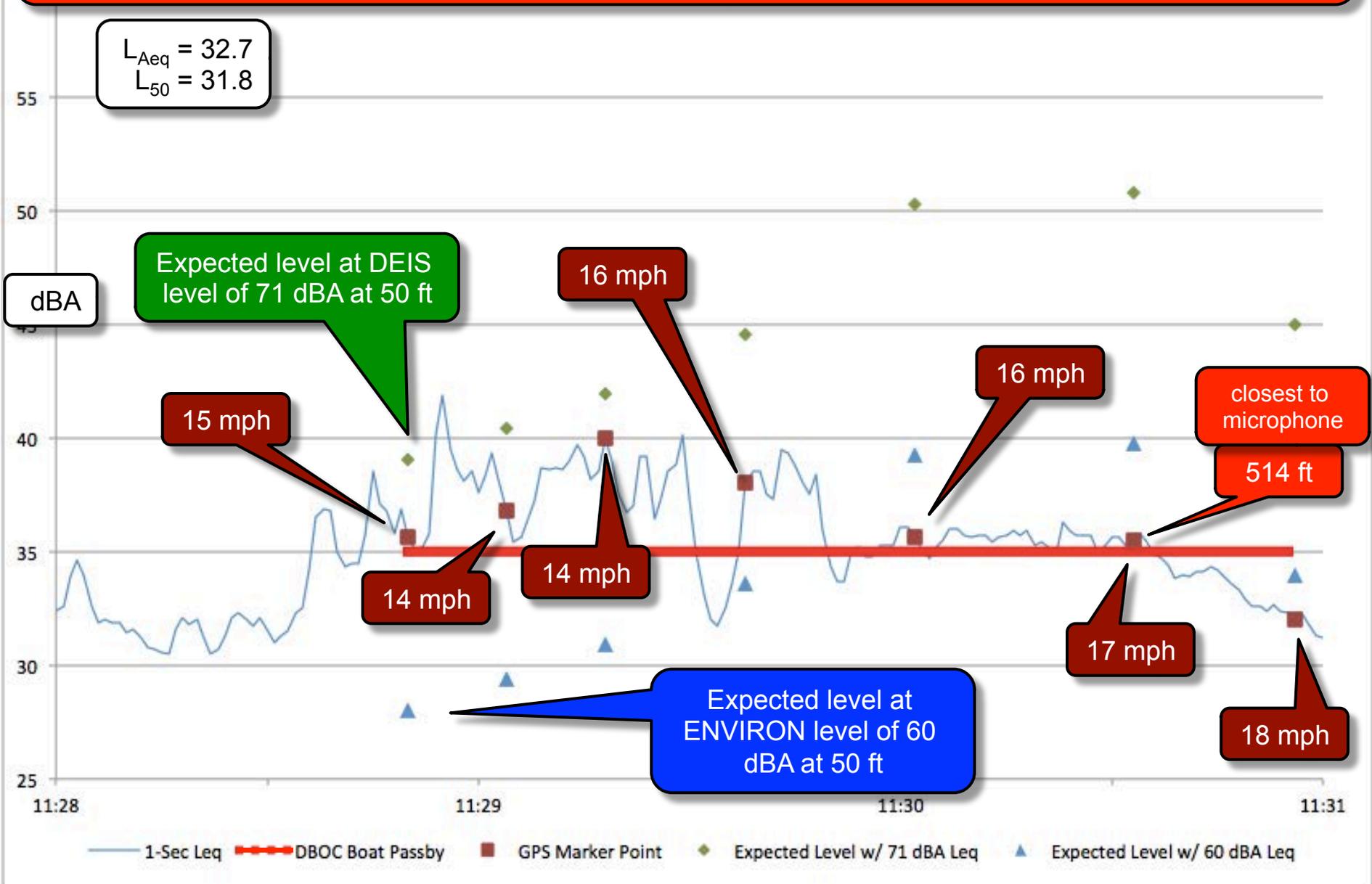
PORE#4 - Jan. 29, 2010 1100-1200



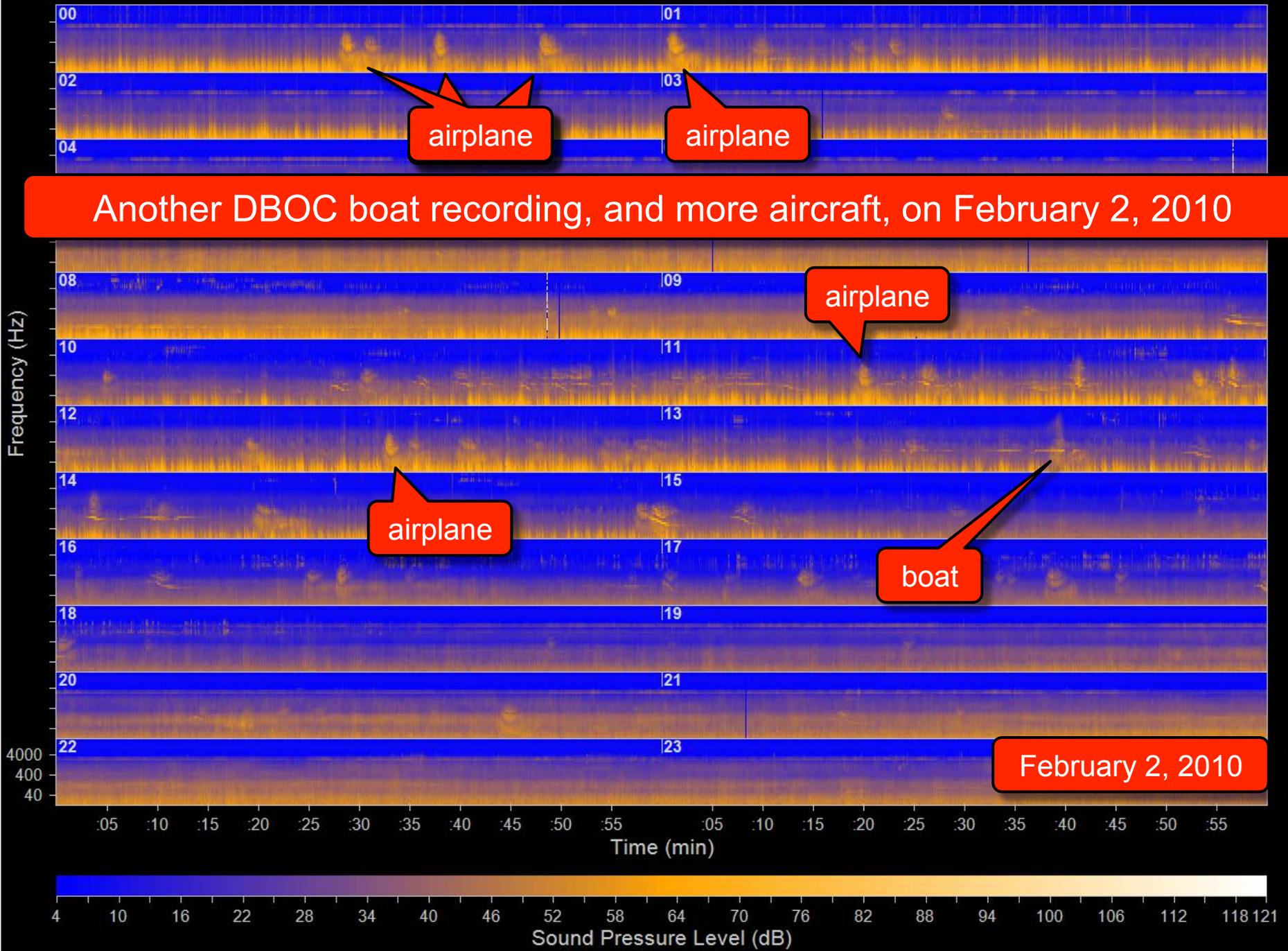
PORE 004 recording of DBOC boat in main channel between 11:28 and 11:31 am on January 29, 2010; boat got within 500 feet of microphone



PORE 004 recording of DBOC boat in main channel between 11:28 and 11:31 am on January 29, 2010; boat got within 500 feet of microphone



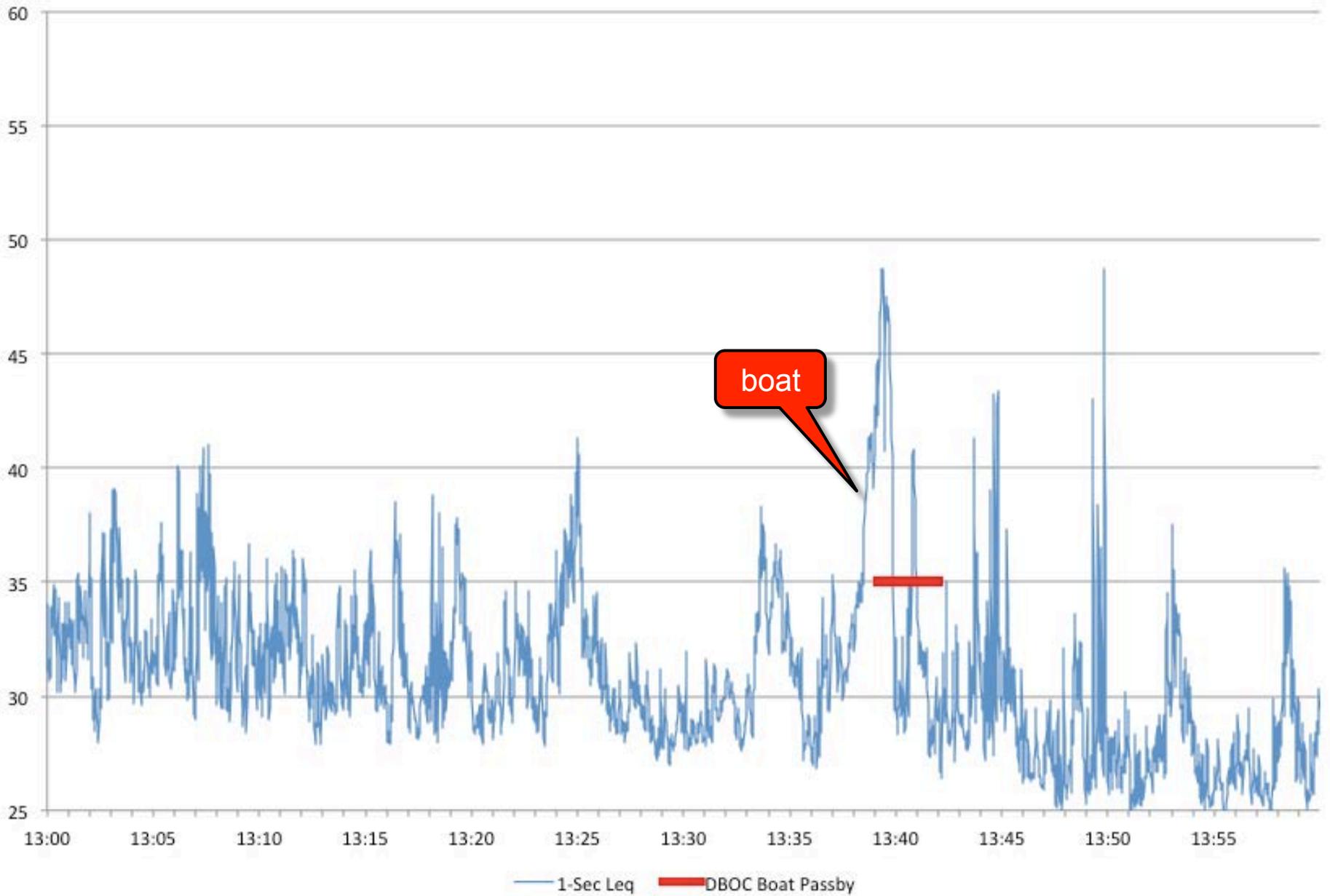
1/3 Octave Spectrogram for PR4 on 2010-02-02 (Unweighted)



Another DBOC boat recording, and more aircraft, on February 2, 2010

February 2, 2010

PORE#4 - Feb. 2, 2010 1300-1400



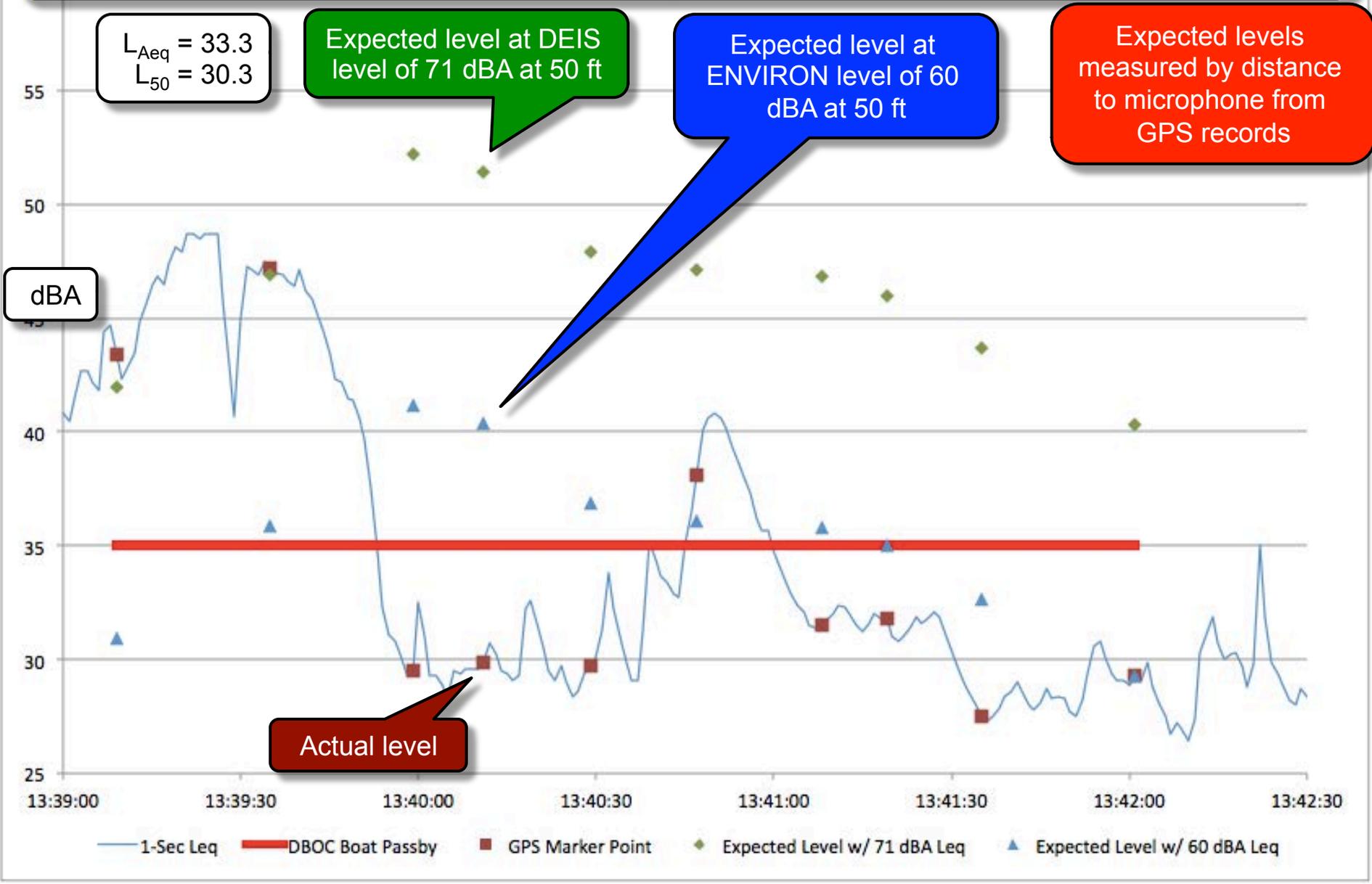
PORE 004 recording of DBOC boat in main channel between 1:39 and 1:42 pm on February 2, 2010; boat got within 500 feet of microphone

