

# NOAA Technical Memorandum NMFS



MAY 1994

**REPORT ON CETACEAN SIGHTINGS DURING A  
MARINE MAMMAL SURVEY IN THE  
EASTERN TROPICAL PACIFIC OCEAN ABOARD THE  
NOAA SHIPS *McARTHUR* AND *DAVID STARR JORDAN*  
JULY 28 - NOVEMBER 2, 1992**

Karl F. Mangels  
Tim Gerrodette

NOAA-TM-NMFS-SWFSC-200

U.S. DEPARTMENT OF COMMERCE  
National Oceanic and Atmospheric Administration  
National Marine Fisheries Service  
Southwest Fisheries Science Center

## NOAA Technical Memorandum NMFS

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INTRODUCTION

The National Marine Fisheries Service (NMFS) was mandated by the 1984 amendment to the Marine Mammal Protection Act to monitor trends in the abundance of dolphins in the eastern tropical Pacific (ETP). Over the past decade the Southwest Fisheries Science Center (SWFSC) has been conducting a variety of marine mammal surveys in the ETP and other areas of the Pacific Ocean. The purpose of these surveys has been to estimate the population sizes of cetacean species and monitor the impact of the commercial fisheries which incidentally kill dolphins. The 1992 survey was designed to make abundance estimates of the central stock of common dolphin, *Delphinus delphis*. This stock of dolphin is taken in the tropical tuna fishery and has suffered a substantial decline (Anganuzzi et al. 1992). Previous surveys covering larger areas have permitted estimates of abundance, but with low precision (Wade and Gerrodette 1993).

The 1992 survey was conducted by the NOAA Ships McARTHUR and DAVID STARR JORDAN. Ninety sea days were scheduled and completed for marine mammal observation operations by both ships. The cruise title was Population of Delphinus Stocks or PODS 92, with cruise numbers for each ship as follows:

McARTHUR	AR-92-04	SWFSC Cruise Number 1467
DAVID STARR JORDAN	DS-92-08	SWFSC Cruise Number 1468

In this report, we describe the experimental procedures and summarize the marine mammal sightings made during the survey. A separate report has been published by Philbrick et al. (NOAA-TM-NMFS-SWFSC-180) which describes the oceanographic and other biological studies completed during this survey.

## SURVEY OBJECTIVES

The primary objective of the cruise was to survey the area inhabited by the central stock of common dolphins, and to make an estimate of its absolute abundance in order to assess the impact of the dolphins killed by the U.S. and international yellowfin tuna fleet in the ETP. The specific objectives were:

1. to collect data for estimating the density, size, and species composition of dolphin and whale aggregations in order to make estimates of their population sizes;
2. to collect physical, biological and oceanographic data regarding the habitat of marine mammals in order to better understand cetacean distribution patterns;

A variety of other studies, including aerial photogrammetry, genetic sampling and photo-identification of individual whales, was carried out on the cruise, but the results of these other studies are not covered in this report.

## MATERIALS AND METHODS

### Study Area and Tracklines

Initial discussions considered surveys covering the range of both the northern and central stocks of common dolphins. However, given the number of sea days and expected sighting rates for common dolphins based on previous cruises, it was determined that the coefficients of variation (CV's) of the abundance estimates would be too high. A survey covering most of the area of the central common dolphin stock was expected to result in about 75 on-effort sightings and an abundance estimate with a CV less than 0.3. Based on past common dolphin sightings from both tuna boats and research vessels, a study area of 670,102 nm<sup>2</sup> west of Central America was chosen (Figure 5). Table 2 lists the boundary points of the study area. The study area includes the majority of central common dolphins, but the range extends westward beyond the area covered in this survey, (Perrin et al. 1985, Wade and Gerrodette 1993).

A systematic grid survey was conducted. Primary tracklines were laid out on a northeast/southwest diagonal, approximately 85 nm apart and were charted at 045°/225° T. Secondary tracklines were laid out on a southeast/northwest diagonal, approximately 170 nm apart and were charted at 135°/315° T. The NE/SW grid was to be completed first, followed by as much of the SE/NW grid as weather and other contingencies permitted. Observations were also conducted as the ships transitted through jurisdictional waters of Mexico to the study area.



## Itinerary

The survey was conducted from July 28 through November 2, 1992. The cruise was broken into three 30 day legs with five day inports between each leg. Scheduled port calls were San Diego, California; Puerto Quetzal, Guatemala; and Rodman, Panama. The itinerary is listed below with the arrival and departure dates.

<u>LEG 1:</u>	<u>McARTHUR</u>	<u>DAVID STARR JORDAN</u>
28 JUL	DEP San Diego, CA	San Diego, CA
26 AUG	ARR Puerto Quetzal, Guat.	Puerto Quetzal, Guat.
<u>LEG 2:</u>		
31 AUG	DEP Puerto Quetzal, Guat.	Puerto Quetzal, Guat.
08 SEP	ARR	Puntarenas, Costa Rica <sup>1</sup>
09 SEP	DEP	Puntarenas, Costa Rica <sup>1</sup>
17 SEP	A/D I. del Coco, Costa Rica	
20 SEP	A/D	I. Del Coco, Costa Rica
29 SEP	ARR Rodman, Panama	Rodman, Panama
<u>LEG 3:</u>		
04 OCT	DEP Rodman, Panama	Rodman, Panama
09 OCT	A/D	I. de Malpelo, Colombia
13 OCT	A/D Puerto Caldera, Costa Rica <sup>2</sup>	
02 NOV	ARR Rodman, Panama	San Diego, CA

<sup>1</sup> Port Call for medical emergency

<sup>2</sup> Port Call for personnel debarkation

### Scientific Personnel

The scientific complements consisted of 15 scientists aboard DAVID STARR JORDAN and 9 or 10 scientists aboard McARTHUR. The observer teams changed ships to allow observers to be calibrated with the photogrammetric work conducted aboard DAVID STARR JORDAN. Personnel are assigned to SWFSC unless otherwise noted.

Legs	Title	D.S. JORDAN	McARTHUR
1	<u>CRUISE LEADERS</u>	Dr. Tim Gerrodette	Dr. Paul Fiedler
2		LTJG Karl Mangels	Mark Lowry
3		Dr. Barbara Taylor	Dr. Jay Barlow
1-2	<u>I.D. SPECIALISTS</u>	Jim Cotton	Scott Benson
1-2		Richard Rowlett	Brian Smith
3		Scott Benson	Jim Cotton
3		Brian Smith	Richard Rowlett
1-2	<u>M.M. OBSERVERS</u>	Terry Farley	Doug Kinzey
1-2		Liz Mitchell	Paula Olson
1-2		Mary Lycan	Jennifer Quan
1-2		Scott Miller	Julie Rivers

