

HICEAS 2002

RECORD

Acoustics

SONOBUOY LOG

DST

7530-00-222-3525  
FEDERAL SUPPLY SERVICE  
(GPO)

HICEAS 2002  
SonoBuoys  
D.S.T.

Sono-h buoy # (53A,57B)	Type	Chan#	Depth Setting	Date	Time	Tape#	Sight#	Species	Lat Deg.	N	Long Min. N	Long Deg.	E Water? (Y,N,?)	Ship? (Y,N,?)	Cetac? (Y,N,?)
1 53A	29	100m	8-24-02	0640	SB1	145	B.EDENI	27	40.02	N	173	13.29	Y	Y	N
2 53A	29	100m	8-29-02	1448	SB2	147	B.EDENI	27	58.33	N	174	26.07	Y	Y	N
3	DTED	/N	J3	INCIDENT											
4 53A	29	100m	9-1-02	1840	-	158	B.EDENI	31	32.8	N	174	15.38	Y	N	N
5 53A	29	100m	9-1-02	1845	-	159	B.EDENI	31	32.8	N	174	15.24	Y	N	N
6 53A	29	100m	9-10-02	0144	-	160	B.EDENI	36	1.01	N	178	10.84	Y	Y	N
7 53A	29	100m	9-10-02	0145	SB3	166	B.EDENI	28	1.01	N	178	10.84	Y	Y	N
8 53A	29	100m	9-12-02	1613	SB5	169	B.EDENI	25	56.00	N	177	47.35	Y	Y	Y
9 53A	29	100m	9-21-02	0720	SB6	181	B.EDENI	28	52.87	N	175	30.88	Y	Y	N
10 53A	29	100m	9-21-02	0805	-	181	B.EDENI	28	52.87	N	175	30.28	Y	Y	N
11 53A	29	100m	9-24-02	2158	-	185	B.EDENI <sup>105</sup>	27	01.80	N	167	37.85	Y	Y	N
12 53A	29	100m	9-24-02	2152	-	197	B.EDENI	24	44.92	N	157	46.34	Y	Y	N
13 53A	29	100m	10-10-02	0910	-	197	B.EDENI	25	34.11	N	157	46.54	Y	Y	N
14 53A	29	100m	10-16-02	0645	-	212	B.EDENI	25	34.11	N	157	50.37	Y	Y	N
15 53A	29	100m	10-16-02	0855	-	212	B.EDENI	25	34.11	N	157	50.37	Y	Y	N
16 53A	29	100m	10-16-02	0901	-	212	B.EDENI	25	34.11	N	157	50.37	Y	Y	N
17 53A	29	100m	10-16-02	0920	SB7	212	B.EDENI	25	34.11	N	157	50.37	Y	Y	N
18				1017-02	1749	214	B.EDENI	340	31.1	N	170	57.1	Y	Y	N
19				11-07-02	1812	2150	B.EDENI	230	14.28	N	174	46.74	Y	Y	N
20				11-08-02	1510	2011	B.EDENI	22	27.63	N	171	45.90	Y	Y	N
21				11-08-02	1515	2011	B.EDENI	22	27.63	N	171	45.90	Y	Y	N
22	53A	29	11-20-02	1432	SB13	284	B.EDENI	21	85.32	N	156	00.57	Y	Y	Y
23	53A	29	11-22-02	1046	SB14	287	B.EDENI	19	80.50	N	157.10	10.49	Y	Y	Y
24															
25															
26															
27															
28															
29															
30															
31															
32															
33															
34															
35															
36	53A	29	9-17-02	0011	SB6	177	B.EDENI	27	67.91	N	170	50.13	Y	Y	Y

\*EXAMPLE\*

Sighting Number , Species

S# 458.musay

Date, Time

7/1/02, 1212

Lat/Long

45°12.2, 130°10.1

Sonobuoy DAT TYPE Number

HICAS  
SB2

Sonobuoy TYPE, CHANNEL

53B, ch 40

Example of  
how to fill  
out pages

- \* Do not forget Lat/long
- \* Only write on rt side of book
- \* Leave extra pages at end of narrative
- \* Note if/when monitored. If not monitored, leave extra pages

TIME

[REDACTED]  
1212

1230

1240

1242

1250

1310

INFO

[REDACTED]

Buoy deployed - good signal  
Animals 500m off port beam  
Ship heading 030 (magnetic)

No sounds yet, whales resighted  
1/2 nmi from buoy (about 040 N buoy)  
Ship heading still 030

A-B call!?  
Upsweep?