$L_{Aeq} = 33.3$
 $L_{50} = 30.3$

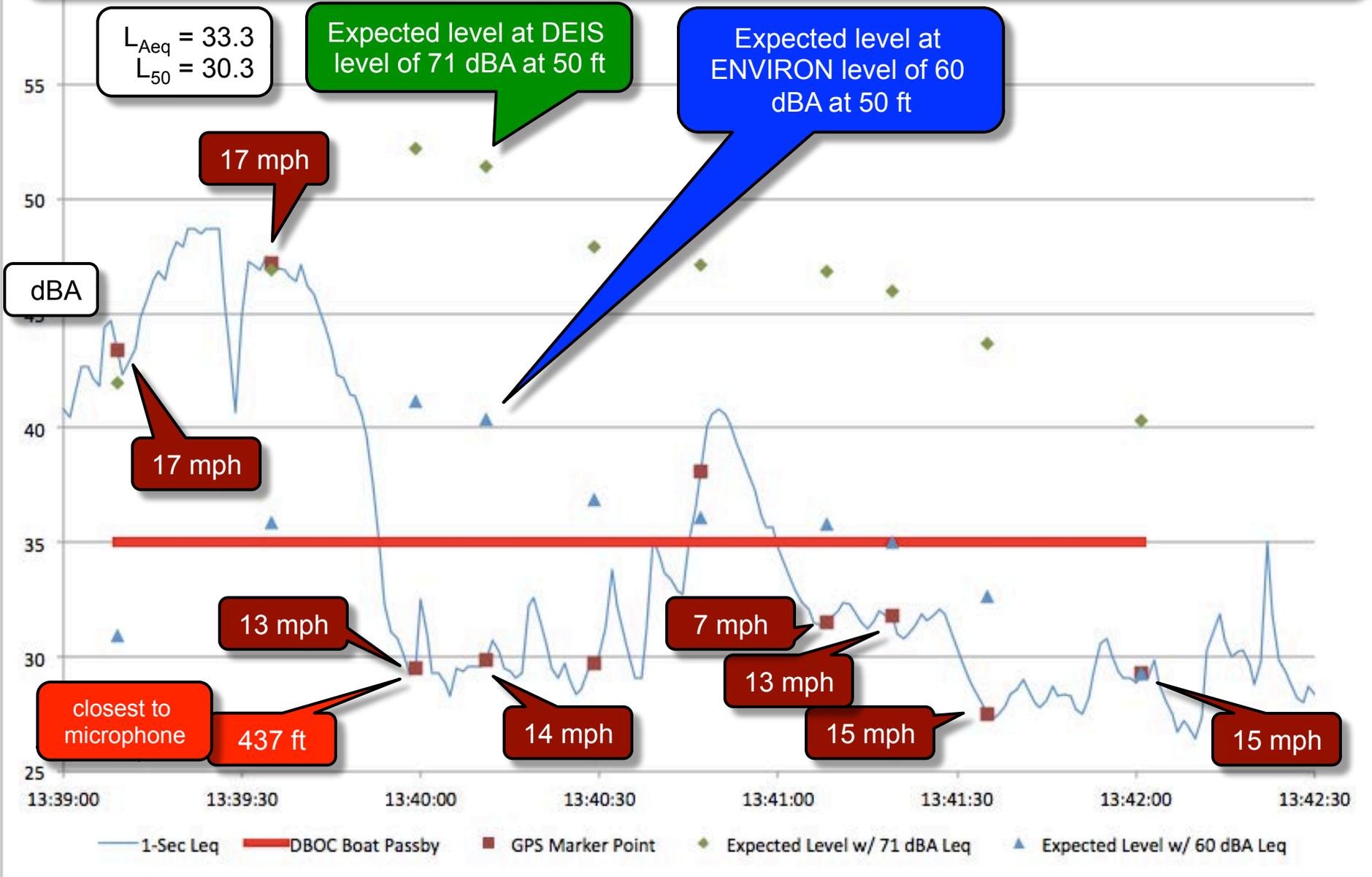
Expected level at DEIS level of 71 dBA at 50 ft

Expected level at ENVIRON level of 60 dBA at 50 ft

Expected levels measured by distance to microphone from GPS records



PORE 004 recording of DBOC boat in main channel between 1:39 and 1:42 pm on February 2, 2010; boat got within 500 feet of microphone



Linear regression analysis for the four weekly boat trips in main channels shows relationship between boat speed and noise level with adj. $R^2 = 0.41$

Adjusted R square = 0.41
P = 0.00000083
Intercept = 10.89

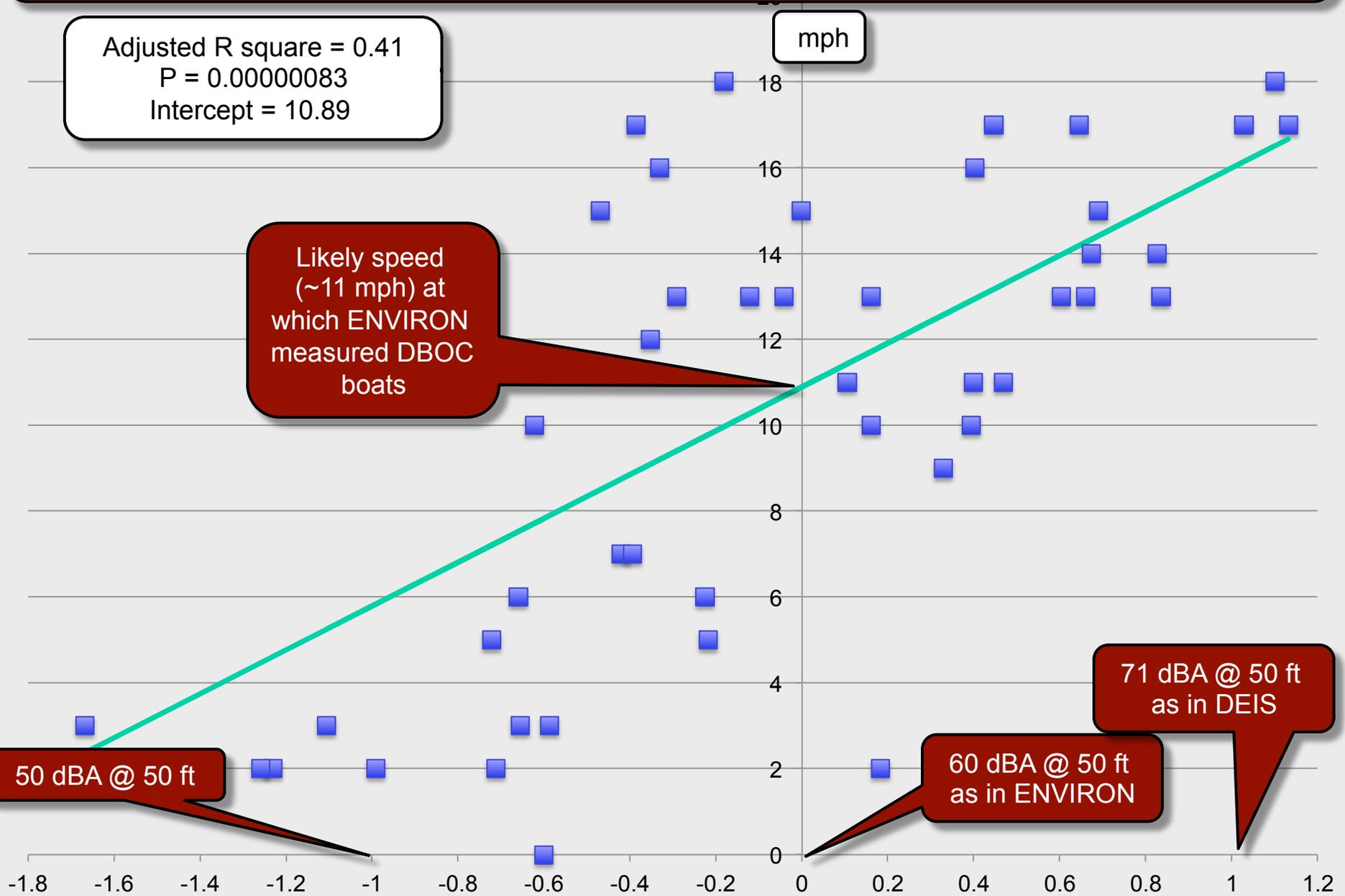
mph

Likely speed (~11 mph) at which ENVIRON measured DBOC boats

50 dBA @ 50 ft

60 dBA @ 50 ft as in ENVIRON

71 dBA @ 50 ft as in DEIS



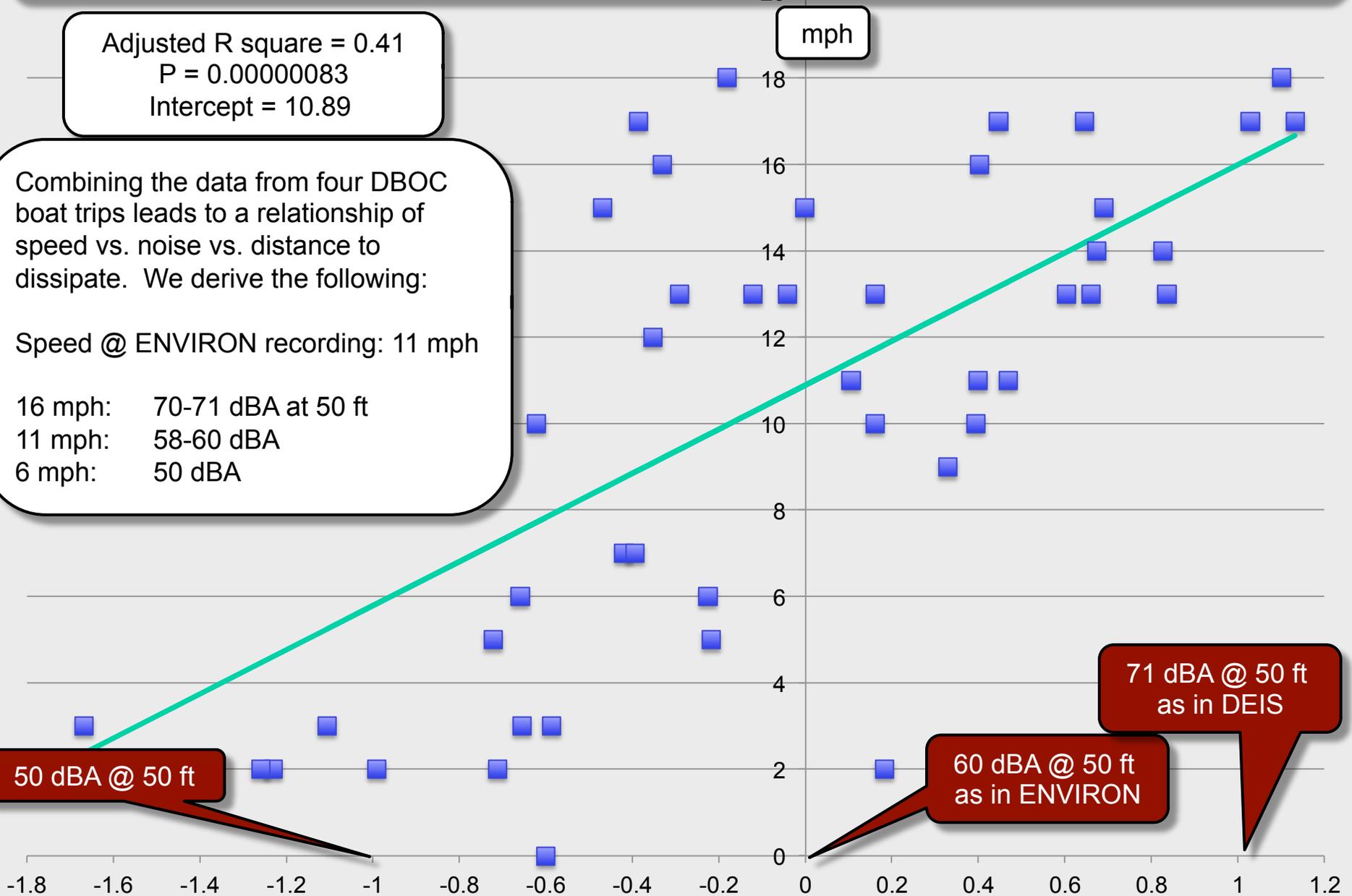
Linear regression analysis for the four weekly boat trips in main channels shows relationship between boat speed and noise level with adj. $R^2 = 0.41$

Adjusted R square = 0.41
P = 0.00000083
Intercept = 10.89

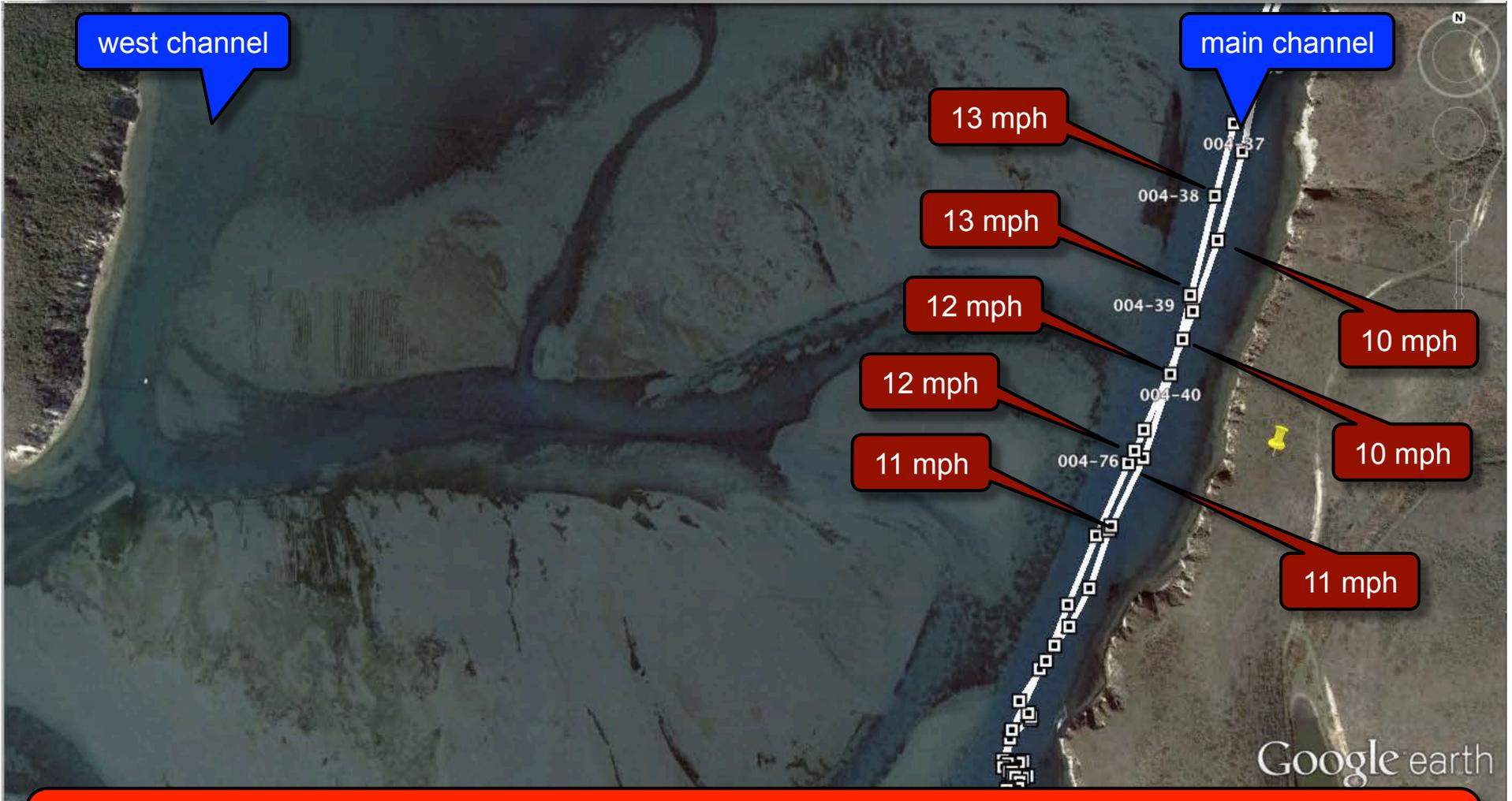
Combining the data from four DBOC boat trips leads to a relationship of speed vs. noise vs. distance to dissipate. We derive the following:

Speed @ ENVIRON recording: 11 mph

16 mph: 70-71 dBA at 50 ft
11 mph: 58-60 dBA
6 mph: 50 dBA

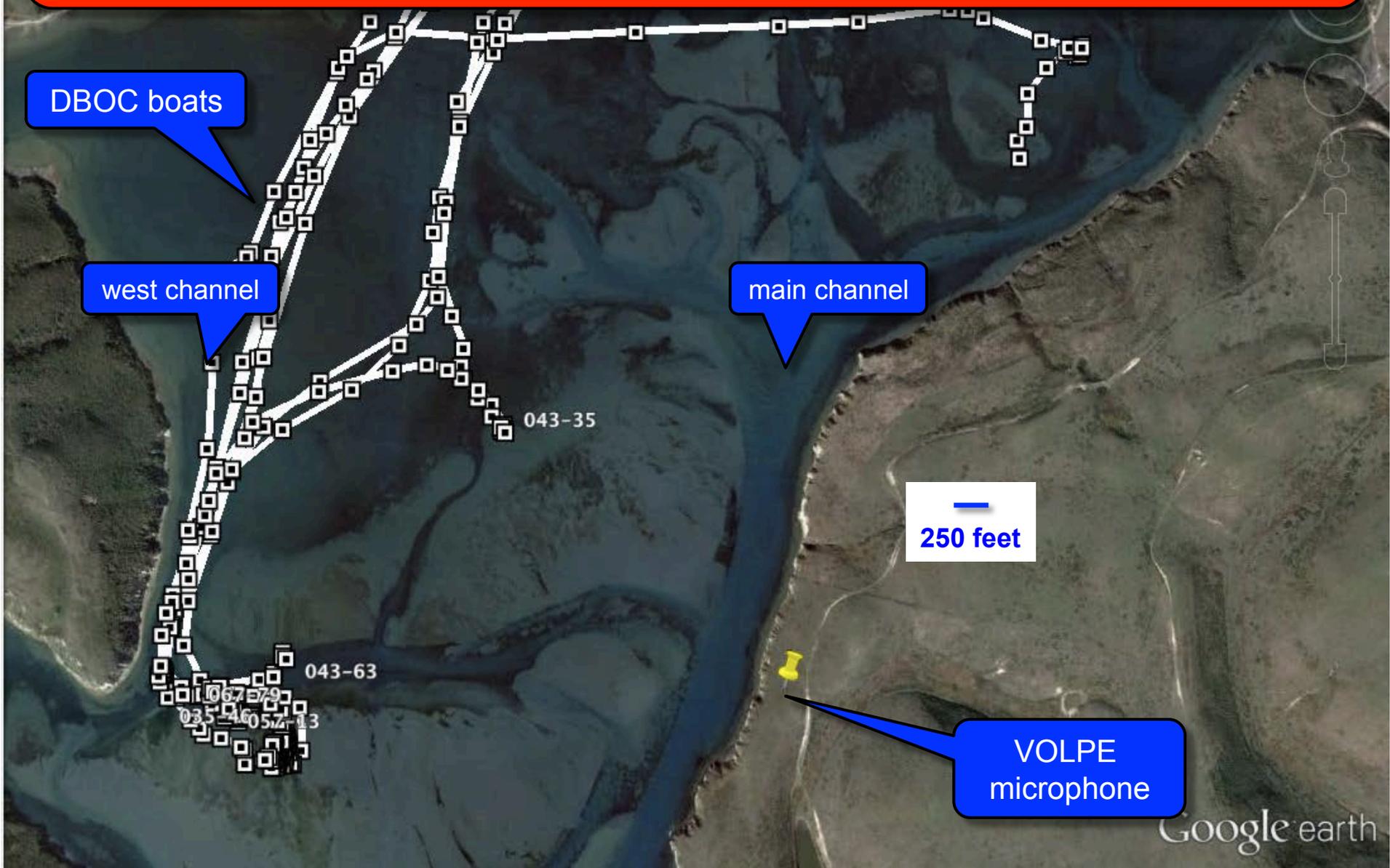


Google earth map of GPS recording of weekly DBOC boat trips along main channel on March 6, 2012: during pupping season (March-May), DBOC boats do not exceed 13 mph and typically stay below 12 mph



During pupping season, DBOC boats in main channel stay at or below 13 mph, and generate 58 to 65 dBA at 50 feet and dissipate in 400 to 800 feet

Google earth GPS map of DBOC boat trips along west channel (often to west end of lateral channel) in Jan-Feb 2010: sound path was unobstructed and PORE 004 microphone should have recorded boat trips, but did not

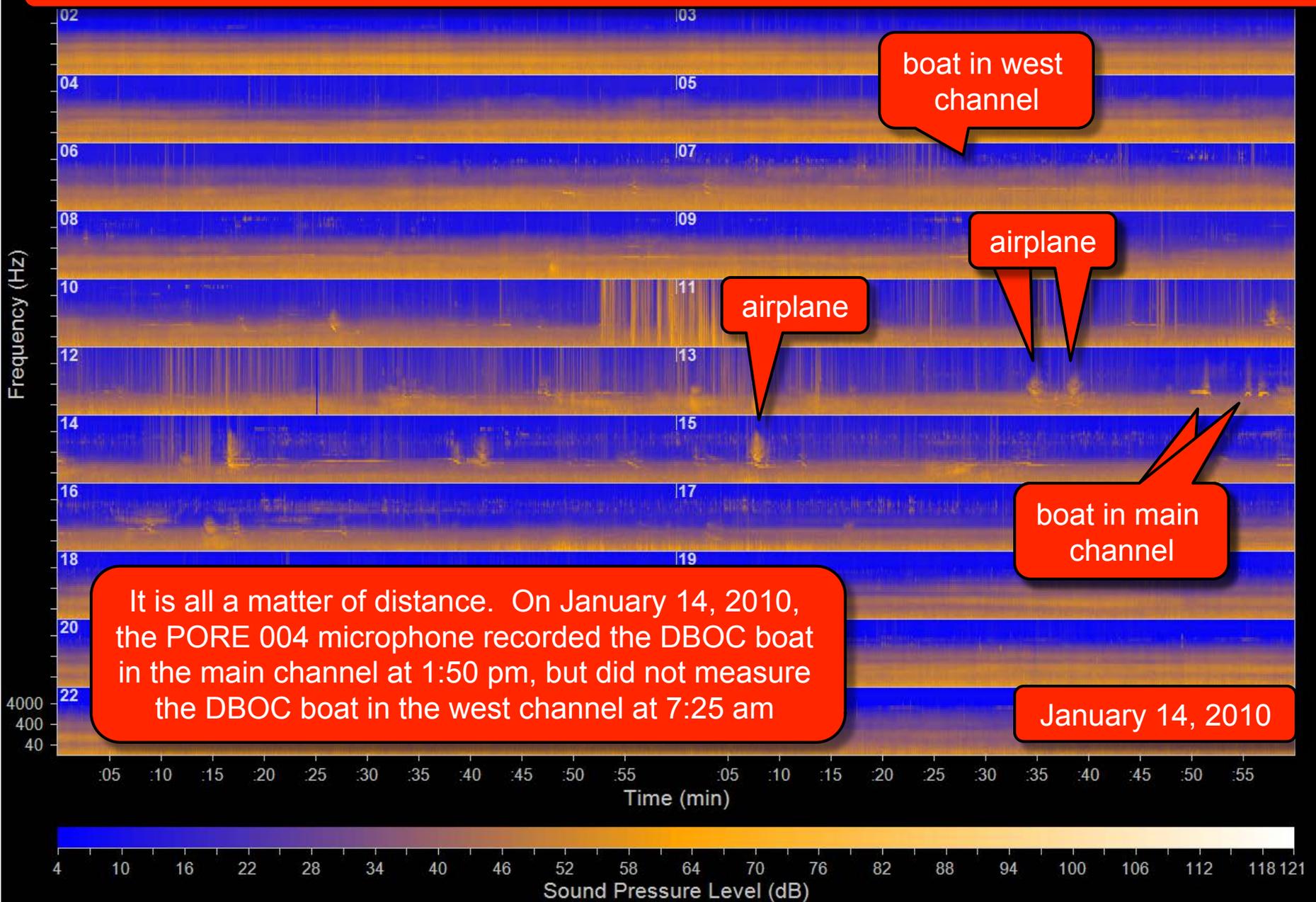


GPS location of DBOC boat trip from west channel to oyster bags on sandbar OB on January 14, 2010 from 7:25 - 7:32 am

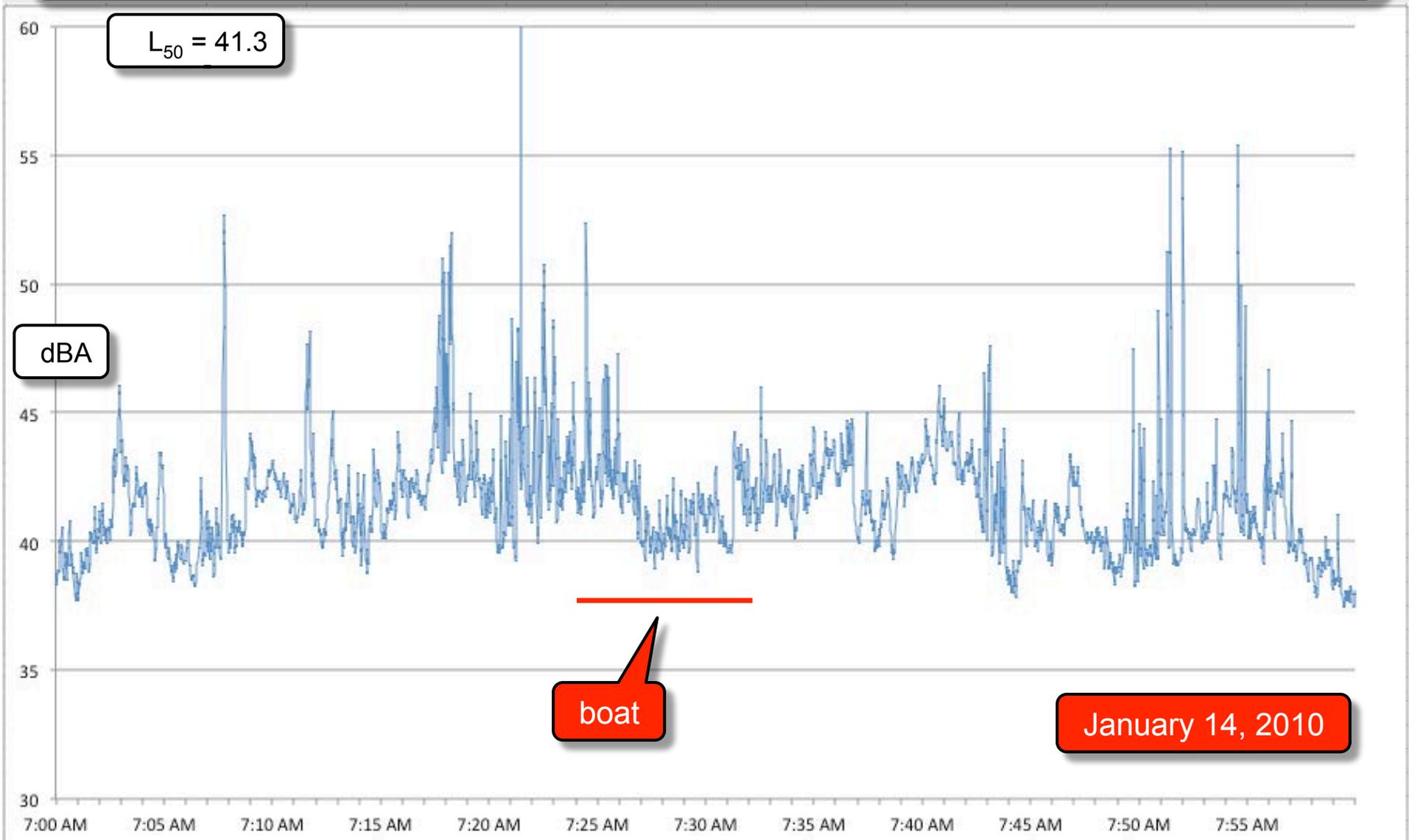


This DBOC boat trip, like other daily boat trips out the west channel, often to the west end of lateral channel, was not seen on spectral analysis and was not seen in the noise level (dBA) analysis at microphone PORE 004

DBOC boat trip in west channel was not recorded on January 14, 2010



PORE 004 recording between 7:00 am and 8:00 am on January 14, 2010
did not record DBOC boat in west channel and in middle of sandbar OB



NPS secret camera and NPS/VOLPE microphone overlapped for two weeks



NPS secret camera



VOLPE microphone

- The NPS secret camera program began on May 5, 2007. The main camera was focused on DBOC boats and workers at OB and UEN, and harbor seals at OB.
- In 2008, photographs were taken during pupping season (March-May) and a NPS log produced of DBOC boat trips.
- In 2009, photos continued into August with detailed NPS log of boat trips.
- The PORE 004 microphone location was selected on July 14, 2009, and recordings made from July 17 to Aug 15, 2009.
- The camera & microphone were both in ideal locations to focus on DBOC boats.
- The camera & microphone overlapped for over 2 weeks from July 17 to Aug 1.

NPS DEIS failed to report that daily DBOC boat trips neither disturbed the seals, nor were recorded by the microphone, contradicting the DEIS

NPS secret camera and NPS/VOLPE microphone overlapped for two weeks



NPS secret camera

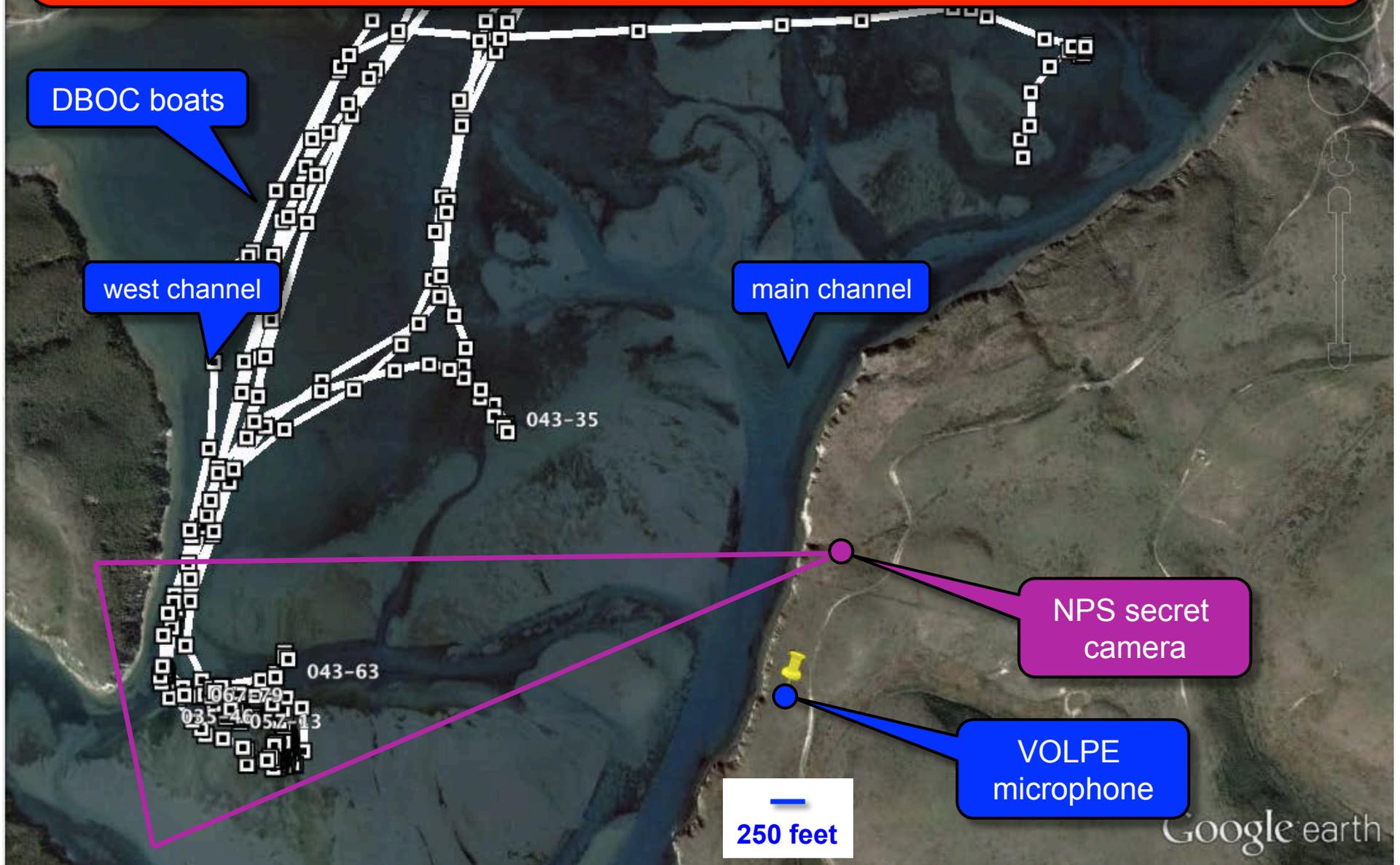


VOLPE microphone

- The camera & microphone overlapped for over 2 weeks from July 17 to Aug 1.
- The NPS log described 8 DBOC boat trips to lateral channel during that time.
- None of the DBOC boat trips caused disturbances of the harbor seals.
- The NPS log described 3 disturbances of harbor seals during that time period caused by kayakers, leading 50-100% of harbor seals to flush into water.
- None of the 8 DBOC boat trips to the lateral channel in the NPS log are seen on the NPS/VOLPE audio spectrogram.
- During the same period, 3 DBOC boat trips along the main channel, very close to the microphone, are seen on the NPS/VOLPE audio spectrogram.