3	Doug Kinzey	Terry Farley
3	Paula Olson	Liz Mitchell
3	Jennifer Quan	Mary Lycan
3	Julie Rivers	Scott Miller
1-3	<u>OCEANOGRAPHERS</u>	Valerie Philbrick
1		Richard LeDuc
2		Robert Holland
3		Joyce Sisson
1-3	<u>BIRD OBSERVERS</u>	Robert Pitman
1-3		Michael Force, UBC
1-2	<u>PHOTOGRAMMETRISTS</u>	Robin Westlake
1,3		Morgan Lynn
2		Jim Gilpatrick
3		Carrie LeDuc
1-3	<u>HELICOPTER MECHANIC</u>	Ron Helgeson, AOC
1-2	<u>HELICOPTER PILOT</u>	LT Steve Pape, AOC
3		Dave Gardner, AOC
2-3	<u>GUEST SCIENTISTS</u>	Renate Sponer, UVA
2		John Nicolas, NEFSC
3		Kevin Bentler, IATTC
1	<u>MEXICAN OBSERVERS</u>	Susanna Mungaray,
1		- DGPM
1		Pedro Ulloa Ramirez,
		- SEPESCA
		Jose Luis Aguilar,
		- SEDESOL

NEFSC: Northeast Fisheries Science Center  
 IATTC: Inter-American Tropical Tuna Commission  
 UBC: University of British Columbia, Canada  
 AOC: Aircraft Operations Center, NOAA  
 UVA: University of Vienna, Austria  
 DGPM: Dirección General de Puertos y Marina Mercante  
 SEPESCA: Secretaría de Pesca  
 SEDESOL: Secretaría de Desarrollo Social

#### Equipment

NOAA Ship McARTHUR, commissioned in 1966, is 53.3 m in length, has a beam of 11.6 m, and has a 3.7 m draft. NOAA Ship DAVID STARR JORDAN, commissioned in 1966, is 52.1 m in length, has a beam of 11.2 m, and has a 3.8 m draft. During the surveys, the vessels maintained a cruising speed of approximately 18.5 km/hr (10 knots).

Marine mammals were detected with port and starboard pedestal-mounted 25x150 Fujinon<sup>1</sup> binoculars and hand-held 7x50 binoculars. The glasses were mounted on the upper deck approximately 10.7 m above the sea surface on each vessel. The bearing to each marine mammal was measured for animals sighted forward of the ship's beam using a 180° graduated ring attached to the base of the 25X binoculars. Distance was determined by utilizing graduated reticles enclosed in the right eyepiece of the 25X binoculars.

Sighting data were collected using laptop computers with the program CRUISE2. Codes and format for data entry are documented in Appendix A. The geographic position of the vessel was recorded at ten minute intervals and at the time of a marine mammal sighting using the vessel's Global Positioning System (GPS). The GPS was directly linked to the data entry program.

A 35 mm F-1 Canon<sup>1</sup> camera with motor drive was used to photograph animals to aid in stock and species identification. The system included 400mm, 70-210mm zoom, 50mm, and 28mm lenses. The photographic identification study of large whales was conducted using a Nikon<sup>1</sup> F-3 camera equipped with a 80-210mm zoom lens and a Canon<sup>1</sup> 630 camera equipped with a 100-300mm autofocus zoom lens. Animals were also recorded on 1.27 cm video tape using a Panasonic<sup>1</sup> VHS camcorder with a telephoto lens.

#### Duty Stations

The marine mammal observers occupied three duty stations during the survey. The observers rotated through each station at forty minute intervals.

1. Left Binocular - The port-side observer used a 25X binocular, mounted on the port side of the vessel, to scan the ocean for marine mammal sighting cues. The area of responsibility for the left observer was from 10° right to 90° left and outward to the horizon or to the extent possible with prevailing environmental conditions.
2. Right Binocular - The starboard observer used a 25X binocular, mounted on the starboard side of the vessel, to scan the ocean for marine mammal sighting cues. The area of responsibility for the starboard observer was from 10° left to 90° right and outward to the horizon or to the extent possible with prevailing environmental conditions.

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<sup>1</sup>Reference to trade name does not imply endorsement by the NMFS.

3. Recorder - The recorder's duties were to enter data on search effort, environmental conditions and sightings using the on-line data acquisition computer system, and to search the trackline adjacent to the vessel by naked eye and with hand held binoculars.

In addition to the regular watch teams, a fourth independent observer maintained watch in order to detect schools or individual animals missed by the regular observers. The independent observer was stationed near the ship's centerline on the flying bridge and searched with the naked eye, 7x50 binoculars or a third pair of 25x150 binoculars. The independent observer stood watch for less than two consecutive hours. Cruise Leaders and occasionally other scientific personnel occupied the independent observer position.

#### Observer Teams and Rotation

Two teams of three observers each alternately occupied the three primary duty stations. Each team was on duty for a two-hour shift. During each shift, observers spent approximately equal time occupying each duty station. Each team had an identification specialist for marine mammals who served as the team leader. Team members rotated between the duty stations and teams rotated on and off duty without interrupting searching effort. Teams alternated standing the first watch of the day.

#### Data Collection Procedures

Marine mammal observations were conducted during all daylight hours when weather and sea conditions permitted. Generally, searching effort was conducted during Beauforts 0 through 5 conditions. Effort was terminated once the seas and wind attained a force of Beaufort 6. Effort was terminated at the discretion of the team leader and the cruise leader. The observers recorded information on all species of whales and dolphins sighted throughout the cruise. Pinniped sightings encountered more than ten nautical miles from the nearest point of land were also recorded. The recorder entered all the necessary data on the automated data entry system. Criteria for assigning sun position and sea state are given in Figure 1 and Table 1, respectively.

When marine mammals were detected, the date, time and geographical position were recorded on the computer. A sequential sighting number was assigned to the school, and the angle of the school from the trackline and the distance to the school were measured. Typically searching was suspended and the observer team would go "off-effort" to concentrate on the sighting. The vessel was directed to approach the school to identify the species, to estimate the size of the school, and to estimate species composition of the mixed species schools. All cetacean schools encountered within 3.0 nm (5.6 km) of the trackline were approached; more distant schools were occasionally approached.

For every sighting, each observer with a good view of the school independently recorded in his or her logbook the high, low, and best estimates of the school size. For mixed species schools, each observer also recorded percentage estimates of species composition. The observers discussed which species were present in each school, but did not discuss how many animals were present nor the proportions of mixed-species schools. This procedure assured some independence of each observer's school size and composition estimates. All observers present discussed species identification, behavior and other notes. A consensus was entered on the Sighting Continuation Form (Fig. 2) shortly after the time of the sighting. Sighting categories and codes are given in Table 9. After all information on the sighting was recorded, the on-effort searching mode was resumed. Normally the ship resumed effort from near the point of the last sighting. If, as happened rarely, a chase had taken the ship more than 10.0 nm (18.5 km) off the original trackline, the ship altered its course by 20° in the direction of the trackline. Observations continued until operations were suspended at sunset. Each night the Cruise Leader collected the individual logbooks and transcribed observer estimates of school size and species composition to complete the daily sighting and effort file compiled by the automated data entry system.

After securing marine mammal sighting effort for the night, the vessel would conduct ancillary project operations nearby. Biological and oceanographic sampling efforts were conducted for four to ten hours each night. A morning CTD station was occupied near the beginning point each day. Searching effort typically began on the trackline near the geographic position where effort ended the previous day, but sometimes the ship transitted at night to a new location. Other ancillary projects were conducted during daylight hours concurrently with observations. Seabird observations, and sea turtle sightings and captures were made by other scientific personnel. Cetacean biopsies were performed on animals that closely approached the ships. Species identifications were validated when possible by photographing the school at close range using 35 mm cameras.