No calls recently, signal fading  
Ship still moving 030

Reception gone, but will still record to end

↳ Animals appeared to be feeding, no biopsies or photos, 2 animals seen swimming/diving close to each other

8/29

291539g2, medium length/2

EMIT, 260J

small tail

medium tall young male

131539g1, 294T young male

(0655 new sighting S#116  
Animals(s) @ 180°, 0.8 nmi from ship)

EMIT  
DIF

①

S#145 Brydes whale

NO VOCALS

8/29/02 0640

27 40.09 N 173 13.29 W

HICEAS SB 1

SB 1, ch 29

HICEAS SB 1

SB 1

0640 buoy deployed - good signal

0700 strange pulses ~00.20.00 on tape

- LF pulses since tossed buoy

- not monitoring buoy consistently

0723 buoy is 'bad' now

- Don't know if it was bad the whole time → check

1315 DAT TIME - losing reception, comes & goes

\* how far was buoy from animal → check dates observed

8/29

(2)

S#147 B.edeni

No Vocals

27 58.33N 174 26.07W

8/29/02 at 1448

HICETS SB2

53B, ch 29

SB2

↙

YES!!  
BIOPSY ON SINGEL!  
MINI-MAC!!

\* Individual whale feeding - swimming slowly w/ shallow dives in a tight location. It pooped, & its' poop was as big as it was!!

\* Got a biopsy off this animal

\* Also, I was recording from bow HP as we approached whale from DSJ for a biopsy. First attempt (crossbow & gun) missed animal (one short, one long). Second attempt in crossbow hit animal. Less than a minute later rifle fired on deck (loud!). Should provide a reference point on bow HP for biopsy hit.

\* Not much action on the EK500, but flying bridge did see a "cool" school of fish around the area.

\* I also have a wee bit of video on this guy *There are excellent photo's now*

1448 Buoy dropped (also, have bow HP recordings)  
Good buoy

1454 - whale @ 400m off port beam → great SB @ 400m off starboard beam  
(occasional cut-offs due to big radio usage on bridge - we are still retrieving bolts, so ship noise is bad)

1459 Whale @ 400m @ 065R } still picking  
sonobuoy @ 300m @ 060L } up bolts  
(ship still very close, retrieving bolts)

1505 ↑ engine noise (see whaltrak files,  
will hit "turn" for more CPS update)

1508 - PAL engine noise due to turning

1514 Whale is up 30R, 600m off starboard  
SB is 300m off port beam

1523 (~36:40 on DAT) - check for ~58 Hz pulsing - I'm pretty sure it's engine noise for 75 Hz pulsing

S#147, con't  
B. Edeni

1524-31:50ish LF Down sweep ~55Hz → 10 or so?  
very short (<1/2 sec) (or puln?)

1525 (31:45) Heading back to course & speed now  
loud engine noise

1526 - 400m off bow - whale location (or all turning)  
400m off port beam

↳ whale really isn't moving at all, so  
it should remain close to the buoys

1529 42:42ish - pulsing? engine cavitation?  
we are trying one last pass on the bolts

1530 - Now CS - All bolts retrieved

(not monitoring, putting out array)

1545 - Rft Ch 2-3 bars (still not monitoring)

Lft Ch 1-2 bars

1549 - looks like SB is starting to cut at (~3n mi)

1555 1:09:05 possible down sweep <50Hz?  
It is starting to cut out now, so I'm not sure  
(down to 1 bar each)

1557 (1:11:28) buoy is now ~4n mi behind us  
and I think it is pretty much dead  
Stop Monitoring, but will continue to record

basic  
monitoring  
again ↓

S#158 Brydes Whales  
Calf/calf

2 broys passed < ch 29  
< 1000m

both D.O.A.