NPS DEIS failed to report that daily DBOC boat trips neither disturbed the seals, nor were recorded by the microphone, contradicting the DEIS

NPS camera and microphone overlapped for two weeks from July 17 to Aug 1, 2009; they captured 8 DBOC boat trips in lateral channel, no DBOC seal disturbances, and no noise from boats in lateral channel



NPS camera and microphone overlapped for two weeks from July 17 to Aug 1, 2009; they captured 8 DBOC boat trips in lateral channel, no DBOC seal disturbances, and no noise from boats in lateral channel

7-17-09

from NPS 2009 camera log

Disturbance:

4:05-4:08 one kayak travels from UEM over OB and enters into protected area.

4:08 100% of seals on OB flush to water. It was almost low tide so not a lot of seals were hauled out. None of the seals re-hauled.

7-23-09

Disturbance:

9:19-9:51 four kayaks moored on UEM.

9:51-10:06 kayaks travel down OB channel and enters protected area.

10:05 50% of seals on OB flush to water.

10:05-10:25 some of the seals re-haul (not all).

Disturbance:

9:31-9:42 one kayak travels down OB channel and enters protected area.

9:42 all but about ten seals flush to water.

9:45 most seals re-haul.

Occasional disturbances to seals were caused by kayaks but not DBOC boats

2009-07-23 10:05:00 AM T

68°F



kayaks

seals

7-23-09

from NPS 2009 camera log

Disturbance:

9:19-9:51 four kayaks moored on UEM.

9:51-10:06 kayaks travel down OB channel and enters protected area.

10:05 50% of seals on OB flush to water.

10:05-10:25 some of the seals re-haul (not all).

July 23, 2009

Occasional disturbances to seals were caused by kayaks but not DBOC boats



NPS camera and microphone overlapped for two weeks from July 17 to Aug 1, 2009; they captured 8 DBOC boat trips in lateral channel, no DBOC seal disturbances, and no noise from boats in lateral channel

from NPS 2009 camera log

7-21-09

8:29-8:32 boat approaches UEM from above OB.
8:32-8:42 tending to beds on UEM.
8:42-8:46 boat leaves taking route above OB.
*seals present on sandbars, no disturbance.

1:04-1:08 boat approaches UEM from above OB.
1:08-1:41 tending to beds on UEM.
1:41-1:45 boat leaves taking route above OB.
*no seals present on sandbars.

7-22-09

12:39-12:43 boat approaches UEM from above OB.
12:43-2:09 tending to beds on UEM.
2:09-2:13 boat leaves taking route above OB.
*no seals present on sandbars.

7-30-09

3:37-3:51 boat approaches UEM from above OB and
They do not get out of boat to tend to beds.
*no seals present on sandbars.

7-30-09

8:20-8:23 boat approaches UEM from above OB.
8:23-8:38 tending to beds on UEM.
8:23-8:46 boat leaves taking route above OB.
*seals present on sandbars, no disturbance

12:18-12:19 boat approaches UEM from above OB.
12:19-12:28 tending to beds on UEM.
12:28-12:32 boat leaves taking route above OB.
*seals present on sandbars, no disturbance.

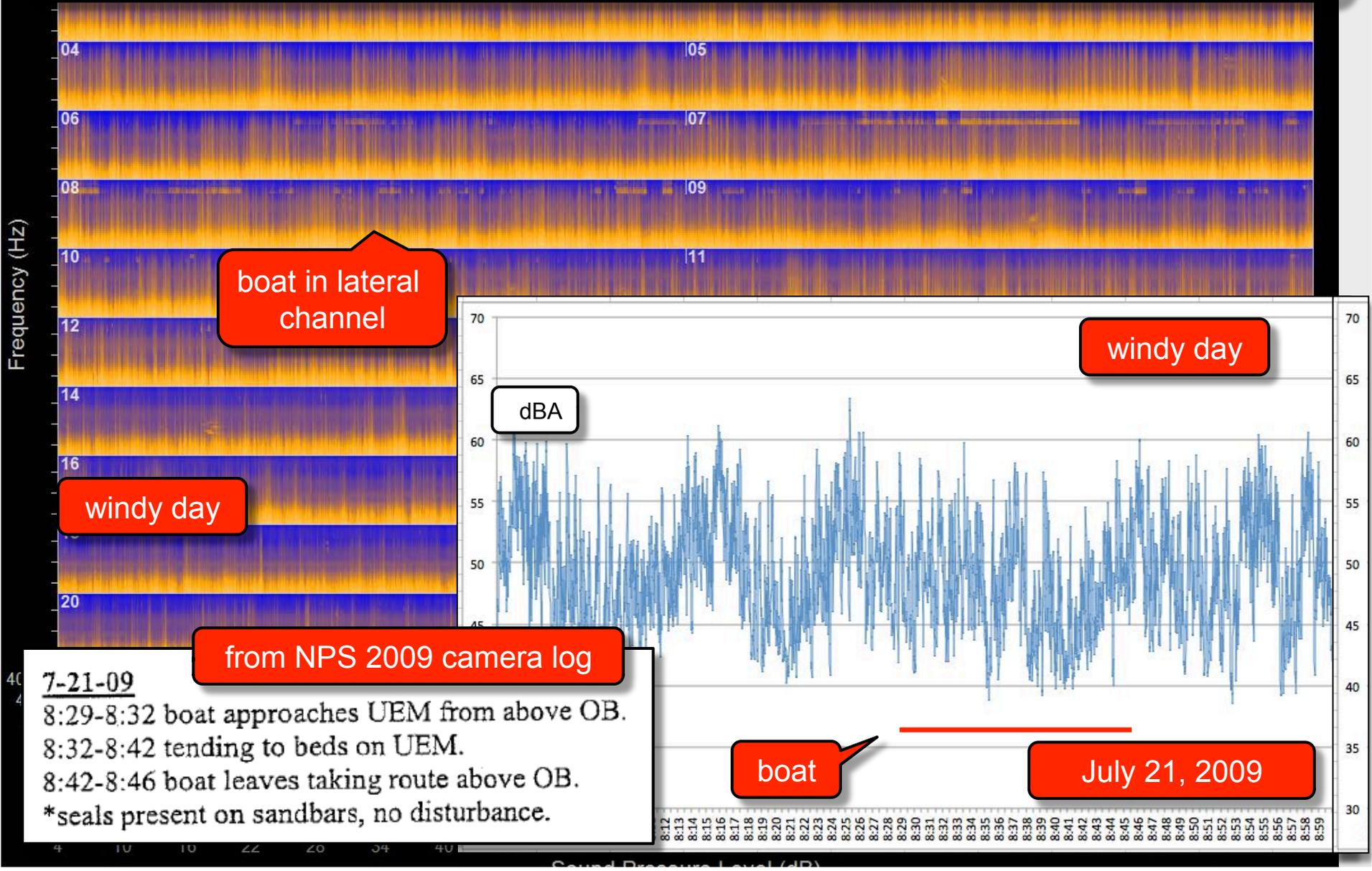
7-31-09

3:32-3:46 boat approaches UEM from above OB. Then
do not get out of the boat to tend to beds.
*no seals present on sandbars.

8-1-09

11:05-11:06 boat approaches UEM from above OB.
11:06-11:49 tending to beds on UEM.
11:49-11:55 boat leaves taking route above OB.
*no seals present on sandbars.

DBOC boat trip to lateral channel at 8:29 am on July 21, 2009 was not recorded by the PORE 004 microphone ...



boat in lateral channel

windy day

windy day

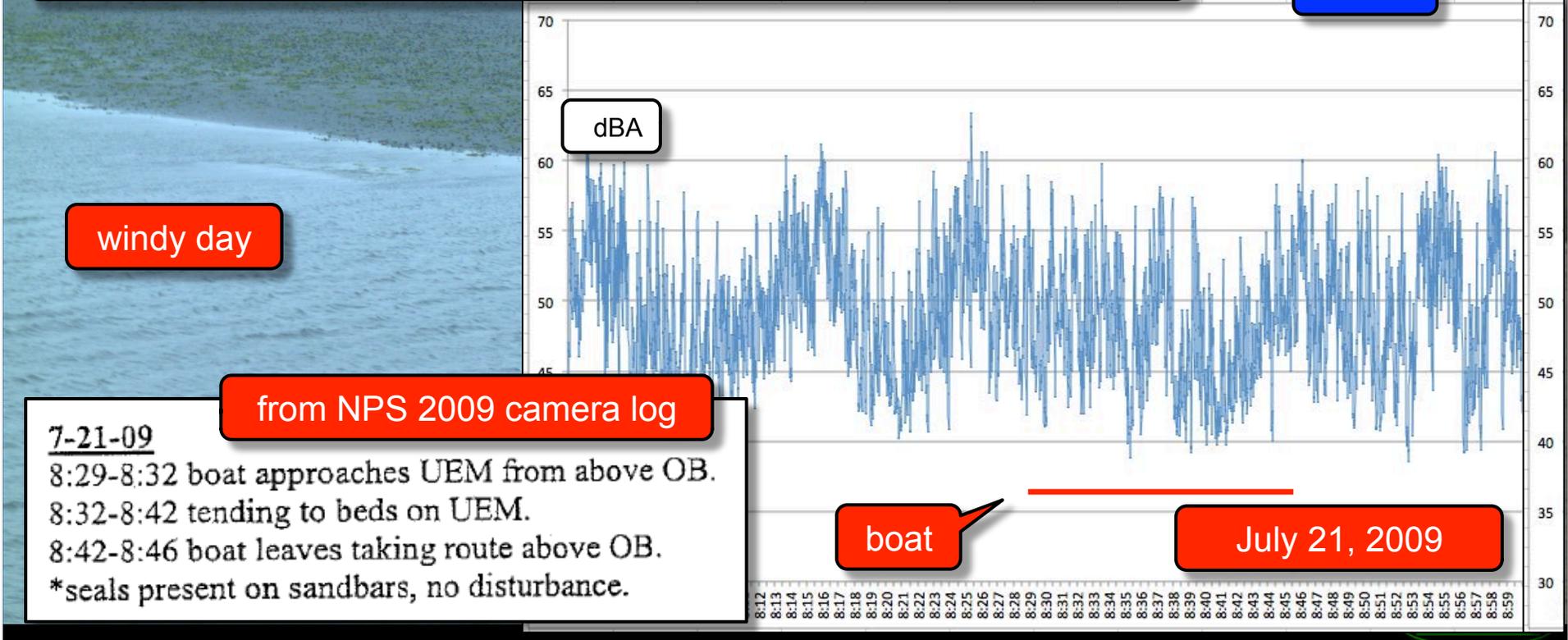
from NPS 2009 camera log

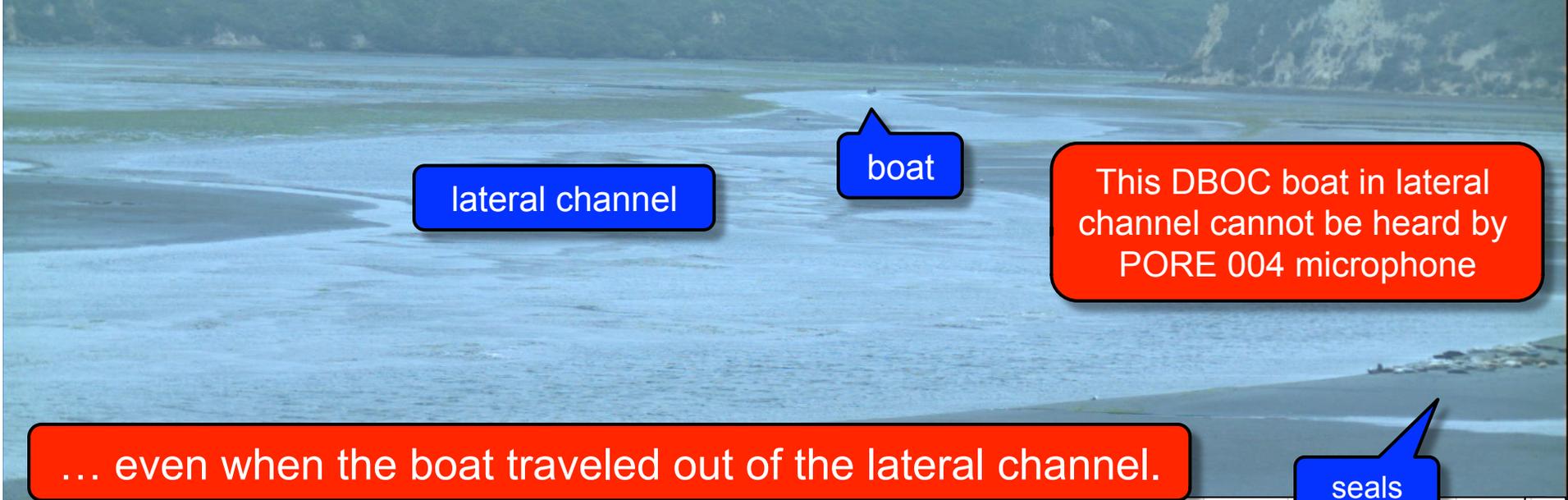
boat

July 21, 2009

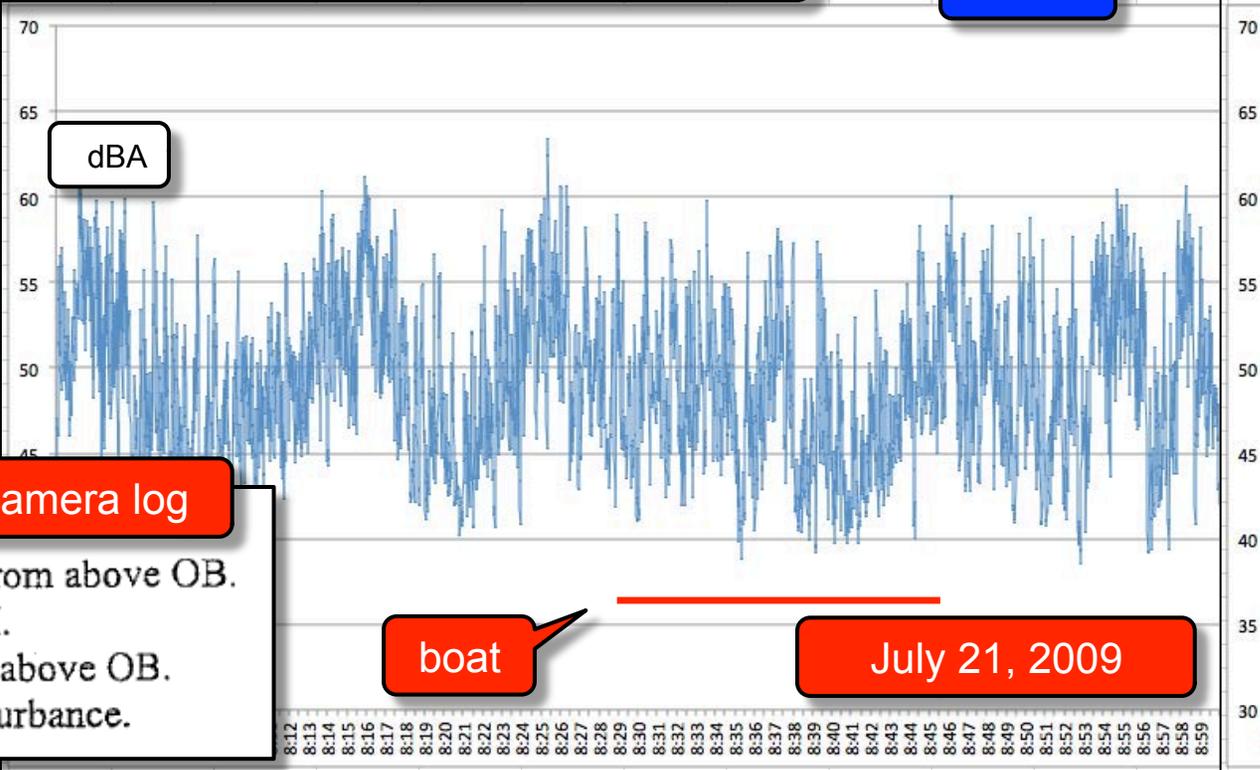
7-21-09
 8:29-8:32 boat approaches UEM from above OB.
 8:32-8:42 tending to beds on UEM.
 8:42-8:46 boat leaves taking route above OB.
 *seals present on sandbars, no disturbance.