### Helicopter Operations

Photogrammetric missions were flown during the survey from the flight deck of DAVID STARR JORDAN. A Hughes 350P helicopter was used for flight operations. On calm days the helicopter flew approximately between 0900-1100 and 1300-1500. The sea state and sun glare determined if flight operations were conducted. Cetacean schools were photographed for individual length, school size and behavioral data. If the entire school could be photographed, it was classified as a calibration school. All observers, including off duty ones, made estimates of the school size for calibration schools. The helicopter was also used to photograph California sea lion rookeries along the Baja California coast. Results from helicopter operations will be covered in a separate report.

## RESULTS

The combined on-effort trackline covered by both ships was 8400 nm (15,540 km). Figures 3 and 4 depict the tracklines surveyed by each ship. The mean distance surveyed each day combined for both ships was 63.6 nm (118 km). The daily record of on-effort nautical miles covered within the study area are listed in Table 3 and displayed in Figure 5. The geographic positions of all schools detected during the survey are presented for each species category code in Figures 6 through 29.

A total of 1360 sightings were made during the survey, 577 sightings on McARTHUR and 783 sightings on DAVID STARR JORDAN. The complete marine mammal sighting record is presented in Table 4. This table includes the time, position and estimated school size for all sightings listed by species. The sighting information is summarized in Table 5 which presents a breakdown of the pure and mixed schools and the average school size for each category sighted. There were 1235 pure species sightings and 106 mixed school sightings. Table 6 presents the composition of the mixed school sightings. Nineteen pinniped sightings were made during the survey, none of which were associated with any cetacean sightings. Forty six categories of marine mammals were recorded during the PODS 92 survey (Table 5). The most common sightings were unidentified dolphins with 228 sightings in this category. Most unidentified dolphin sightings were of small groups of dolphins seen very briefly and at a distance greater than 3.0 nm. Other frequently sighted categories included spinner dolphin (172), bottlenose dolphin (160), offshore spotted dolphin (150) and the common dolphin, short beak (108). The overall rate of detecting marine mammals in the study area during on-effort searching was 91.44 schools/1000 nm or 4.94 schools/100 km. Sighting rates were negatively correlated with sea state and swell height (Table 7).

Twenty six observers participated in the marine mammal searching effort throughout the survey. The twelve primary observers were joined by seven cruise leaders and seven other scientific personnel. The primary observers occupied the three rotation positions unless a substitute was employed to cover for illness. The rate of schools detected by each primary observer ranged from 16.4 to 42.8 sightings/1000 nm. The detection rates for all participating observers are found in Table 8. A complete listing of SWFSC marine mammal observers with the corresponding observer code is listed in Table 10.

## ACKNOWLEDGEMENTS

We would like to thank the officers and crew of NOAA Ships McARTHUR and DAVID STARR JORDAN, and their operational logistics support for providing able and efficient platforms from which we were able to conduct the research. A special thanks goes to all of the marine mammal observers who spent many long hours collecting the data. Their dedication to the project is greatly appreciated.

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Alan Jackson and Randy Rasmussen for data editing and compilation.

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Ginny Hostler, personnel and staffing.

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Table 1. Sea State Conditions measured by the Beaufort scale (from Bowditch, 1966).

Wind force (Beaufort)	Knots	Descriptive	Sea Conditions	Probable wave height in feet
0	0- 1	Calm	Sea smooth and mirror-like	-
1	1- 3	Light air	Scale-like ripple without foam crests	1/4
2	4- 6	Light breeze	Small short wavelets; crests have a glassy appearance and do not break	1/2
3	7-10	Gentle breeze	Large wavelets; some crests begin to break; foam of glassy appearance. Occasional white foam crests	2
4	11-16	Moderate breeze	Small waves, becoming longer; fairly frequent white foam crests	4
5	17-21	Fresh breeze	Moderate waves, taking a more pronounced long form; many white foam crests; there may be some spray	6
6	22-27	Strong breeze	Large waves begin to form; white foam crests are more extensive everywhere; there may be some spray	10

Table 2. PODS 92 Study Area Boundary Points. Boundary begins at the coastline of Colombia and ends at the Mexico-Guatemala border.

1) 2° 00.0' N	78° 36.0' W	6) 12° 21.0' N	96° 21.0' W
2) 2° 00.0' N	95° 00.0' W	7) 12° 30.0' N	95° 12.0' W
3) 10° 00.0' N	100° 00.0' W	8) 11° 54.0' N	94° 30.0' W
4) 13° 18.0' N	100° 00.0' W	9) 11° 30.0' N	93° 50.0' W
5) 12° 30.0' N	97° 30.0' W	10) 14° 34.0' N	92° 12.0' W



Table 3: PODS 92 On-effort Nautical Miles by day. Both ships were off-effort in transit to the study area from July 28 to August 7. DAVID STARR JORDAN was additionally off-effort on return to San Diego from October 25 to November 2. McARTHUR conducted 70 days of on-effort observations. DAVID STARR JORDAN conducted 63 days of on-effort observations.

Date	McARTHUR	D.S. JORDAN	Date	McARTHUR	D.S. JORDAN
8 Aug 92	60.9	43.2	4 Oct 92	0.0	0.3
9 Aug 92	68.4	76.3	5 Oct 92	69.9	28.4
10 Aug 92	27.3	46.7	6 Oct 92	63.9	66.2
11 Aug 92	43.7	42.4	7 Oct 92	90.2	71.9
12 Aug 92	43.9	61.1	8 Oct 92	66.3	77.0
13 Aug 92	85.7	53.7	9 Oct 92	85.0	0.0
14 Aug 92	86.5	56.6	10 Oct 92	74.0	65.8
15 Aug 92	55.9	96.2	11 Oct 92	91.8	82.0
16 Aug 92	11.2	67.8	12 Oct 92	82.5	75.0
17 Aug 92	99.5	72.5	13 Oct 92	0.0	66.4
18 Aug 92	103.5	47.7	14 Oct 92	66.6	62.0
19 Aug 92	67.4	54.3	15 Oct 92	50.3	35.5
20 Aug 92	60.5	85.5	16 Oct 92	61.7	84.3
21 Aug 92	30.3	75.8	17 Oct 92	100.6	95.8
22 Aug 92	60.6	52.4	18 Oct 92	74.4	51.0
23 Aug 92	14.0	61.7	19 Oct 92	76.8	53.4
24 Aug 92	0.0	79.9	20 Oct 92	80.5	37.6
25 Aug 92	49.1	14.5	21 Oct 92	70.2	71.3
Total Leg 1	968.4	1088.3	22 Oct 92	87.1	54.7
			23 Oct 92	55.0	36.2
			24 Oct 92	70.0	52.6
			25 Oct 92	42.5	0.0
31 Aug 92	0.0	41.8	26 Oct 92	45.2	0.0
1 Sep 92	57.2	89.3	27 Oct 92	62.2	0.0
2 Sep 92	34.1	61.4	28 Oct 92	62.7	0.0
3 Sep 92	50.3	79.1	29 Oct 92	47.1	0.0
4 Sep 92	55.7	57.3	30 Oct 92	104.0	0.0
5 Sep 92	78.6	34.2	1 Nov 92	36.6	0.0
6 Sep 92	74.6	62.5	Total Leg 3	1817.1	1167.4
7 Sep 92	91.9	70.6			
8 Sep 92	96.2	0.0			
9 Sep 92	84.5	5.2			
10 Sep 92	102.7	49.9			
11 Sep 92	89.9	30.9	Cruise Total	4513.0	3886.7
12 Sep 92	24.3	105.6			
13 Sep 92	35.2	94.9			
14 Sep 92	85.7	93.1	Mean Distance	64.43	61.68
15 Sep 92	115.5	96.6	(per day)		
16 Sep 92	52.8	87.2			
17 Sep 92	17.2	66.0			
18 Sep 92	69.1	76.5			
19 Sep 92	40.7	96.4			
20 Sep 92	38.0	0.0			
21 Sep 92	26.1	57.0			
22 Sep 92	62.6	60.5			
23 Sep 92	60.2	13.9			
24 Sep 92	51.8	0.0			
25 Sep 92	0.0	66.5			
26 Sep 92	95.3	55.6			
27 Sep 92	68.7	79.0			
28 Sep 92	68.7	0.0			
Total Leg 2	1727.6	1631.0			