(3)

9-10-02

SF 166 Bryde's Whale

28° 1.01 N

178° 10.84 W

SB 166

sonobuoy tape #3

SB 3,4 CH29

Notes: moved near whales & deployed A buoy - 1<sup>st</sup> failed so dropped a 2<sup>nd</sup> a few min later. Not sure how close whales were when the 2<sup>nd</sup> buoy deployed. Heard some LF sounds and then the same mid-freq. sounds - like a bird chirp or "coo"

1914 Buoy tossed, Start recording  
→ First buoy bad

1918 2<sup>nd</sup> Buoy tossed - Good buoy

1920 Good audio signs!

1928 Possible LF moans ~ 100-200 Hz

19:34 Speeding up & moving 1/2 mile away

19:38 Coming to stop

19:40 Good audio still

19:50 Hearing an <sup>mid freq.</sup> R/F song - not the same as

20:00 Still hearing a repetitive R/F chirp ~ 530 Hz

20:15 Some LF noise from ship machinery (winch?) running winch ↑

20:17 Still hearing chirp - CTD cast is now being deployed : sporadic LF noise

20:20 Still recording but stopped monitoring

20:50 Checked signal - still good

21:19 End Recording

21:23 Begin Recording SB 4 → Sperm Whales?  
or??

\* Need to re-check  
This tape for B. Edeni  
vocals

→ sounds from other  
biologicals detected  
(unknown source)

9-12

41

SB5

S# 169 B. edeni

LAT/LONG: 25 56.00 129 47.35

DATE/TIME: 9-12-02 @ 1613

DAT TAPE#/channel: Ch29 SB DAT 5

1613 buoy tored - good buoy

(dropped w/in 1/2 to 1 min of whale)

(622 (09:55ish) <sup>DAT</sup> Fasca ~~autime~~ - possible 40Hz down sweep?

1623 - turning 20L, coming down to HS (increase Noise)

1627 - Resighting - animal now at 10L, 3.5 ret  
(ship heading ~215)

1630 - Jordan heading back to course &amp; speed

1630 (stop monitoring here) - or, half-monitoring

1638 (26:50) <sup>DAT</sup> possible faint LF down sweep? I may be making  
this up

→ ship heading 078 (after course &amp; speed)

88 1640 28:20 40 Hz sound? - There aren't super-low

1657 - down to 2-3 bars, starting to lose reception

★ Possible Vocals, ★  
but probably not  
from the sighted  
animal

S# 177

B. edeni

⑤

9/17

SB6

S# 177 B edeni Mom/calf

Date : 9-17-02 10:11

DAT TAPE # / channel SB DAT TAPE # 6

27° 52.54 N , 178° 50.43 E

10:17 Start Recording - Going back to course. Speed  
Ship going back to CS @ 290°

11:00 END Recording / DAT TIME 43:36

⑧ Note A group of 2 M. densirostris was  
sighted nearly about 20 min later

NOTHING HRACN/Sew or spectrograms 9/17 TW

~9/17 Re-checked -

09.50 Tascam Time - possible LF down sweep?

\ 25 Hz  
11 Hz 0.2 sec

(not quite a pulse) - faint, likely  
not from our hydrophone, anyhow

(⑩)

10.38 another faint LF down sweep (short)

11.30 another

0.16.59 - Signal starting to go out

25

0.18.00ish - faint lf upsweeps?  
0.19.33 - Going out alone  
Stop monitoring now

(No vocals)

At least from  
These guys

S# 181 B-edeni

Lat/Long:  $28^{\circ} 52.87' N$   $175^{\circ} 30.28' W$

Date/Time: 9-21-02 @ 0735

DAT Tape#/Channel: Ch 29

0734 Tossed buoy - animals sighted a few  
min before ~200m off port beam  
Buoy bad? - No signal

0737 Turn 180° towards animals

0805 tossed another SB  
after biopsy - animal seen ~200m  
off starboard beam

2 BAD  
BOUYS

S# : 197 *B.edeni*

Lat/Long :  $24^{\circ}44.42'N$   $157^{\circ}46.54'W$ .

Date/Time: 10-10-02

Ch#/SB Tape#: Ch 29 no tape

0812 Buoy deployed 40R, 0.5nmi, very close to  
from small boat at least one whale

0818 2<sup>nd</sup> buoy deployed from ship  
→ no good?