8:12 8:13 8:14 8:15 8:16 8:17 8:18 8:19 8:20 8:21 8:22 8:23 8:24 8:25 8:26 8:27 8:28 8:29 8:30 8:31 8:32 8:33 8:34 8:35 8:36 8:37 8:38 8:39 8:40 8:41 8:42 8:43 8:44 8:45 8:46 8:47 8:48 8:49 8:50 8:51 8:52 8:53 8:54 8:55 8:56 8:57 8:58 8:59





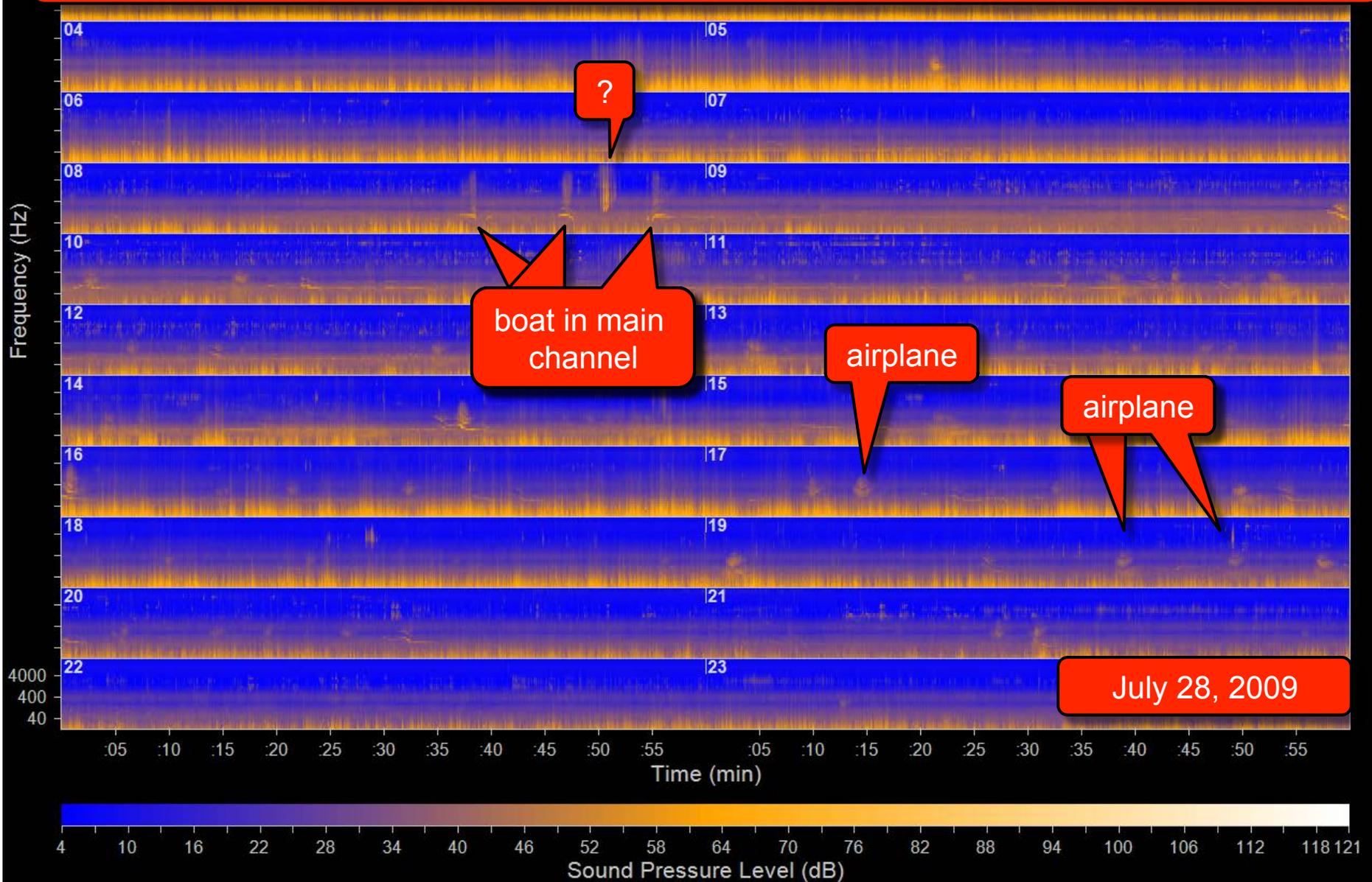
windy day



from NPS 2009 camera log

7-21-09
 8:29-8:32 boat approaches UEM from above OB.
 8:32-8:42 tending to beds on UEM.
 8:42-8:46 boat leaves taking route above OB.
 *seals present on sandbars, no disturbance.

In contrast, DBOC boat trip to main channel at 8:30 am on July 28, 2009 WAS recorded by the PORE 004 microphone at a distance of ~ 400 feet



In contrast, DBOC boat trip to main channel at 8:30 am on July 28, 2009 WAS recorded by the PORE 004 microphone at a distance of ~ 400 feet

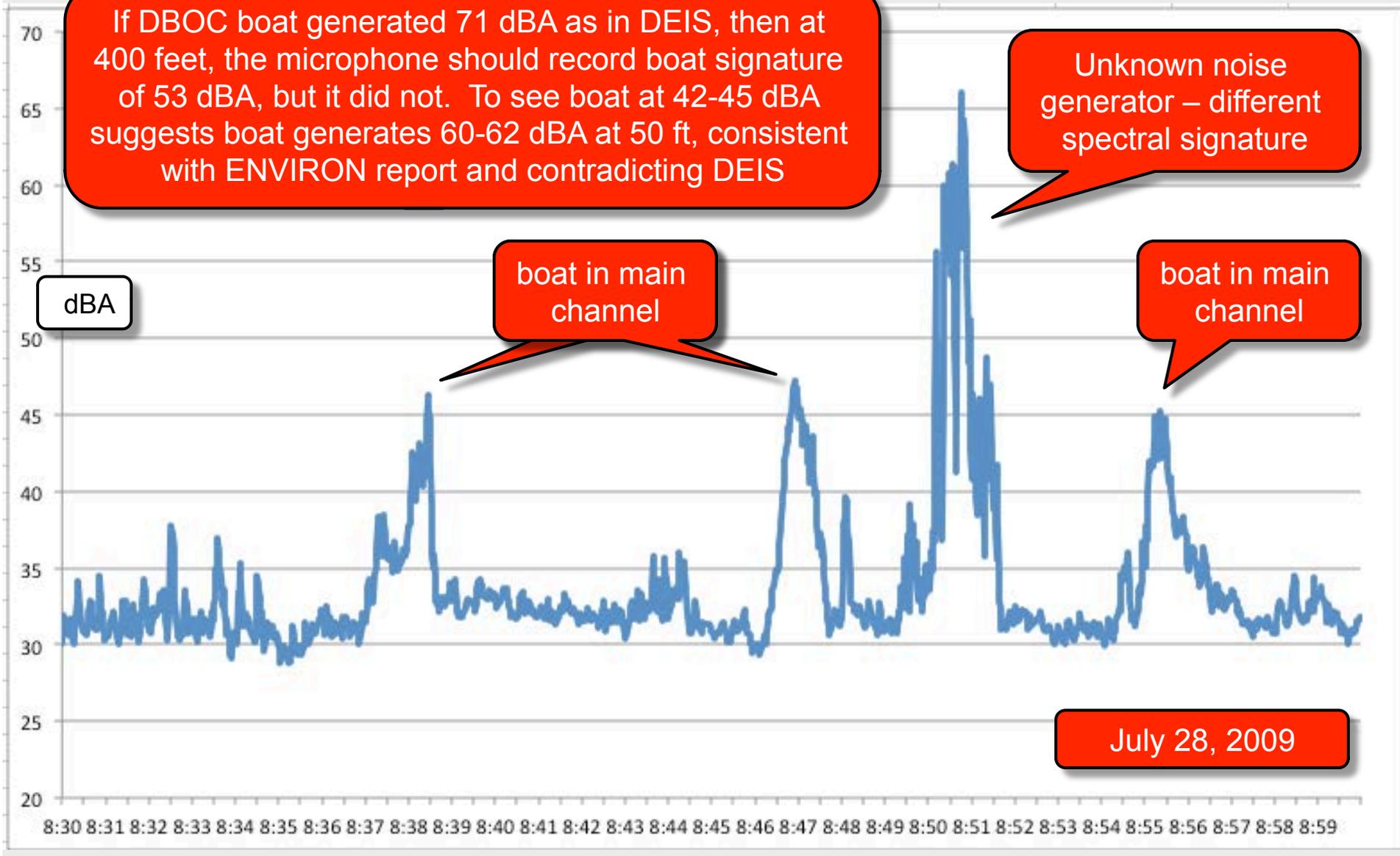
If DBOC boat generated 71 dBA as in DEIS, then at 400 feet, the microphone should record boat signature of 53 dBA, but it did not. To see boat at 42-45 dBA suggests boat generates 60-62 dBA at 50 ft, consistent with ENVIRON report and contradicting DEIS

Unknown noise generator – different spectral signature

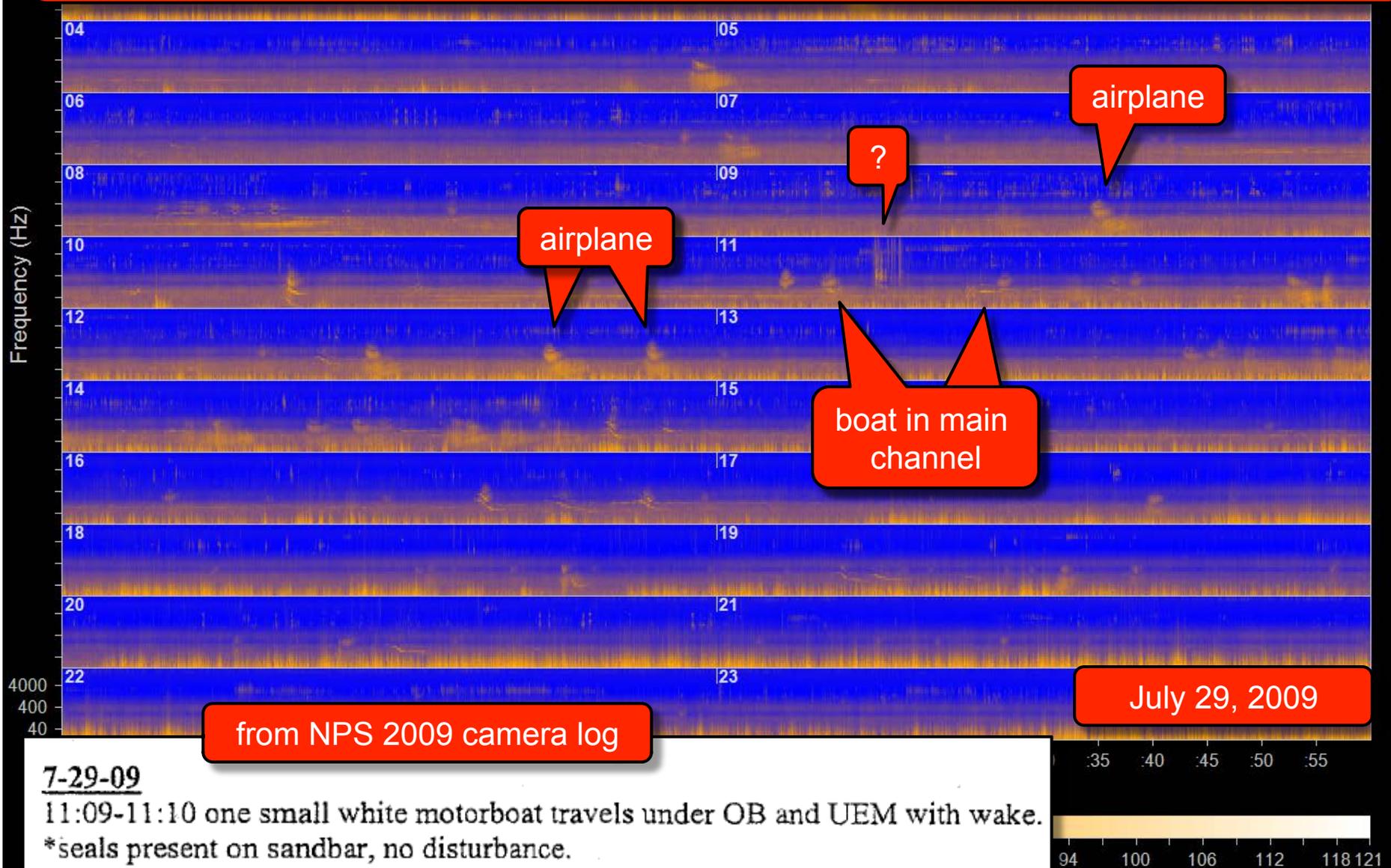
boat in main channel

boat in main channel

July 28, 2009



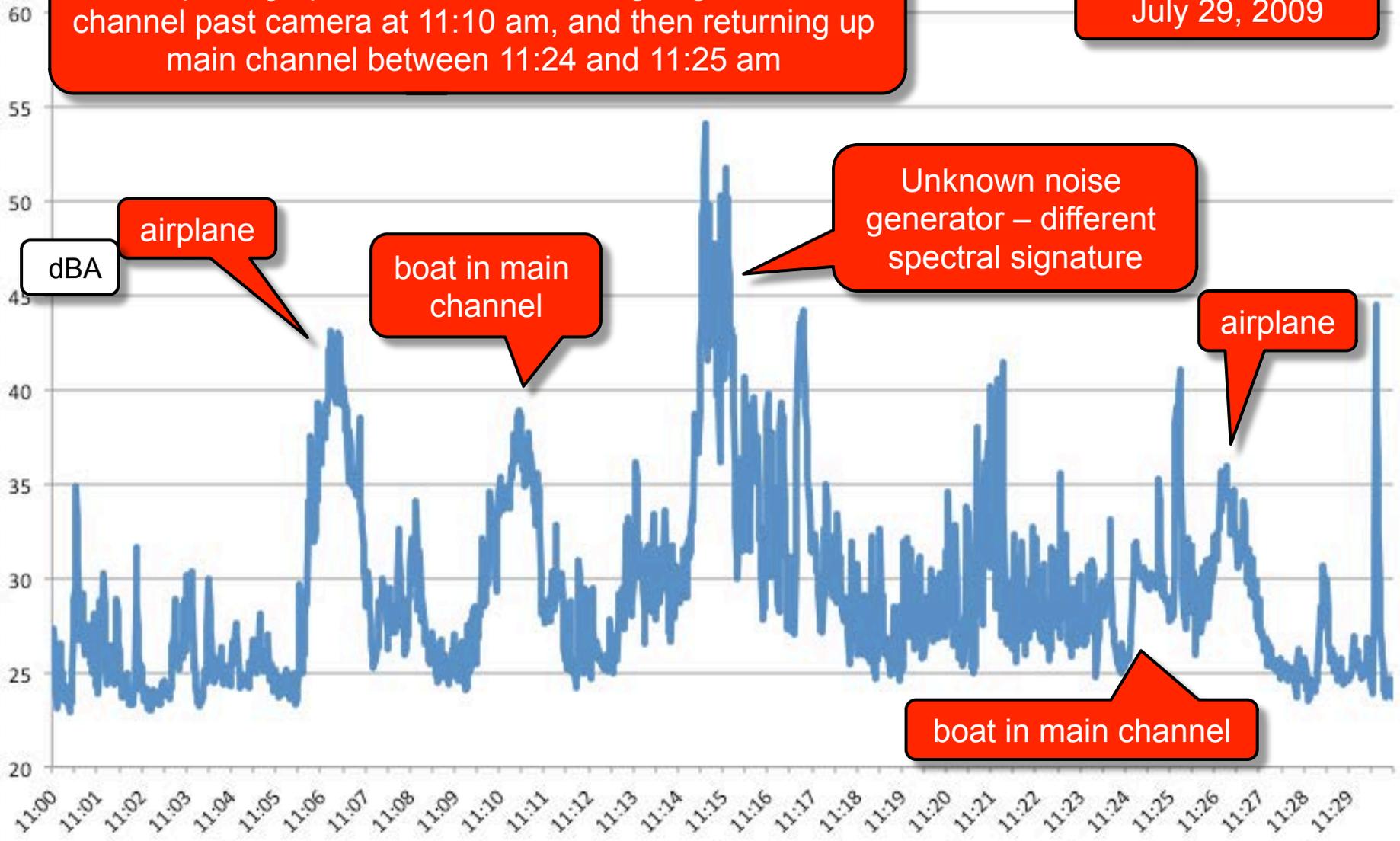
Similarly, DBOC boat trip to main channel at 11:00 am on July 29, 2009 WAS recorded by the PORE 004 microphone at a distance of ~ 400 feet