Table 4. PODS 92 Marine Mammal Sighting Record. Table is ordered by species code (see Table 9) and sighting number. "Other Codes" are the codes of other species in a mixed-species school. Time is local time, and latitude and longitude are the location of the ship at the time of the sighting. School size is the average of all observers' best estimates. Sighting numbers apply to either DAVID STARR JORDAN (J) or McARTHUR (M).

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Effort
Stenella attenuata (offshore)										
02	10	M 59	1 Aug 92	1430	N22:37.01	W110:01.33	4	95	467	Off
02		M 64	1 Aug 92	1719	N22:37.94	W109:44.13	1	97	472	Off
02		M 66	1 Aug 92	1812	N22:42.30	W109:39.80	1	92	2	Off
02		M 67	1 Aug 92	1837	N22:41.35	W109:37.45	1	55	35	Off
02		M 68	1 Aug 92	1855	N22:40.19	W109:34.21	1	55	198	Off
02		M 69	2 Aug 92	552	N22:12.51	W107:12.47	1	74	97	Off
02		M 74	2 Aug 92	1641	N21:31.21	W105:50.79	3	55	10	Off
02		M 77	3 Aug 92	1038	N19:03.72	W105:01.94	2	95	50	Off
02		M 79	3 Aug 92	1124	N19:05.00	W104:58.90	1	92	12	Off
02		M 80	3 Aug 92	1140	N19:03.43	W104:56.64	1	95	12	Off
02		M 81	3 Aug 92	1218	N18:58.67	W104:55.46	1	74	16	Off
02		M 82	3 Aug 92	1224	N18:58.05	W104:54.42	1	91	52	Off
02		M 85	3 Aug 92	1643	N18:40.39	W104:25.25	3	97	70	Off
02	10	M 88	4 Aug 92	618	N17:28.28	W102:01.48	2	74	38	Off
02		M 89	4 Aug 92	655	N17:26.25	W101:59.47	2	91	9	Off
02		M 91	4 Aug 92	803	N17:26.74	W101:51.50	2	92	35	Off
02		J 92	2 Aug 92	612	N22:49.28	W110:00.35	4	73	22	Off
02		J 93	2 Aug 92	632	N22:48.85	W109:57.82	4	73	20	Off
02		J 94	2 Aug 92	724	N22:47.14	W109:48.11	2	87	41	Off
02		J 95	2 Aug 92	807	N22:47.52	W109:41.29	2	94	44	Off
02		M 95	4 Aug 92	930	N17:21.45	W101:37.96	2	55	15	Off
02		J 96	2 Aug 92	831	N22:48.02	W109:37.74	1	94	25	Off
02		J 97	2 Aug 92	928	N22:44.59	W109:29.03	1	94	32	Off
02		J 98	2 Aug 92	1012	N22:41.58	W109:23.60	1	4	47	Off
02		M 99	4 Aug 92	1355	N17:05.35	W101:05.71	4	95	153	Off
02	10	M 105	5 Aug 92	1648	N15:23.98	W096:45.37	2	74	240	Off
02		M 106	5 Aug 92	1734	N15:23.24	W096:37.25	1	55	170	Off
02		M 110	6 Aug 92	655	N15:40.93	W094:06.09	5	74	57	Off
02		J 122	3 Aug 92	1652	N21:15.12	W105:58.36	1	73	23	Off
02		J 124	3 Aug 92	1742	N21:06.24	W105:57.05	1	4	3	Off
02		J 127	4 Aug 92	848	N18:57.30	W104:49.30	2	96	34	Off
02		J 128	4 Aug 92	908	N18:56.69	W104:47.11	2	96	78	Off
02		J 129	4 Aug 92	1128	N18:45.86	W104:30.26	1	99	28	Off
02		J 130	4 Aug 92	1144	N18:43.65	W104:28.55	1	73	39	Off
02		J 131	4 Aug 92	1220	N18:39.99	W104:23.97	1	7	40	Off
02		J 132	4 Aug 92	1248	N18:38.10	W104:20.39	1	96	21	Off
02		J 135	4 Aug 92	1446	N18:28.43	W104:06.56	4	73	117	Off
02	10	J 141	4 Aug 92	1903	N18:05.85	W103:36.67	4	73	93	Off
02		J 146	5 Aug 92	1533	N16:45.86	W100:25.42	3	96	3	Off
02		J 155	6 Aug 92	644	N15:55.27	W098:18.16	3	73	78	Off
02		J 157	6 Aug 92	726	N15:55.64	W098:12.32	3	93	81	Off
02		M 159	10 Aug 92	930	N09:51.61	W089:09.52	2	55	325	On
02		J 161	6 Aug 92	1145	N15:42.87	W097:30.83	2	93	13	Off
02	10	J 162	6 Aug 92	1342	N15:36.93	W097:09.69	2	7	231	Off
02	10	J 163	6 Aug 92	1546	N15:32.36	W096:55.46	2	73	267	Off
02		J 164	6 Aug 92	1659	N15:27.49	W096:41.60	2	7	128	Off
02		J 168	7 Aug 92	1527	N15:02.21	W093:44.43	2	96	56	Off
02	15	J 170	7 Aug 92	1645	N14:54.99	W093:38.00	2	87	15	Off
02		J 182	8 Aug 92	1606	N13:17.94	W091:41.12	1	7	33	On
02		J 187	9 Aug 92	736	N12:58.27	W092:02.41	5	94	17	Off
02		J 190	9 Aug 92	1511	N12:09.35	W092:50.36	4	94	242	On
02		J 195	10 Aug 92	833	N11:49.88	W093:11.06	1	7	136	On
02	10	J 196	10 Aug 92	918	N11:48.01	W093:16.48	1	7	127	On
02		M 196	13 Aug 92	826	N07:28.62	W091:27.57	5	91	32	On