BAD BOUGS (2)

⑥

S# 212 B.edeai  
Lat/Long  $25^{\circ}34.11'N$   $174^{\circ}30.37'W$   
Date / Time 10/16/02 ; 0920  
Ch#/SB Tape# Ch 29 SB 9

0845 buoy tossed - Ch 29, 90ft, 4hrs - BAP BUOY  
25° 33.30 N 174° 33.10 W

0855 2<sup>nd</sup> buoy tossed - Ch29 50ft, 4hrs - BAD  
25°32.4'N 174°33.0'W

0900 3rd buoy - Ch 29 90ft, 4hrs - BAD  
25 32.38N | 174 32.77W

0920 4<sup>th</sup> buoy Ch 29 90ft Plus ??  
25° 34.11N, 174° 30.37W  
→ Good Buoy

S#262

MONITOR SBT on 10-18-02 (8R)

DAT TIME

4m 45 - 35Hz w/downsweep to 28Hz, 0.6 sec duration

11m 20 - 37-29Hz downswing, 0.7 sec duration

12m 58 - centered @ 34Hz, 0.5 sec

15m 01 - centered @ 33Hz

15m 46 - centered @ 36Hz; 0.5 sec

16m 37 - upsweep 57Hz → 69Hz; 2.5 sec

17m 27 - pulse @ 30-40Hz (0.7sec); 21Hz (1.5sec)

18m 23 - pulse @ 29-41Hz (0.7sec); 21Hz (1.5sec)

18m 27 - pulse @ 33Hz (0.5sec)

19m 13 - downswing 40Hz → 26Hz (0.6sec); 22Hz (1.2sec)

20m 43 - down 40-27Hz (0.6sec); 22Hz (1.4sec)

21m 27s - pulse ~ 34Hz (0.5sec)

21m 50s - pulse ~ 34Hz (0.5sec)

22m 30s - pulse? downswing? ~34Hz w/22Hz

22m 47s - 38 → 24 dn; 22Hz

23m 53 - 34Hz pulse

24m 20 - 36Hz pulse down to 21Hz

24m 35 - 34Hz

24m 38 - 34Hz

24m 51 - 34Hz

25m 05 - 39-27Hz dn (0.6); 22Hz (1.7sec)

25m 13 - 35Hz pulse

25m 16 - 32-22dn; 22Hz

25m 32 - 34Hz

(More noise - There are more vocals, but poor SNR)

Stop Monitor @ 32.0D

S#212 B. edeni

32.00 begin monitor again

32 m 59sec = pulse 34Hz, 0.5sec

34m 03 = faint

34 m 12 = 34Hz (0.5sec), 21Hz (1.5sec)

35m 57 = 35Hz

36m 38 = 34Hz, 22Hz

40m 32 = 34Hz

40m 42 = 34Hz

41m 38 = 34Hz

42 56 > 40Hz (downsweep? Noise?)

43 02 = 34Hz

43 07 = 34Hz, 22Hz ?? or noise?

44m 24 = some 40Hz stuff?

45 36 > 40Hz downsweep?

46 52 = 34Hz, 22Hz faint?

47 27 = 40Hz

48 49 = 29Hz, 0.7sec

\*\* 52m 18sec > 34Hz → 21Hz downsweep, 0.8sec

54 48 = 34Hz

55 42 = 34Hz, 21Hz

59 25 = 41Hz, 22Hz faint

1hr - stop monitoring

1.00.38 - 34 Hz

ship noise increase, but some more 34 Hz pulses

1.03.30 = 34 Hz / 22 Hz

1.04.03 = \ 38 Hz / 22 Hz ; followed by 35-22 Hz down sweep

1.04.48 \ 35-23 Hz down sweep

1.05.26 - noise a?!

1.05.58 =

1.06.78 \ 38-20 Hz down sweep; 22 Hz

1.06.33 \ down sweep, 22 Hz (more faint)

1.07.12 \ faint

1.08.34 =

1.09.07 \ down sweep 36-23 Hz

1.09.33 \ down sweep 36-21 Hz (and pulse!) 34 Hz

1.09.07 - several LF sounds - noise or animals?

1.10.29 - - 21 Hz

1.10.38 = 34 Hz / 22 Hz

1.10.48 - 22 Hz

[1.11.08 - Recep7n Gone Bad]

→ Ratt of SBDAT 7 is BAD RECEPTION

Time buoy deployed  
Time recording started

2052 eot  
2054

S# 224 Brydes

Lat / Long  $24^{\circ} 39.8$

Date / Time 10/17 1849

Ch# / SB Tape# SB8, SB9 Ch29

⑦

$24^{\circ} 39.8$   $170^{\circ} 57.4$  [  $24^{\circ} 6' 6.10$   $-170^{\circ} 9' 58.6$  ]

(8)