Similarly, DBOC boat trip to main channel at 11:00 am on July 29, 2009 WAS recorded by the PORE 004 microphone at a distance of ~ 400 feet

NPS photographs show DBOC boat going out main channel past camera at 11:10 am, and then returning up main channel between 11:24 and 11:25 am

July 29, 2009



Similarly, DBOC boat trip to main channel at 11:00 am on July 29, 2009 WAS recorded by the PORE 004 microphone at a distance of ~ 400 feet

If DBOC boat generated 71 dBA as in DEIS, then at 400 feet, the microphone should record boat signature of 53 dBA, but it did not. To see boat at 39 dBA suggests boat generates 57 dBA at 50 ft.

from NPS 2009 camera log

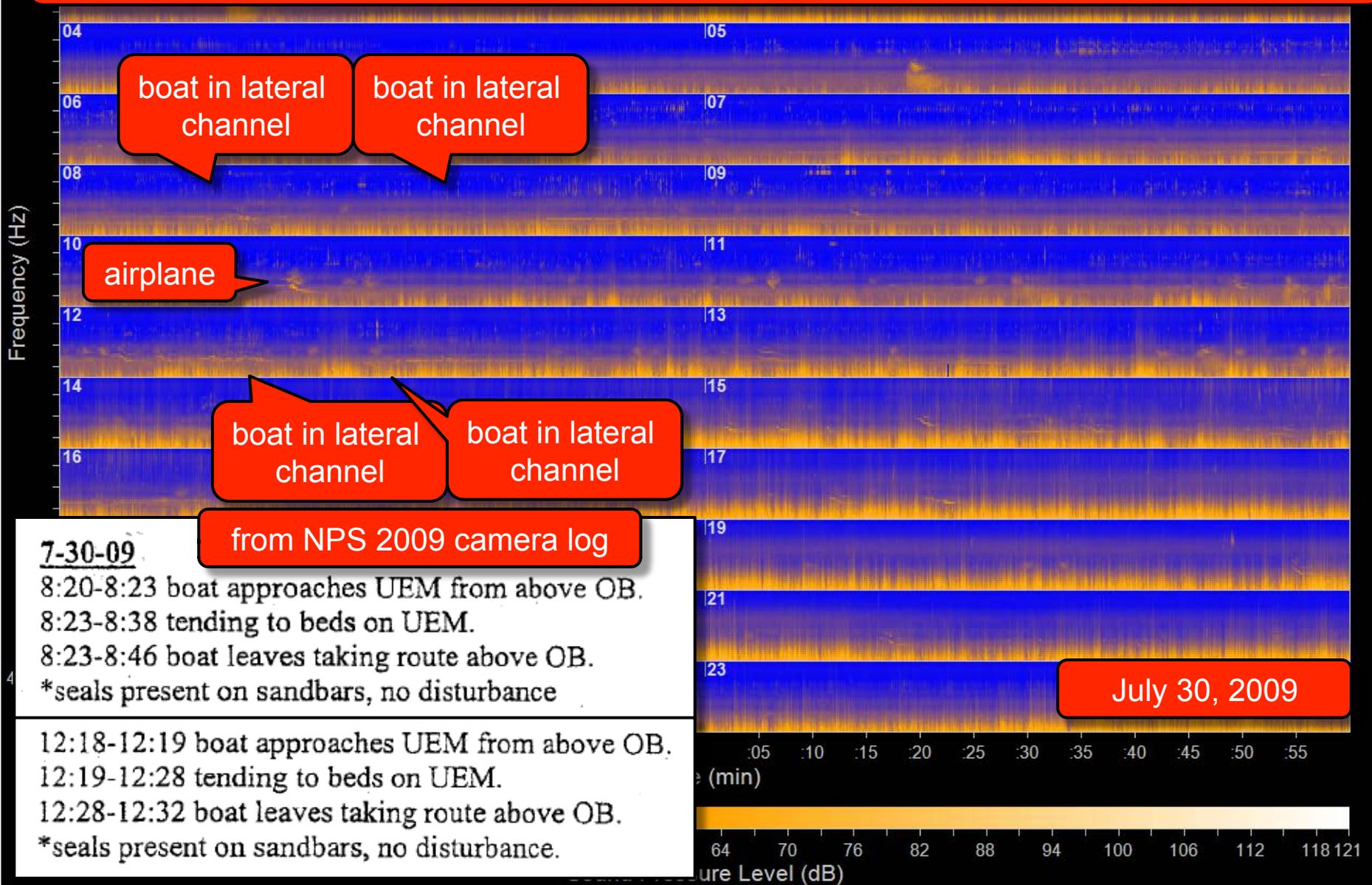
7-29-09
11:09-11:10 one small white motorboat travels under OB and UEM with wake.
*seals present on sandbar, no disturbance.

seals

boat

July 29, 2009

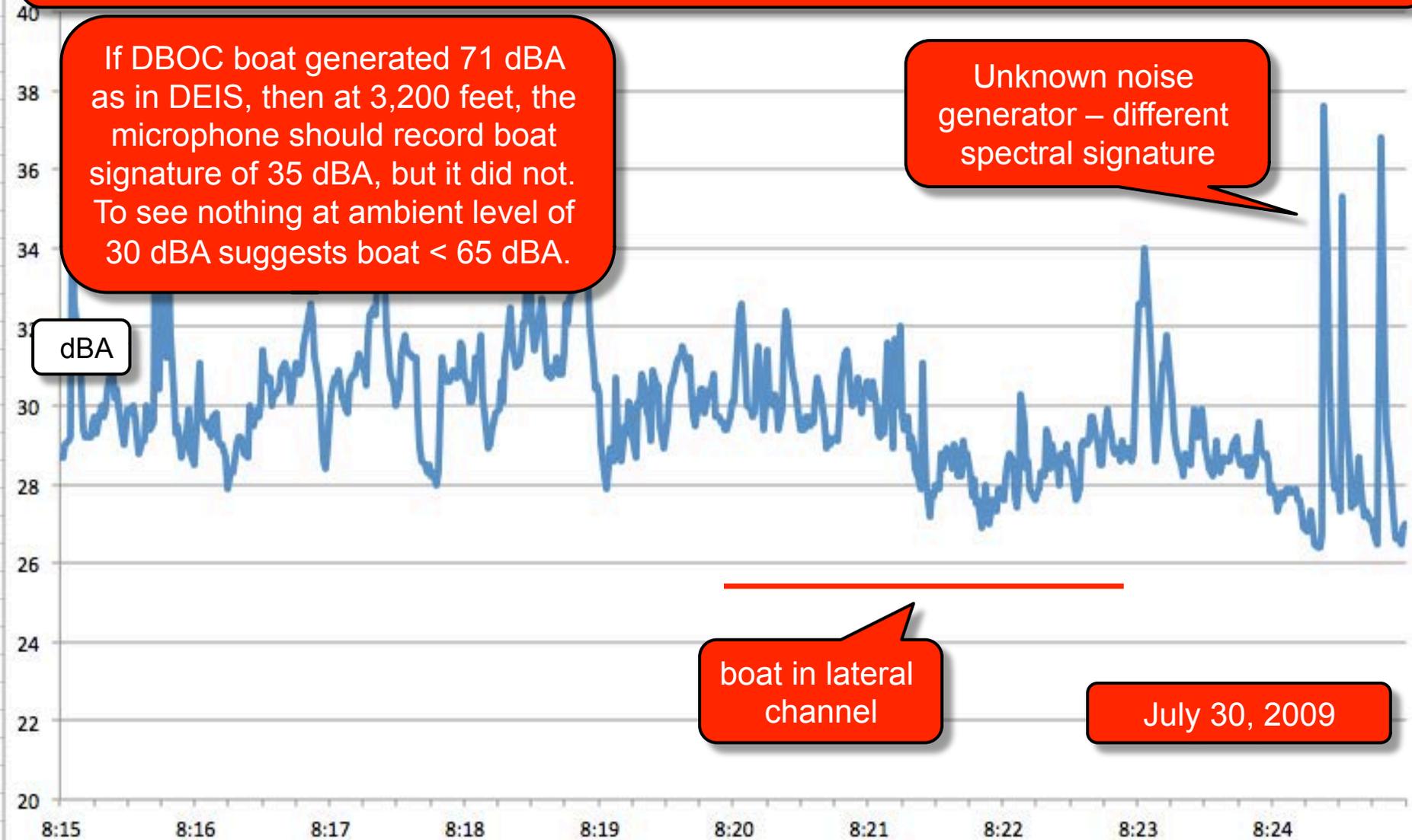
DBOC boat trips to lateral channel at 8:20 am and again at 12:18 pm on July 30, 2009 were not recorded by the PORE 004 microphone



DBOC boat trips to lateral channel at 8:20 am (see below) and again at 12:18 pm on July 30, 2009 were not recorded by the PORE 004 microphone

If DBOC boat generated 71 dBA as in DEIS, then at 3,200 feet, the microphone should record boat signature of 35 dBA, but it did not. To see nothing at ambient level of 30 dBA suggests boat < 65 dBA.

Unknown noise generator – different spectral signature

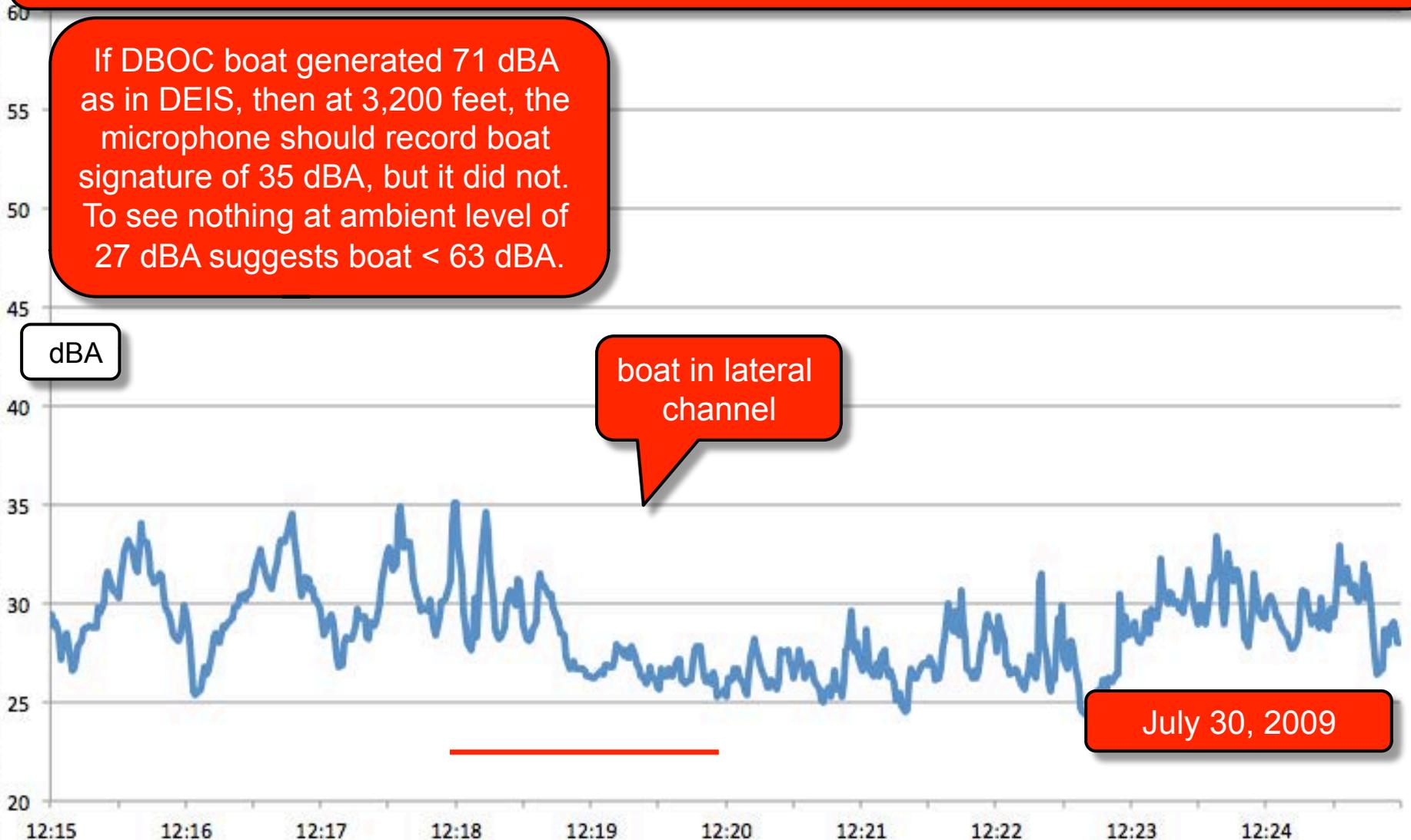


boat in lateral channel

July 30, 2009

DBOC boat trips to lateral channel at 8:20 am and again at 12:18 pm (see below) on July 30, 2009 were not recorded by the PORE 004 microphone

If DBOC boat generated 71 dBA as in DEIS, then at 3,200 feet, the microphone should record boat signature of 35 dBA, but it did not. To see nothing at ambient level of 27 dBA suggests boat < 63 dBA.