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Ef-fort
02	10	J 201	10 Aug 92	1137	N11:32.66	W093:28.11	2	73	503	On
02	10	J 203	10 Aug 92	1316	N11:31.15	W093:39.81	2	7	353	Off
02	10	J 204	10 Aug 92	1351	N11:27.92	W093:43.83	1	96	1080	On
02	10	J 206	10 Aug 92	1440	N11:21.08	W093:45.23	1	73	1214	On
02	10 18	J 209	10 Aug 92	1522	N11:19.52	W093:51.74	2	93	240	On
02		M 209	20 Aug 92	734	N06:49.63	W094:10.60	3	97	36	On
02		M 210	20 Aug 92	809	N06:53.34	W094:08.67	3	95	65	On
02		J 211	10 Aug 92	1700	N11:09.01	W094:01.45	1	7	49	On
02		M 212	20 Aug 92	1051	N07:07.94	W093:56.59	3	97	57	On
02		M 214	20 Aug 92	1319	N07:25.37	W093:40.01	3	55	152	On
02	10	J 214	10 Aug 92	1803	N11:00.78	W094:08.36	1	93	168	On
02	10	J 215	10 Aug 92	1625	N11:12.70	W093:59.40	1	96	33	On
02		J 216	11 Aug 92	615	N10:52.39	W094:07.68	1	7	38	On
02		M 217	20 Aug 92	1442	N07:37.41	W093:29.83	3	91	167	On
02		M 224	22 Aug 92	750	N08:32.06	W092:25.37	2	74	62	On
02	10	J 226	11 Aug 92	1037	N10:22.10	W094:24.43	2	94	148	On
02		M 226	22 Aug 92	953	N08:41.99	W092:13.59	3	95	113	On
02	17	J 227	11 Aug 92	1104	N10:20.30	W094:28.85	2	7	146	On
02		M 233	22 Aug 92	1538	N09:04.01	W091:44.17	3	97	148	On
02		J 234	11 Aug 92	1739	N09:59.05	W095:02.50	1	7	96	On
02		M 242	24 Aug 92	1122	N10:05.00	W090:57.00	5	74	40	Off
02	10	J 248	12 Aug 92	1247	N09:16.69	W095:50.81	2	96	127	On
02		J 262	14 Aug 92	1209	N07:02.87	W097:56.22	4	94	60	On
02		M 264	1 Sep 92	1235	N12:21.76	W088:46.69	4	95	227	On
02		J 267	15 Aug 92	1544	N06:46.45	W096:15.27	5	94	22	On
02		J 286	17 Aug 92	917	N08:25.62	W094:36.25	5	73	43	On
02		J 311	18 Aug 92	1719	N10:26.55	W092:55.14	3	96	24	On
02		M 318	11 Sep 92	1707	N02:01.02	W094:53.19	4	95	267	Off
02	11	M 319	12 Sep 92	746	N02:00.63	W093:28.22	3	92	243	Off
02		J 319	19 Aug 92	748	N10:32.35	W092:29.86	3	96	41	Off
02	11 72	M 322	12 Sep 92	1414	N02:18.07	W092:43.89	4	97	415	On
02		J 323	19 Aug 92	1019	N10:49.23	W092:23.08	3	99	67	Off
02	11	M 324	12 Sep 92	1543	N02:26.43	W092:39.98	4	55	90	On
02	11	M 325	12 Sep 92	1615	N02:29.53	W092:40.67	4	74	317	On
02	11	M 326	12 Sep 92	1728	N02:30.61	W092:32.24	4	55	332	On
02		M 328	13 Sep 92	628	N02:33.75	W092:26.07	4	97	20	On
02		M 347	16 Sep 92	1423	N06:31.53	W088:30.92	3	55	60	On
02	10	J 350	24 Aug 92	829	N12:21.31	W090:42.55	3	96	92	On
02		M 362	20 Sep 92	1821	N09:45.51	W091:18.12	2	55	200	On
02		M 369	22 Sep 92	727	N07:42.74	W088:42.71	3	55	14	On
02		J 378	31 Aug 92	1410	N13:33.11	W090:22.11	3	99	8	Off
02	03	M 393	25 Sep 92	1729	N07:28.07	W084:26.37	4	91	433	Off
02		J 395	2 Sep 92	1053	N10:59.93	W090:05.95	4	73	113	On
02		M 406	28 Sep 92	808	N07:41.32	W079:18.14	4	97	32	On
02		J 414	5 Sep 92	1152	N08:57.49	W084:13.53	2	80	227	On
02		M 427	6 Oct 92	1411	N05:24.68	W079:34.59	1	94	120	On
02		J 441	9 Sep 92	1722	N09:38.26	W085:21.86	4	73	55	On
02		J 451	10 Sep 92	1121	N09:14.02	W085:38.90	2	96	88	On
02	03	J 464	13 Sep 92	731	N04:18.93	W088:44.92	5	87	70	On
02	03	J 481	17 Sep 92	1030	N02:17.54	W091:20.18	4	99	238	Off
02		J 484	18 Sep 92	608	N02:00.18	W088:59.91	5	73	33	On
02	03	J 487	18 Sep 92	927	N02:16.20	W088:49.87	5	7	203	On
02		M 495	18 Oct 92	803	N03:29.11	W085:30.02	5	93	297	On
02		J 496	21 Sep 92	706	N06:03.35	W084:56.52	4	7	62	On
02		M 496	18 Oct 92	1022	N03:38.41	W085:15.15	5	73	33	On
02	18	J 516	23 Sep 92	1350	N08:23.89	W083:41.22	3	94	8	Off
02		J 517	23 Sep 92	1426	N08:26.81	W083:46.42	3	7	133	Off
02	36	M 555	27 Oct 92	956	N02:05.42	W078:55.68	4	94	182	On
02	11	J 592	12 Oct 92	1404	N02:43.79	W087:37.12	4	92	400	On
02		J 595	13 Oct 92	707	N03:55.53	W088:54.72	4	97	23	On