S# 2165

B. Physalus

Lat/Long

23°19.38N 174°46.74W

Date/Time 11-07-02

Ch#/SB Tape# Ch 29 SB DAT 10

S# B. Physalus

2 Fin Whales, They were  
done song loops before  
we biopsied, it looked as  
if they were feeding.

Appeared to be 2 adults

0802 START DAT (early - buoy not in) [301]

0815 sonobuoys in - looks like a good buoy  
(too noisy for ship noise)

Buoy dropped w/in 50m of Whales  
we are now 1nm away, heading 138°

0831

0832 whale resurfaced 140L, 3.5 sec

0833 ← TIME CHECK → 31.15 DAT

0841 + No Vocals yet

0842 losing Reception - comes & goes (0.39.30)  
buoy now almost 3nm away  
(2-3 bars on receives)

0848 SB Dead 0.45.40 - DAT TIME  
no more reception

NO VOCALS

\* sometimes I think I see LF  
sounds ~10Hz, but I think it  
is wishful thinking

(9)

S# 275 *B. borealis*

Lat/Long 22° 27.63N 171° 45.96W

Date/Time 11-08-02 1515

Ch#/SB Tape# ch29 SB Dat 11

(1st buoy: BAD!!

S#275 Sei

3 Animals swimming in  
close association w/ each other - All  
appear to be adults

\*There are also low recordings  
(have not been monitored ~~yet~~  
in real time)

1515 0.04.21 (OAT TIME) Buoy, N, Good

1520 Sonobuoy now @ 150R, 12ret  
25 R, 10ret (3 whales)

1523 Heading 190, turning 30L

1530 0.18.02 possible sounds @ 65 Hz? or boat noise?  
(buoy is now 1nm behind us, our heading is  
167 magnetic (?)-from Whaltrak)

↳ whale is 0°, 3½ ret  
so buoy is ~2nm from whales

However The ship is "inline" w/ buoy & whales  
may be difficult for dist!

1534 There is also a LARGE ship  
at 124R, 0.4 ret

1538 More noise in 40-60 Hz range - possibly  
from big ship?

(P)

1538 1539 1540  
1538 1539 1540  
1538 1539 1540

1538 1539 1540

1538 1539 1540

1538 1539 1540

1538 1539 1540

1538 1539 1540

1538 1539 1540

1538 1539 1540

1539/1540 → Check low HP ~ 0.14.00-ish

I heard a squeal

Whales ~ 1nm ahead of us - ~~at~~ S-10L<sup>?</sup>  
→ No other cetacean since 10am

1542 Sonobuoy is now ~ 1/3 nm behind us, Whale  
is ~ 1 nm ahead of us - still ok  
reception. May want to re-monitor P  
higher frequencies

1545 ~~at~~ 73 Hz sound? (on heading is 169)

1546 Turning 180° to pick up bolt

1547 5-10 Hz sound (has been some?)

1548 BAD RECEPTION NOW, BUT WE ARE TURNING  
only for a minute or so

1551 BAD RECEPTION ~ 1 min  
Now heading is 317

1553 → 6.41.25? ✓ LF Pulsing? Imagination? Ship

1555 20R - STOP MONITORING FOR  
A WHILE

1557 Sonobuoy at 20° 1.7 ret

1608

SHIP AT  
SONOBUOY AT

(0.57.00)