boat

This DBOC boat in lateral channel cannot be heard by PORE 004 microphone

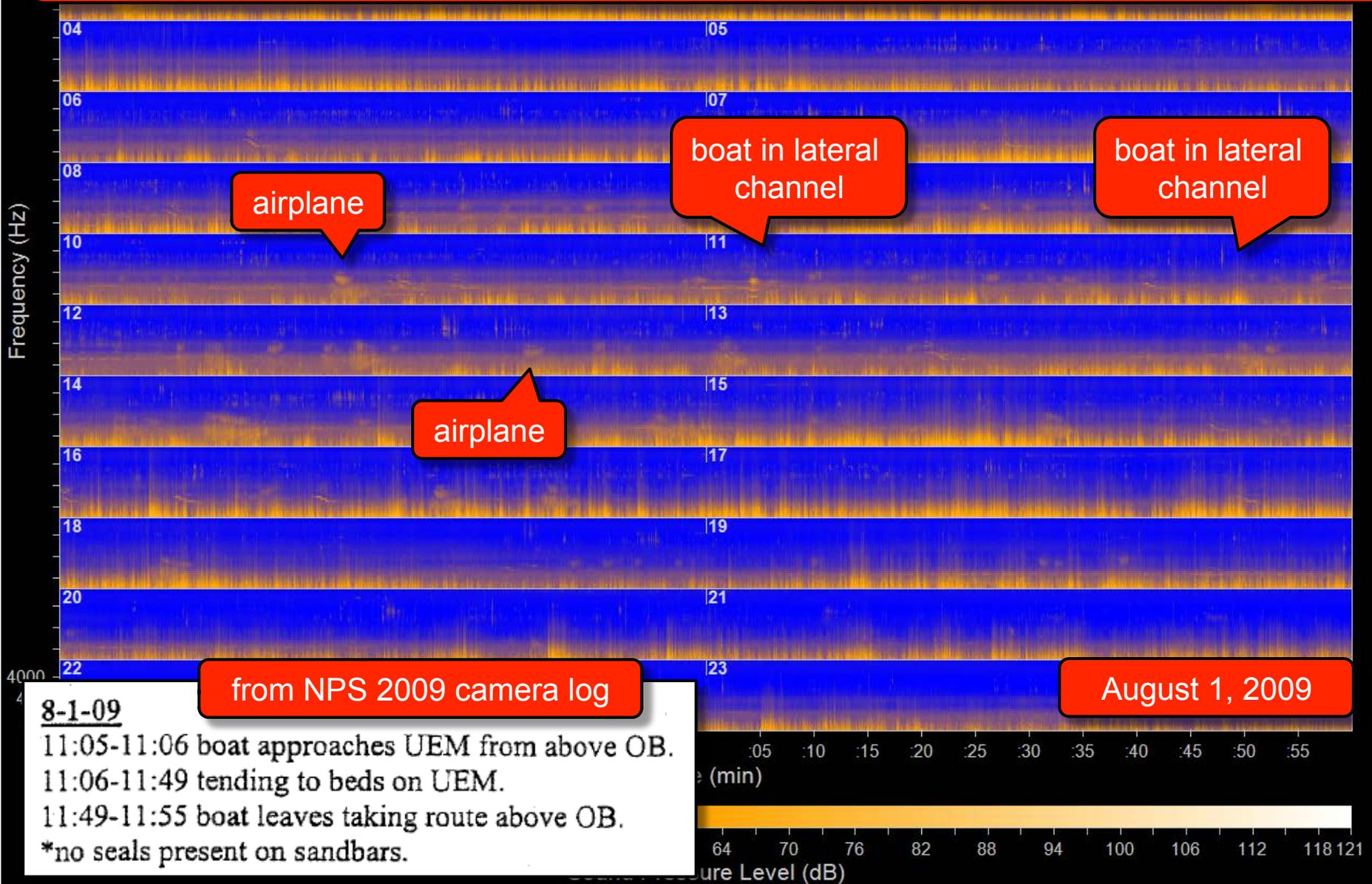
from NPS 2009 camera log

7-30-09
8:20-8:23 boat approaches UEM from above OB.
8:23-8:38 tending to beds on UEM.
8:23-8:46 boat leaves taking route above OB.
*seals present on sandbars, no disturbance

12:18-12:19 boat approaches UEM from above OB.
12:19-12:28 tending to beds on UEM.
12:28-12:32 boat leaves taking route above OB.
*seals present on sandbars, no disturbance.

July 30, 2009

DBOC boat trip to lateral channel at 11:05 am on August 1, 2009 was not recorded by the PORE 004 microphone



2009-08-01 11:06:00 AM T

80°F

boat

This DBOC boat in lateral channel cannot be heard by PORE 004 microphone

from NPS 2009 camera log

8-1-09

11:05-11:06 boat approaches UEM from above OB.

11:06-11:49 tending to beds on UEM.

11:49-11:55 boat leaves taking route above OB.

*no seals present on sandbars.

August 1, 2009

RECONYX

GPS records of DBOC boats in January-February 2010 were used to determine spectral signature of boats. All 59 days of recordings were examined to identify all recordings of boats by PORE 004 microphone. Only 7 recordings of DBOC weekly boat trips were found over 59 days, all along main channel, as mandated by CDPH.



Figure 53. Site PORE004: Description and photograph.

None of the 50+ DBOC boat trips along the west channel to OB, UEN, and the lateral channel during that period were recorded by PORE 004 microphone.

NPS should have known that NPS cameras and microphone disproved NPS



NPS secret camera



VOLPE microphone

- DEIS claimed DBOC boats heard for 1.3 miles while ENVIRON claimed heard for 400 feet.
- NPS claims based on false representations of DBOC boat noise and ambient sound level leading to exaggerated distances.
- NPS suppressed data that disproved claims.
- The combination of NPS/VOLPE data, NPS photographs from secret cameras, and DBOC GPS data, shows that DBOC boats only heard for 400-800 feet and not 1-2 miles.
- DBOC boats in main channel, just 400-500 ft from microphone, can be heard on recordings.
- But DBOC boats in west and lateral channel cannot be heard, disproving NPS claims.
- NPS concealed these data. False representations, deception, and concealment are part of the definition of fraud.

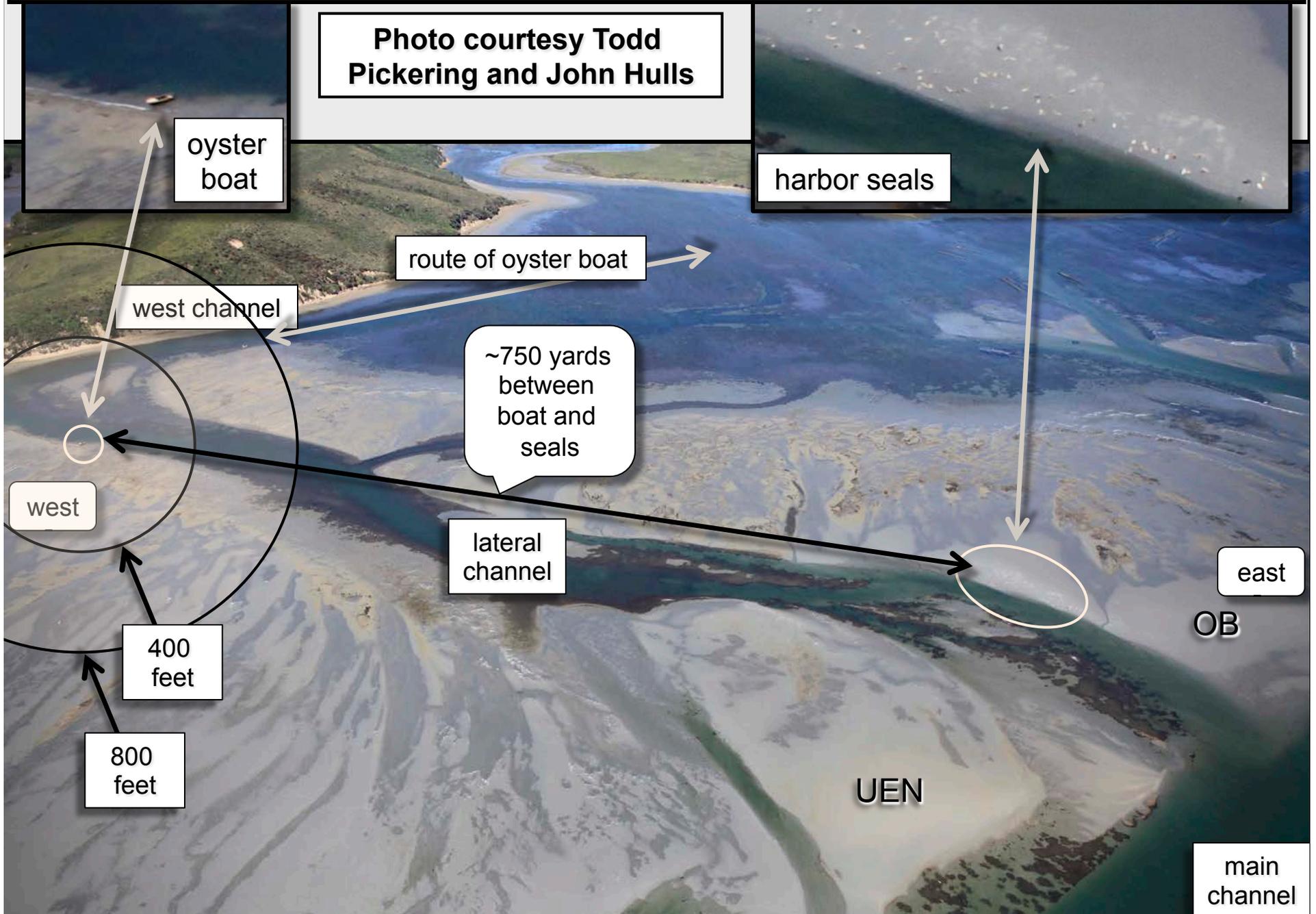
NPS data from microphone and cameras disprove NPS soundscape claims in DEIS

Summary: sound path from boats to microphone was unobstructed; microphone recorded boats in main channel but not west channel

- 1) NPS failed to follow Management Policies 2006 and Director's Order #47
- 2) DEIS overestimated DBOC boat noise (misused NOISE UNLIMITED 1995 report)
- 3) DEIS underestimated ambient noise level (misused VOLPE 2011 report)
- 4) DEIS exaggerated distance over which DBOC boats heard (to incredible distances), concluding DBOC boats could be heard all across estero thus disturbing wildlife
- 5) NPS placed microphone at Drakes Estero to record DBOC human-generated noises
- 6) NPS secret camera and NPS/VOLPE microphone overlapped for 2 weeks in July 2009
- 7) VOLPE 2011 report said nothing about recording DBOC boats or equipment
- 8) DEIS dismissed VOLPE data saying bluff blocked sound path from boat to microphone
- 9) Google earth elevations show sound path from boats to microphone unobstructed
- 10) ENVIRON 2011 report measured boat noise and found it much lower than in DEIS
- 11) Our analysis of VOLPE data shows DBOC boats have distinctive spectral signature
- 12) Our analysis of VOLPE data show 7 DBOC boats recorded in 59 days; all boat recordings were from main channel near microphone (often on Tuesdays)
- 13) 50+ nearly daily boat trips along west channel were not recorded (too far away)
- 14) ~ 1,000 aircraft overflights were recorded
- 15) DBOC boats are closer in noise generated to ENVIRON report than to DEIS
- 16) Ambient levels are closer to ENVIRON and VOLPE reports than to DEIS
- 17) DBOC boats heard for 400-800 feet depending on boat speed and ambient noise level
- 18) NPS deceived the public and peer-reviewers in the DEIS with false representations
- 19) NPS had access to data from microphone that showed the DEIS was incorrect
- 20) DEIS dismissed data from microphones just as dismissed data from secret cameras
- 21) SUPPLEMENTAL DATA ANALYSIS (next pages): FAA photographs show unobstructed visual path, and thus sound path, from oyster boats to microphone, in contrast to DEIS

Depending upon speed, boats heard for 400-800 feet; boat is 2250 feet from seals

Photo courtesy Todd Pickering and John Hulls



oyster boat

harbor seals

route of oyster boat

west channel

~750 yards between boat and seals

west

lateral channel

east

OB

400 feet

800 feet

UEN

main channel

**NPS Misrepresented and Concealed Acoustic Data
And Deceived the Peer Reviewers
of the Draft Environmental Impact Statement (DEIS) on DBOC
Supplemental Analysis of FAA Data Obtained by FOIA**



by Dr. Corey S. Goodman

**Analysis of FAA VOLPE photographs and data from
microphone PORE 004 data contradicts NPS DEIS.**

According to the NPS DEIS, the VOLPE PORE 004 microphone was on a bluff over Drakes Estero and may not have recorded DBOC boats due to the bluff blocking the sound path from boat to microphone.

The recordings from PORE 004 microphone got dismissed with this sentence.

From NPS DEIS Chapter 3

Topography can affect sound transmission through air. Steep topography such as the bluffs around some of Drakes Estero can block sound transmission. Because the 2009 sound measurements used in this EIS were taken on a bluff well above Drakes Estero, the measurements may have recorded limited mariculture-related noises.

“2009 sound measurements” refers to VOLPE PORE 004 microphone along east shore of Drakes Estero near location of NPS secret cameras

This was tested previously using Google earth elevation profiles of DBOC boats and PORE 004 microphone to determine that the sound path from the boat to the microphone was unobstructed, contradicting the DEIS.

The sound path from DBOC boats to the PORE 004 microphone was unobstructed; VOLPE 2011 report should have recorded DBOC boats

Western-Pacific Region
Los Angeles, CA 90009
FP-01 (JD857)

**BASELINE AMBIENT SOUND
LEVELS IN POINT REYES
NATIONAL SEASHORE**



March 2011
Final Report

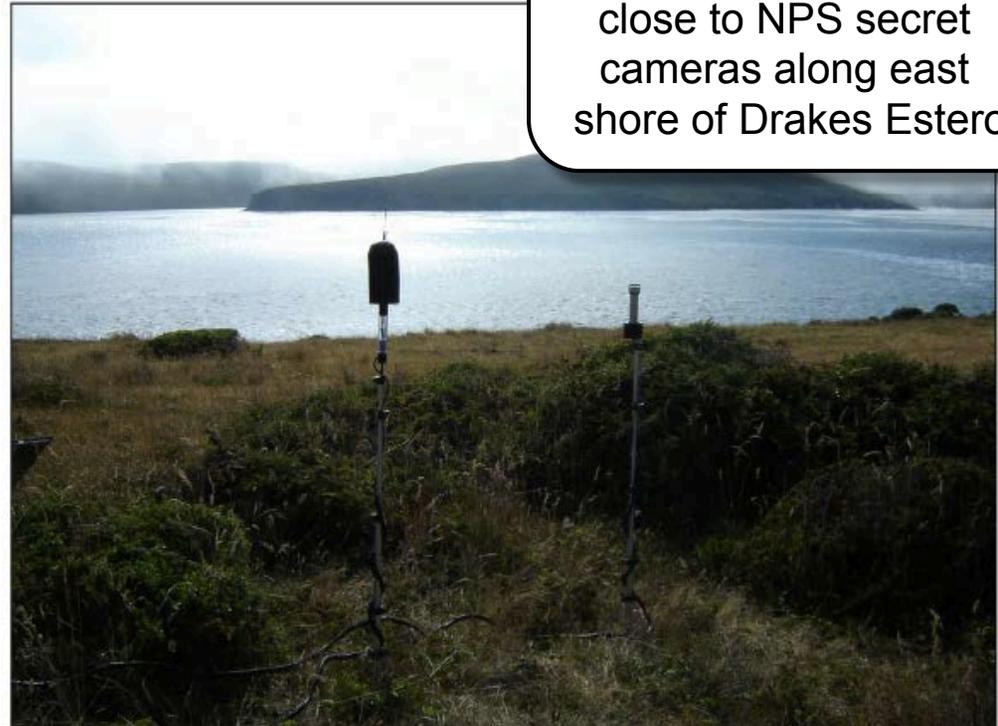


U.S. Department of Transportation
Federal Aviation Administration

Appendix A

**Baseline Ambient Sound Levels
in Point Reyes National Seashore**

A.4 Site PORE004 – Drakes Head Estero



VOLPE PORE 004 microphone located close to NPS secret cameras along east shore of Drakes Estero

The PORE 004 microphone was located on a bluff to record DBOC boats. The VOLPE 2011 report never mentioned DBOC boats, and the NPS DEIS never mentioned that the microphone had not recorded the DBOC boats.

At 9:50 am on July 31, 2009, one FAA observer said to another at the start of their observer log session, while setting up at PORE 004 microphone:

Western-Pacific Region
Los Angeles, CA 90009
FP-01 (JD857)

**BASELINE AMBIENT SOUND
LEVELS IN POINT REYES
NATIONAL SEASHORE**



March 2011
Final Report

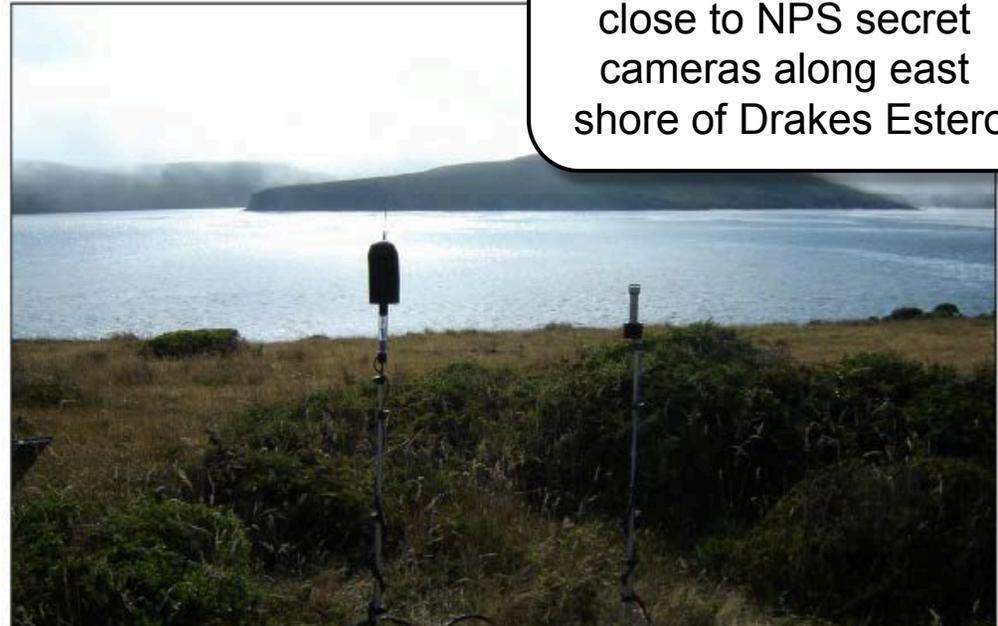


U.S. Department of Transportation
Federal Aviation Administration

Appendix A

**Baseline Ambient Sound Levels
in Point Reyes National Seashore**

A.4 Site PORE004 – Drakes Head Estero



VOLPE PORE 004 microphone located close to NPS secret cameras along east shore of Drakes Estero

“There is a big show down between the Park Service and the one remaining oyster farmer down here. Gonna return this to complete pristine wilderness, and he’s the hold out. Now he’s got Feinstein on his side.”