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Effort
02		J 596	13 Oct 92	1109	N04:19.47	W089:11.39	4	91	10	On
02		J 600	13 Oct 92	1524	N04:43.53	W089:34.47	3	97	11	On
02		J 645	17 Oct 92	727	N10:50.54	W096:06.64	3	91	55	On
02	10	J 663	19 Oct 92	831	N09:28.80	W099:36.41	2	55	323	On
02	10	J 667	19 Oct 92	1322	N09:53.36	W099:14.78	3	55	335	On
02	10	J 671	20 Oct 92	1420	N11:44.35	W097:08.98	4	55	210	Off
02	10	J 673	21 Oct 92	733	N12:03.13	W095:00.93	4	97	62	Off
02	10 18	J 676	21 Oct 92	1358	N11:27.44	W095:29.89	4	55	192	On
02		J 681	22 Oct 92	1344	N10:25.71	W098:29.51	3	74	63	On
02		J 687	23 Oct 92	1111	N11:30.44	W099:16.07	5	97	22	On
02		J 691	23 Oct 92	1657	N11:52.26	W098:50.05	3	55	68	On
02		J 692	24 Oct 92	708	N11:59.05	W098:41.97	2	95	85	On
02	10	J 694	24 Oct 92	1310	N12:34.85	W098:05.77	1	91	253	On
02		J 696	24 Oct 92	1545	N12:56.94	W098:17.93	2	55	6	Off
02	10	J 697	24 Oct 92	1621	N12:58.37	W098:19.01	2	55	176	Off
02		J 698	24 Oct 92	1719	N13:03.33	W098:26.50	1	97	12	Off
02	15	J 699	25 Oct 92	652	N14:49.98	W099:37.72	3	74	40	Off
02	10	J 701	25 Oct 92	1155	N15:18.73	W099:48.45	3	97	38	Off
02		J 703	26 Oct 92	557	N17:01.68	W101:11.56	2	92	40	Off
02		J 704	26 Oct 92	618	N17:03.88	W101:13.93	2	92	43	Off
02		J 705	26 Oct 92	709	N17:07.22	W101:21.55	2	92	23	Off
02		J 706	26 Oct 92	733	N17:07.19	W101:24.07	2	95	26	Off
02		J 707	26 Oct 92	743	N17:08.41	W101:24.27	2	95	6	Off
02		J 708	26 Oct 92	829	N17:11.35	W101:31.04	2	91	35	Off
02	10	J 712	26 Oct 92	1308	N17:16.04	W101:47.96	1	91	107	Off
02		J 714	26 Oct 92	1519	N17:25.32	W102:03.82	3	92	63	Off
02		J 716	27 Oct 92	659	N18:27.15	W103:58.93	2	91	28	Off
02		J 730	28 Oct 92	608	N20:51.45	W106:08.73	1	55	78	Off
02		J 731	28 Oct 92	637	N20:53.53	W106:11.27	1	55	62	Off
02	17	J 732	28 Oct 92	643	N20:54.52	W106:11.46	1	55	164	Off
02	77	J 735	28 Oct 92	920	N21:06.63	W106:17.08	0	91	47	Off
02		J 737	28 Oct 92	1025	N21:06.16	W106:23.51	1	55	13	Off
02		J 738	28 Oct 92	1035	N21:07.36	W106:24.26	1	92	22	Off
02	10	J 753	29 Oct 92	716	N22:31.37	W108:55.73	2	74	100	Off
02	10	J 755	29 Oct 92	833	N22:35.10	W109:07.99	2	95	260	Off
02		J 768	29 Oct 92	1542	N22:58.32	W110:07.86	2	74	63	Off
Stenella longirostris (unidentified subspecies)										
03		J 377	25 Aug 92	1519	N13:03.04	W090:00.34	2	96	4921	Off
03		J 382	31 Aug 92	1735	N13:12.75	W090:15.52	4	73	863	Off
03	02	M 393	25 Sep 92	1729	N07:28.07	W084:26.37	4	91	433	Off
03	02	J 464	13 Sep 92	731	N04:18.93	W088:44.92	5	87	70	On
03	02	J 481	17 Sep 92	1030	N02:17.54	W091:20.18	4	99	238	Off
03	02	J 487	18 Sep 92	927	N02:16.20	W088:49.87	5	7	203	On
03		J 727	27 Oct 92	1407	N19:01.58	W104:52.87	3	74	217	Off
03		J 760	29 Oct 92	1146	N22:42.78	W109:41.32	2	74	30	Off
Delphinus delphis (unidentified subspecies)										
05		J 1	29 Jul 92	923	N29:50.03	W115:59.48	3	94	10	Off
05	22	M 23	30 Jul 92	1143	N27:17.94	W114:45.90	1	92	6	Off
05		M 26	30 Jul 92	1217	N27:17.10	W114:42.00	1	97	40	Off
05	22	M 31	30 Jul 92	1420	N27:12.36	W114:37.98	2	55	6	Off
05		J 42	30 Jul 92	1854	N27:26.98	W115:11.73	4	94	4	Off
05		M 48	31 Jul 92	1516	N24:53.94	W112:24.66	4	74	6	Off
05		J 51	31 Jul 92	1615	N26:44.54	W114:05.17	4	96	1	Off
05		M 52	31 Jul 92	1758	N24:36.72	W112:20.94	3	91	9	Off
05		J 70	1 Aug 92	1037	N24:48.04	W112:33.40	3	4	1	Off
05		M 83	3 Aug 92	1331	N18:52.57	W104:44.87	1	74	333	Off
05		M 96	4 Aug 92	1214	N17:08.68	W101:13.47	3	55	80	Off
05		J 189	9 Aug 92	1204	N12:29.19	W092:30.64	3	87	1	On

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Ef-fort
05		M 271	2 Sep 92	838	N10:44.41	W087:46.13	5	91	6	On
05		J 416	5 Sep 92	1231	N08:53.61	W084:15.24	2	94	35	On
05		J 617	15 Oct 92	*732	N07:24.24	W092:27.35	3	91	375	On
<i>Stenella attenuata graffmani</i>										
06		M 111	6 Aug 92	931	N15:31.48	W093:48.56	2	55	37	Off
06		M 113	6 Aug 92	1658	N14:51.80	W092:55.53	3	55	7	Off
06		M 131	8 Aug 92	644	N12:10.87	W087:17.53	4	97	6	Off
06		M 134	8 Aug 92	852	N12:03.60	W087:04.69	2	55	117	Off
06		M 135	8 Aug 92	1028	N11:57.78	W087:05.71	4	97	11	On
06		M 136	8 Aug 92	1118	N11:53.51	W087:12.63	4	97	8	On
06		M 138	8 Aug 92	1222	N11:47.05	W087:17.90	4	92	8	On
06		M 249	25 Aug 92	815	N12:56.20	W089:35.39	2	97	35	On
06		M 251	25 Aug 92	1116	N13:10.19	W089:49.56	1	92	23	On
06		M 252	25 Aug 92	1202	N13:13.56	W089:54.36	1	97	10	On
06		M 253	25 Aug 92	1244	N13:17.69	W089:58.92	1	91	7	On
06		M 254	1 Sep 92	749	N12:41.09	W088:08.01	4	97	5	On
06		M 255	1 Sep 92	825	N12:37.86	W088:12.14	4	92	38	On
06		M 260	1 Sep 92	1039	N12:29.00	W088:30.43	4	74	172	On
06		M 274	3 Sep 92	730	N10:58.96	W085:59.84	3	74	73	On
06		M 275	3 Sep 92	825	N10:57.27	W085:59.51	4	55	80	On
06		M 276	3 Sep 92	825	N10:57.21	W085:59.60	4	92	20	Off
06		M 278	3 Sep 92	1107	N10:45.58	W086:19.95	4	74	73	On
06	18	M 407	28 Sep 92	1026	N07:55.60	W079:04.83	3	55	42	On
06		M 408	28 Sep 92	1055	N07:58.86	W078:59.98	3	92	11	On
06		J 440	9 Sep 92	1610	N09:35.61	W085:15.82	2	4	5	Off
06		M 522	21 Oct 92	1623	N07:18.09	W081:30.23	4	96	25	On
06		M 524	22 Oct 92	641	N07:12.04	W080:13.51	2	96	34	On
06	90 18	J 537	28 Sep 92	925	N07:18.92	W079:51.47	4	7	94	Off
06		M 548	26 Oct 92	1024	N02:51.63	W078:08.14	3	94	28	On
06		J 550	4 Oct 92	1751	N07:42.17	W079:06.81	2	74	13	Off
06		M 551	26 Oct 92	1322	N02:52.50	W078:15.79	4	93	179	On
<i>Stenella longirostris orientalis</i>										
10	02	M 59	1 Aug 92	1430	N22:37.01	W110:01.33	4	95	467	Off
10	02	M 88	4 Aug 92	618	N17:28.28	W102:01.48	2	74	38	Off
10		M 103	5 Aug 92	1524	N15:26.91	W096:57.65	2	92	43	Off
10	02	M 105	5 Aug 92	1648	N15:23.98	W096:45.37	2	74	240	Off
10		J 105	2 Aug 92	1305	N22:42.21	W109:03.54	1	96	46	Off
10		J 121	3 Aug 92	1538	N21:18.40	W105:51.61	1	99	469	Off
10		M 121	7 Aug 92	941	N13:14.30	W090:34.51	2	91	650	Off
10		M 123	7 Aug 92	1035	N13:09.29	W090:27.78	2	55	417	Off
10		J 123	3 Aug 92	1714	N21:11.24	W105:58.16	1	87	215	Off
10		M 124	7 Aug 92	1059	N13:06.72	W090:25.61	2	92	1067	Off
10		J 136	4 Aug 92	1518	N18:27.50	W104:01.79	4	87	20	Off
10	02	J 141	4 Aug 92	1903	N18:05.85	W103:36.67	4	73	93	Off
10	02	J 162	6 Aug 92	1342	N15:36.93	W097:09.69	2	7	231	Off
10	02	J 163	6 Aug 92	1546	N15:32.36	W096:55.46	2	73	267	Off
10	02	J 196	10 Aug 92	918	N11:48.01	W093:16.48	1	7	127	On
10	02	J 201	10 Aug 92	1137	N11:32.66	W093:28.11	2	73	503	On
10	02	J 203	10 Aug 92	1316	N11:31.15	W093:39.81	2	7	353	Off
10	02	J 204	10 Aug 92	1351	N11:27.92	W093:43.83	1	96	1080	On
10	02	J 206	10 Aug 92	1440	N11:21.08	W093:45.23	1	73	1214	On
10	02 18	J 209	10 Aug 92	1522	N11:19.52	W093:51.74	2	93	240	On
10	02	J 214	10 Aug 92	1803	N11:00.78	W094:08.36	1	93	168	On
10	02	J 215	10 Aug 92	1625	N11:12.70	W093:59.40	1	96	33	On
10	02	J 226	11 Aug 92	1037	N10:22.10	W094:24.43	2	94	148	On
10	02	J 248	12 Aug 92	1247	N09:16.69	W095:50.81	2	96	127	On
10		J 347	23 Aug 92	1732	N12:02.43	W091:06.69	5	94	5	On
10	02	J 350	24 Aug 92	829	N12:21.31	W090:42.55	3	96	92	On