1611 Lord Ship noise - we are close  
to buoy cones (goes -only  
-order semi-monitoring now -

1612 Ship @ 150L, 0.2 ret (1.00.58)

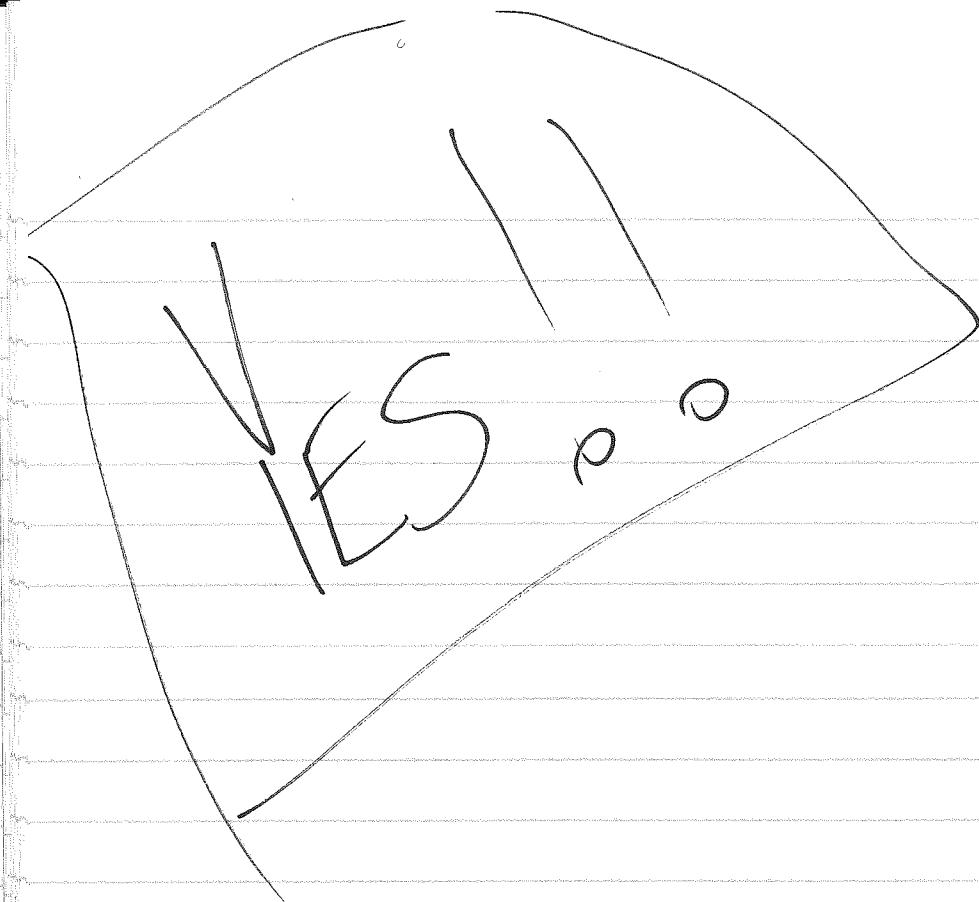
Whales were last seen moving

on away fast  
Sonobuoy not resighted, probable behind  
us now ~ 1 1/3 nmi  
Our heading is 156°  
<sup>heading</sup> 89°

1627 Heading to CS (89°)  
Stop monitoring now - will keep recording

(10)

St# 284 Sei Whale  
Lat/Long 21° 25.32' N 156° 00.57' W  
Date/Time 11-20-02 K32  
Ch#/SB Tape# 29 SB12



- 1632 Begin recording, buoy dropped  
~100m from whale (whale was off  
starboard)
- 1633 FS, 180R VOCALS!?!?  
500m off starbd str (we are turning  
300m)
- 1636 whale 100m from buoy
- 1639 heading 200° 0.06.43  
we are right next to sonobuoy  
90L turn
- 1640 animal 50 m off port beam 0.34. 0.07.34  
HS - 90L
- 1641 100 m off port beam whale, buoy is 300m  
behind v.s.
- 1644 Animals 100-200m from buoy 0.12.26  
Our heading  $135^\circ \rightarrow 120^\circ$
- 1650 still turning left animal is off port beam
- 1653 our heading  $116^\circ$  - launching small boat  
 $114^\circ$
- 1657 our heading  $153^\circ$  (0.24.40)  
personnel transfer to small boat

91

(657) (0.25.07) whale 30m off stbd beam  
*I think bow is 90L?? 1nm ??*  
 (17L, 0.8nm) buoy?

(701) whale 50m off stbd beam  
 we are turning right 180°  
 steady up here (0.28.56)

1707 ~~we are still turning~~ we are still turning

1710 0.37.37  
 whale 400m 10R (& J2!)  
 sonobuoy 070° 1.3nm  
 heading 310°

(715) heading 314° (0.43.22)  
 (716) turn 90L (0.44.30)

at least 3 whales  
 200m off port beam  
 350m, 90L w/ J2 <3 animals>

1723 100m off bow (0.50.00)  
 200m - 300m  
 400m @ 10R  
 → can check w/ bow hp?

1726 turn 30R (0.53.30) 1  
 1726 sonobuoy@ 17R 1.9nm (0.56.20)  
 all 3 whales between us & J2 (???)  
 off stbd bow 100 - 200m

1734 on heading 244° (1.01.50)

buoy is kinda behind us

1735 turning now to get out of trash

1736 1.03.39 losing reception for turn  
(still 3-4 bars when not turning)

1739 coming up to FS

1742 312° heading

1746 reception dying

1749 J2 getting picked up now

on Heading ~ 325° @ 6.3 knots

1753 heading now 112°

still retrieving J2?