FAA observers at low tide took many photos of both boats and seals

oyster bed

boat

west channel

lateral channel

PORE 004
microphone

main channel

In contrast to the statement in DEIS, the sound path from DBOC boats to PORE 004 microphone was unobstructed; microphone should have recorded boats but did not.

FAA observers at low tide took many photos of both boats and seals

west channel

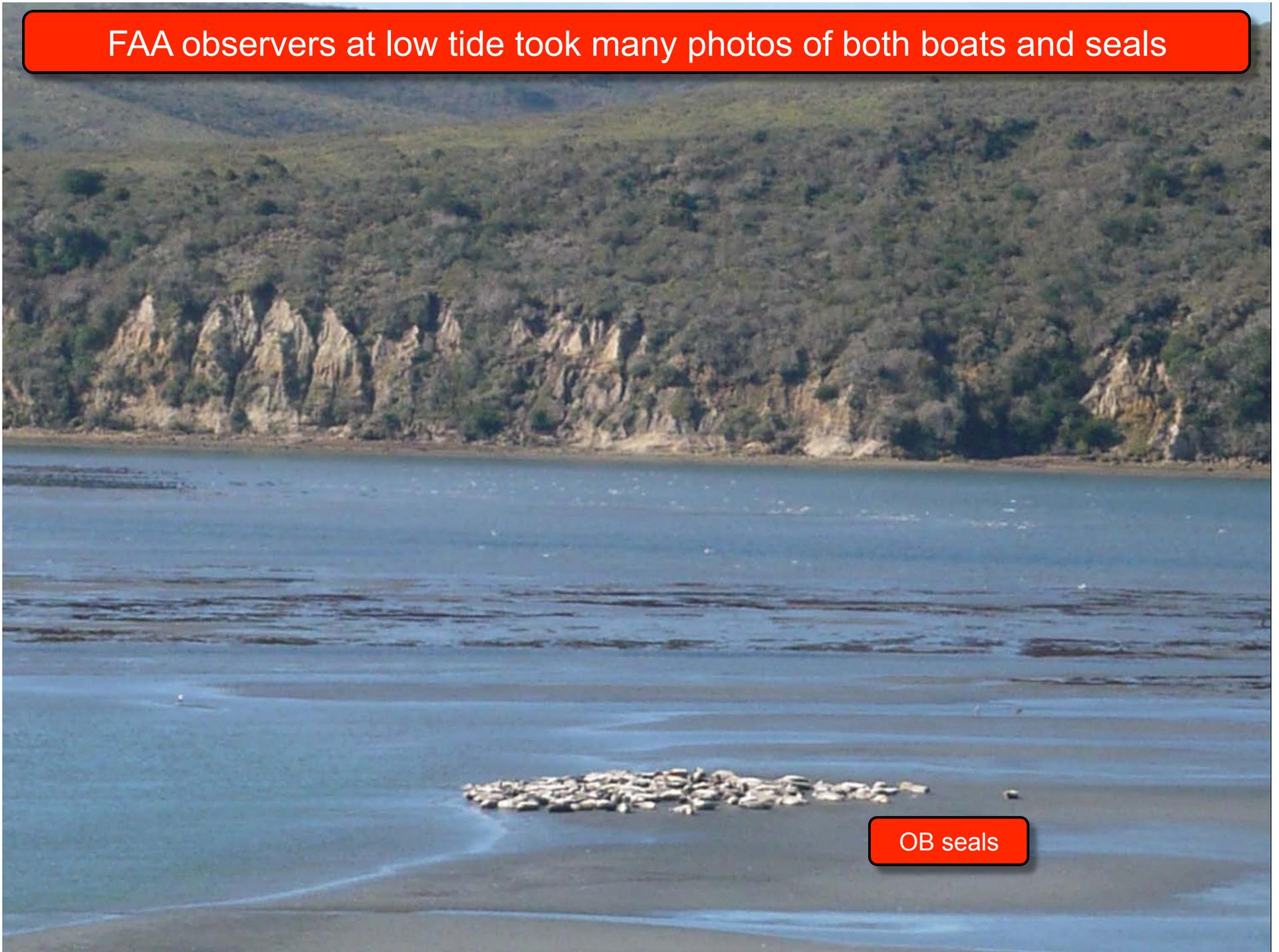
OB seals

lateral channel

main channel



FAA observers at low tide took many photos of both boats and seals



OB seals

FAA Observer log of DBOC boat in lateral channel on July 31, 2009

ATMP
Site:

31-Jul-09

July 31, 2009

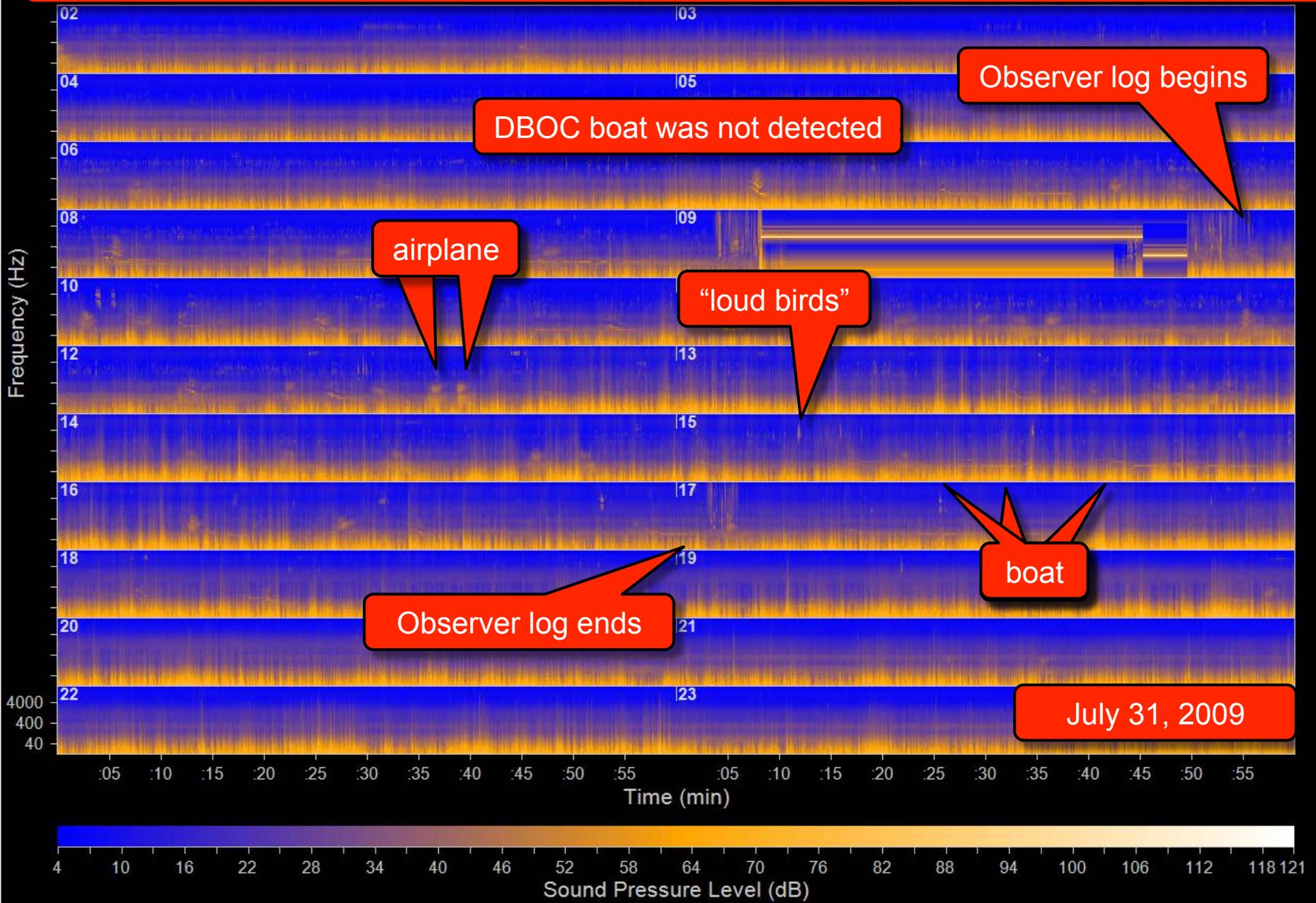
Time	Acoustic State	A/C Type	Num Eng	A/C Alt	A/C Oper	Backgnd Type	Comments
09:57:11	Beg Log	***	***	***	***	***	Breezy, foggy, damp, lower 60`s
09:57:17	Natural	***	***	***	***	Wind/Fol	Wind w/ occasional gulls in bay
09:58:10	Aircraft	Jet				***	
10:01:27	Aircraft	Jet				***	2nd jet, 1st fadad
10:03:48	Natural	***	***	***	***	Animal	gull
10:04:22	Natural	***	***	***	***	Wind/Fol	wind blowing through scrub w/bird activity
10:06:46	Natural	***	***	***	***	Wind/Fol	localized wind is in ear
10:07:21	Aircraft	Jet	***	***		***	distant wind is blowing through hills and scrub
10:09:50	Natural	***	***	***	***	Wind/Fol	distant wind is like a swirling white noise
10:10:52	Aircraft	Prop				***	w/lots of gulls
10:15:17	Aircraft	Jet				***	prop gone, jet distant
10:18:27	Natural	***	***	***	***	Wind/Fol	
10:22:03	Aircraft	Jet				***	
15:02:20	Aircraft	Prop				***	
15:04:23	Natural	***	***	***	***	Wind/Fol	winds slightly calmer
15:07:02	Natural	***	***	***	***	Wind/Fol	winds pick up again
15:11:53	Natural	***	***	***	***	Animal	loud birds
15:12:14	Natural	***	***	***	***	Wind/Fol	
15:16:33	Aircraft	Prop				***	
15:18:10	Natural	***	***	***	***	Wind/Fol	
15:21:49	Aircraft	Jet				***	
15:23:12	Natural	***	***	***	***	Wind/Fol	
15:25:28	Human	***	***	***	***	Vehicle	boat in estero/bay
15:26:06	Natural	***	***	***	***	Wind/Fol	
15:28:04	Human	***	***	***	***	Vehicle	boat in bay occasionally audible when no wind
15:28:32	Natural	***	***	***	***	Wind/Fol	
15:31:22	Human	***	***	***	***	Vehicle	small motor boat in bay
15:34:01	Aircraft	Prop				***	faint
15:35:46	Natural	***	***	***	***	Wind/Fol	w/gulls
15:42:24	Human	***	***	***	***	Vehicle	small motor boat, low throttle
15:46:30	Human	***	***	***	***	Vehicle	boat across bay, not very loud
15:51:40	Human	***	***	***	***	Vehicle	increased throttle, moving out of area
15:56:24	Human	***	***	***	***	Vehicle	
15:57:05	Natural	***	***	***	***	Wind/Fol	

"loud birds"

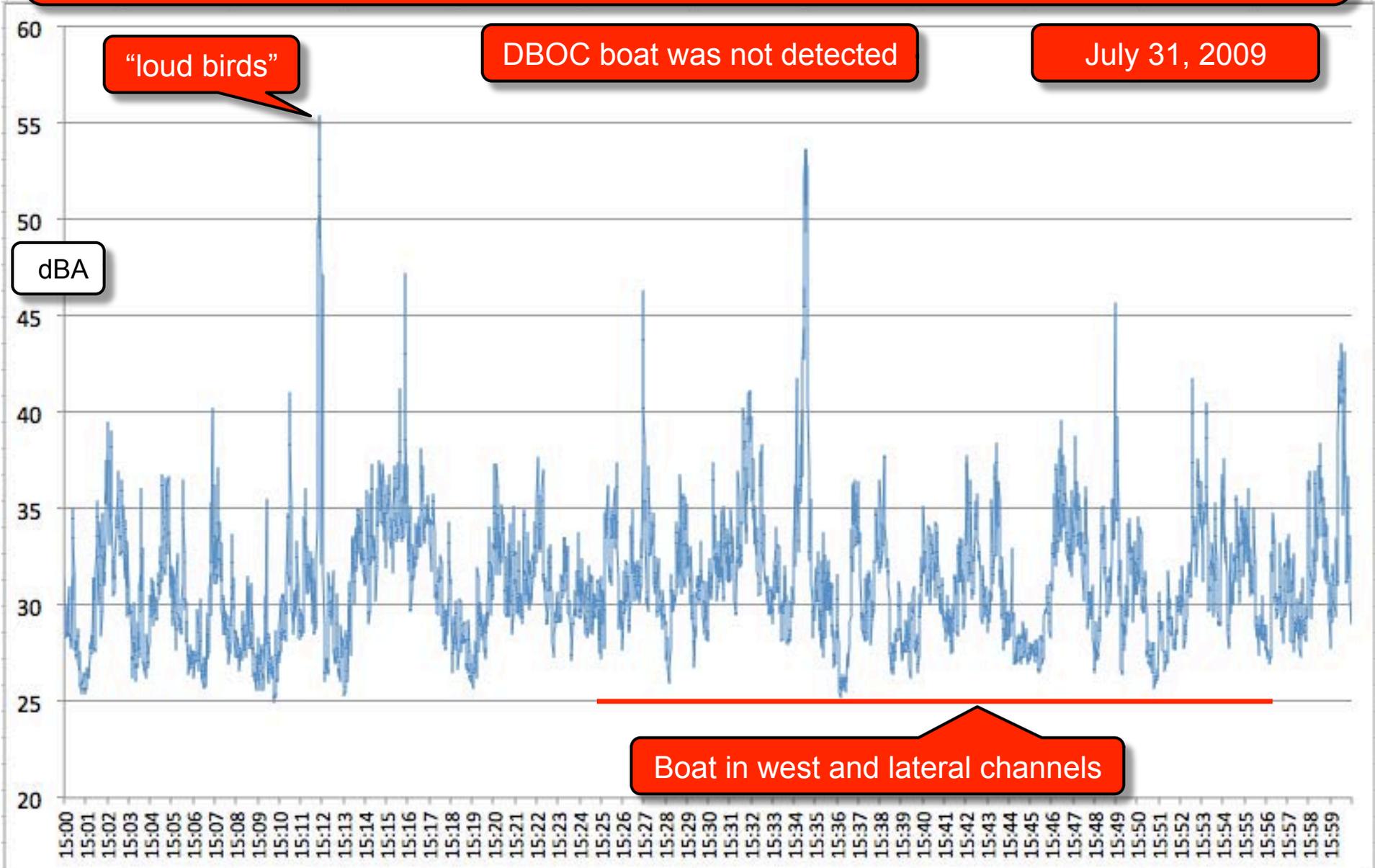
boat

boat

Analysis of DBOC boat in the lateral channel on July 31, 2009 at 3:25 pm



PORE 004 recording between 3:00 pm and 4:00 pm on July 31, 2009 did not record DBOC boat in lateral channel as identified in FAA observer log



PORE 004 recording between 3:00 pm and 4:00 pm on July 31, 2009 did not record DBOC boat in lateral channel as identified in FAA observer log