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Effort
10		J 418	5 Sep 92	1534	N08:35.83	W084:29.09	3	93	104	On
10		J 428	6 Sep 92	1050	N07:57.57	W085:11.62	2	73	52	On
10	11 77 78	M 505	19 Oct 92	804	N04:36.78	W084:25.99	5	73	110	On
10	77	M 510	20 Oct 92	802	N05:40.62	W083:19.03	3	7	67	On
10		J 529	26 Sep 92	754	N07:11.93	W084:12.88	5	96	25	Off
10		J 531	26 Sep 92	1542	N06:22.91	W083:23.38	4	73	63	On
10		J 661	19 Oct 92	636	N09:19.27	W099:24.64	2	97	26	Off
10	02	J 663	19 Oct 92	831	N09:28.80	W099:36.41	2	55	323	On
10	02	J 667	19 Oct 92	1322	N09:53.36	W099:14.78	3	55	335	On
10	02	J 671	20 Oct 92	1420	N11:44.35	W097:08.98	4	55	210	Off
10		J 672	20 Oct 92	1448	N11:44.79	W097:05.47	4	95	24	Off
10	02	J 673	21 Oct 92	733	N12:03.13	W095:00.93	4	97	62	Off
10		J 675	21 Oct 92	1050	N11:45.98	W095:13.18	4	74	24	On
10	02 18	J 676	21 Oct 92	1358	N11:27.44	W095:29.89	4	55	192	On
10	02	J 694	24 Oct 92	1310	N12:34.85	W098:05.77	1	91	253	On
10	02	J 697	24 Oct 92	1621	N12:58.37	W098:19.01	2	55	176	Off
10		J 700	25 Oct 92	1039	N15:10.93	W099:44.82	3	91	10	Off
10	02	J 701	25 Oct 92	1155	N15:18.73	W099:48.45	3	97	38	Off
10	02	J 712	26 Oct 92	1308	N17:16.04	W101:47.96	1	91	107	Off
10		J 749	28 Oct 92	1511	N21:32.05	W106:46.96	2	55	26	Off
10	02	J 753	29 Oct 92	716	N22:31.37	W108:55.73	2	74	100	Off
10	02	J 755	29 Oct 92	833	N22:35.10	W109:07.99	2	95	260	Off
10		J 770	29 Oct 92	1709	N23:02.43	W110:15.17	2	92	357	Off
Stenella longirostris (hybrid)										
11	02	M 319	12 Sep 92	746	N02:00.63	W093:28.22	3	92	243	Off
11	02 72	M 322	12 Sep 92	1414	N02:18.07	W092:43.89	4	97	415	On
11	02	M 324	12 Sep 92	1543	N02:26.43	W092:39.98	4	55	90	On
11	02	M 325	12 Sep 92	1615	N02:29.53	W092:40.67	4	74	317	On
11	02	M 326	12 Sep 92	1728	N02:30.61	W092:32.24	4	55	332	On
11	10 77 78	M 505	19 Oct 92	804	N04:36.78	W084:25.99	5	73	110	On
11	02	J 592	12 Oct 92	1404	N02:43.79	W087:37.12	4	92	400	On
Stenella coeruleoalba										
13		M 55	1 Aug 92	1156	N22:36.30	W110:17.15	3	92	47	Off
13		M 57	1 Aug 92	1313	N22:36.44	W110:08.87	3	97	25	Off
13		J 112	2 Aug 92	1421	N22:41.60	W108:56.54	2	87	57	Off
13		J 114	2 Aug 92	1547	N22:41.02	W108:45.14	2	87	37	Off
13		J 115	2 Aug 92	1632	N22:37.57	W108:40.10	2	94	61	Off
13		M 147	9 Aug 92	1414	N10:26.21	W088:35.07	4	55	40	On
13		M 148	9 Aug 92	1534	N10:19.91	W088:43.31	4	92	83	On
13		M 149	9 Aug 92	1617	N10:14.98	W088:46.62	4	97	55	On
13		M 154	10 Aug 92	613	N10:10.02	W088:54.37	2	74	97	On
13		M 155	10 Aug 92	638	N10:08.22	W088:57.47	2	74	155	On
13		M 156	10 Aug 92	730	N10:03.29	W089:03.48	3	97	118	On
13		M 160	10 Aug 92	1030	N09:45.80	W089:12.15	2	74	83	On
13		M 162	10 Aug 92	1144	N09:37.81	W089:17.58	2	74	65	On
13		M 163	10 Aug 92	1211	N09:34.30	W089:20.61	2	92	62	On
13		M 164	10 Aug 92	1234	N09:30.95	W089:22.91	2	55	115	On
13		M 169	10 Aug 92	1658	N09:26.02	W089:31.61	0	95	65	On
13		M 170	10 Aug 92	1703	N09:25.40	W089:32.27	0	95	22	Off
13		M 171	10 Aug 92	1725	N09:23.67	W089:34.62	0	74	125	On
13		M 174	11 Aug 92	607	N09:23.68	W089:38.89	1	55	168	On
13		M 175	11 Aug 92	646	N09:20.91	W089:44.76	1	95	117	On
13		M 176	11 Aug 92	702	N09:20.70	W089:46.85	1	95	98	On
13		M 182	11 Aug 92	935	N09:05.56	W089:53.18	2	97	83	On
13		M 185	11 Aug 92	1044	N08:59.66	W089:59.06	2	95	115	On
13		J 194	10 Aug 92	738	N11:57.22	W093:07.06	0	87	63	On
13		M 194	11 Aug 92	1730	N08:18.19	W090:31.87	2	55	130	On
13		J 197	10 Aug 92	956	N11:45.09	W093:15.96	1	94	80	On