1813 Animals are off our starbd for a few miles - at least 5 animals ("They seem to want to stay in that area" - BOP.)

swell is 110° now, we are 128°

animals are (?) ~ 130° from us (or, from swell)  
maybe ~ 240° are animals?

1835 ERT SB12 ; BRT SB13  
Getting near buoy for station

1837 100% detection  
no sonobuoy heard in 10 sec.  
heading 081°, 155° 58.96W  
not enough signal with 10 sec. delay  
but still detectable. 10 sec. delay  
is good for whale detection

1838 100% detection  
no sonobuoy heard in 10 sec.

1838 SB13 BOT-ish → we are moving toward s  
sonobuoy for station tonite. we will (hopefully)  
be on the opposite side of the buoy than where  
the whales were last detected. Buoy is  
now 2nm off Port ~~ft~~<sup>beam</sup>, whales maybe  
2 1/2-3nm off port aft. Our heading is now 084°  
1845 Neare Stopping now for station  
2-3 bars on sonobuoy  
location:  $21^{\circ} 23.50' N$   
 $155^{\circ} 59.68' W$

1910 - sonobuoy reception going in / out  
we are on station, our heading is  $\sim 169^{\circ}$   
2-3 bars reception

1911 100% detection  
no sonobuoy heard in 10 sec.  
heading 081°, 155° 58.96W

1912 100% detection  
no sonobuoy heard in 10 sec.  
heading 081°, 155° 58.96W

1913 100% detection  
no sonobuoy heard in 10 sec.  
heading 081°, 155° 58.96W

1951 Sonobuoy is kinda dead  
(comes & goes)

1959 end whaltrk, there is another one

2038 eth SB13 eot we are now  
at  $21^{\circ} 23.63' N$ ,  $155^{\circ} 58.96' W$   
and heading 081°

2041 bot SB14 - mostly bad, bot will  
delete it  
→ nope, it's bad intermittend  
w/ all done w/ station  
& cruising away. Reception died

HICAS 2002 DAT SB 12

80T → calls too faint to measure

0.03.43 HF CALL

0.03.47 2<sup>nd</sup> HF CALL

↓ (so far all LF calls too faint to measure)

~0.10.00ish - LF Dn, but too faint to measure (maybe ok for far

0.19.00ish ok, a little better, will start

(11)

St# 287 Sei Whales  
Lat/Long  $19^{\circ} 20.52'N$ ;  $154^{\circ} 10.48'W$   
Date/Time 11-22-02, 1046  
Ch# /SB Tape# Ch 29, SB14

1046 Start SB14

Turn 180

~1050 buoy launched

Turn 180 R

1053 turned  $160^{\circ}$  off stbd gtr nor (we are turning)

1100  $19^{\circ} 20.15'N$   $154^{\circ} 10.43'W$  > ship location

sonobuoy 50R, 400m

J2 & several whales w/in 100m of buoy

another whale 30R, 70m

on heading now 280 after finish NNE

(0.15.00)

1102 40R, 300m - a whale

(noisy for ship - very close)

1110 (023.57) we are still heading 280° away from  
buoy to decrease ship noise

1112 turn 180° Then down to 3 knots or so

1113 one whale at 20R, 3.5-4.0 ret

sonobuoy at 4 ret 30R most of

J2 at 2.5 ret, 13R (whales near J2)

ship at  $19:20.68'N$ ,  $154:11.42'W$   
(031.58)

1127 sonobuoy, Whales ~ 40R, 7net

J2 ~ 40R, 15net

otherwhales ~ 45R, 7net

1136 (6.49.57) Some faint 40Hz downsweps now

1141 Ship is close to sonobuoy - it is LOUD!  
3 biopsies on these animals

1144 0.57.58 ship picking up speed (was @ 1.5  
knots) - heading  $85^{\circ}$

1146 (0. 1.00.00)  
sonobuoy ~ 90R 12nm  
on map there is  
glare, can't  
see it

1149 Reception better again (1.03.00)  
our heading:  $086^{\circ}$

Coming Back to Course & Speed

Seeing faint Downsweps ~ 40Hz

1153 We are angling back to CS  
we are now at  $118^{\circ}$ , buoy is somewhere  
around  $140^{\circ}$  off starboard abt 1nm

1159 Buoy down  
Passed another seithale 90R, 0.3nm from SJ  
our heading is  $118^{\circ}$