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Ef-fort
13		M 197	14 Aug 92	733	N06:28.65	W092:32.11	3	74	7	On
13		J 202	10 Aug 92	1258	N11:30.51	W093:36.78	2	96	45	On
13		M 211	20 Aug 92	931	N06:59.28	W094:01.75	3	55	68	On
13		J 212	10 Aug 92	1716	N11:06.63	W094:02.56	1	96	44	On
13		M 216	20 Aug 92	1416	N07:33.55	W093:34.00	3	91	90	On
13		J 217	11 Aug 92	626	N10:51.08	W094:09.08	1	7	26	On
13		M 219	20 Aug 92	1744	N07:55.06	W093:12.20	3	74	65	On
13		J 221	11 Aug 92	754	N10:40.09	W094:19.01	1	94	29	On
13		M 222	21 Aug 92	1354	N08:20.70	W092:44.87	5	74	41	On
13		J 224	11 Aug 92	955	N10:25.78	W094:21.36	2	73	70	Off
13		J 225	11 Aug 92	1011	N10:25.06	W094:21.41	2	96	11	On
13		M 225	22 Aug 92	920	N08:39.61	W092:18.78	2	95	55	On
13		J 229	11 Aug 92	1254	N10:17.93	W094:45.36	2	73	28	On
13		J 230	11 Aug 92	1315	N10:14.74	W094:46.85	2	87	64	On
13		M 231	22 Aug 92	1337	N09:02.04	W091:48.08	4	92	121	On
13		J 231	11 Aug 92	1551	N10:11.05	W094:59.96	2	94	103	On
13		M 232	22 Aug 92	1445	N09:04.89	W091:48.84	3	97	57	On
13		J 233	11 Aug 92	1713	N10:01.56	W094:59.84	1	87	16	On
13		J 235	11 Aug 92	1804	N09:57.92	W095:03.65	1	7	39	On
13		M 237	24 Aug 92	752	N09:52.00	W091:12.00	5	91	48	Off
13		J 238	12 Aug 92	624	N09:52.95	W095:07.19	3	73	31	On
13		M 241	24 Aug 92	1043	N10:02.00	W091:02.00	5	74	45	Off
13		J 243	12 Aug 92	924	N09:38.08	W095:28.41	3	7	62	On
13		J 244	12 Aug 92	1118	N09:25.49	W095:42.49	3	73	73	On
13		J 245	12 Aug 92	1149	N09:21.47	W095:43.93	3	73	95	On
13		J 247	12 Aug 92	1217	N09:18.40	W095:47.31	3	94	25	On
13		J 249	12 Aug 92	1256	N09:15.67	W095:51.97	2	96	51	On
13		J 253	12 Aug 92	1505	N09:02.08	W096:03.95	2	73	27	On
13		J 255	12 Aug 92	1717	N08:45.99	W096:19.95	4	7	12	On
13		J 256	12 Aug 92	1804	N08:43.06	W096:25.61	5	73	85	On
13		J 261	13 Aug 92	1808	N07:47.04	W097:14.32	4	94	64	On
13		J 266	15 Aug 92	1339	N06:32.48	W096:29.29	5	73	6	On
13		J 268	15 Aug 92	1714	N06:54.24	W096:12.31	5	73	8	On
13		J 271	15 Aug 92	1758	N06:59.09	W096:07.22	5	96	47	On
13		J 274	16 Aug 92	749	N07:00.65	W095:59.97	4	87	58	On
13		M 280	3 Sep 92	1241	N10:35.90	W086:25.39	5	55	63	On
13		J 282	16 Aug 92	1350	N07:40.70	W095:20.61	5	94	29	On
13		M 289	4 Sep 92	1751	N10:31.34	W087:26.07	4	55	73	On
13		J 295	18 Aug 92	901	N09:37.69	W093:32.33	3	94	84	On
13		J 296	18 Aug 92	948	N09:44.02	W093:27.12	3	7	17	On
13		J 299	18 Aug 92	1018	N09:46.24	W093:22.77	2	93	120	On
13		J 302	18 Aug 92	1150	N09:55.73	W093:15.54	2	87	10	On
13		M 304	6 Sep 92	1410	N07:56.54	W089:10.01	3	95	77	On
13	15	J 306	18 Aug 92	1508	N10:15.84	W092:58.61	3	87	10	On
13		J 307	18 Aug 92	1535	N10:19.63	W092:57.53	3	93	60	Off
13		M 308	7 Sep 92	605	N07:36.78	W089:22.93	4	97	72	On
13		J 308	18 Aug 92	1536	N10:19.70	W092:57.61	3	99	103	Off
13		J 309	18 Aug 92	1637	N10:24.52	W093:00.62	3	7	22	On
13		M 312	9 Sep 92	1801	N04:21.75	W092:40.52	5	74	1	On
13		J 313	18 Aug 92	1800	N10:25.52	W092:49.44	3	87	222	On
13		M 315	11 Sep 92	927	N02:42.61	W094:17.23	3	95	43	On
13		M 316	11 Sep 92	1222	N02:23.36	W094:38.98	4	95	102	On
13		J 318	19 Aug 92	720	N10:29.05	W092:32.16	2	7	28	On
13		J 320	19 Aug 92	840	N10:38.33	W092:27.58	3	93	93	On
13		M 321	12 Sep 92	1143	N02:05.22	W093:00.67	4	92	7	Off
13		J 321	19 Aug 92	932	N10:45.22	W092:25.36	2	73	87	On
13		J 322	19 Aug 92	1004	N10:46.98	W092:23.38	3	7	38	On
13		M 332	13 Sep 92	1009	N02:54.05	W092:09.49	5	91	13	On
13		M 337	14 Sep 92	937	N03:29.49	W091:37.09	4	91	8	Off
13		M 341	14 Sep 92	1549	N04:06.43	W090:56.56	4	55	65	On

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Efort
13		M 342	15 Sep 92	1406	N05:21.50	W089:43.12	4	19	33	On
13		J 345	23 Aug 92	1438	N11:44.36	W091:18.95	5	96	19	On
13		M 352	19 Sep 92	1738	N08:37.97	W089:32.72	2	97	150	On
13		M 354	20 Sep 92	1151	N10:08.17	W090:52.75	3	55	38	On
13		M 355	20 Sep 92	1254	N10:06.13	W091:00.70	4	74	125	On
13		M 366	21 Sep 92	1133	N08:31.92	W089:24.81	5	74	58	Off
13		M 370	22 Sep 92	727	N07:42.70	W088:42.67	3	95	19	On
13		M 371	22 Sep 92	748	N07:42.62	W088:40.50	3	92	5	Off
13		M 378	23 Sep 92	1253	N07:22.66	W087:32.87	3	55	55	On
13		M 383	24 Sep 92	742	N08:00.09	W087:00.56	3	55	188	On
13		M 391	25 Sep 92	1328	N07:56.59	W084:51.01	5	92	8	Off
13		J 393	2 Sep 92	644	N10:35.50	W090:26.63	3	96	162	On
13		M 397	26 Sep 92	1051	N05:45.81	W082:48.58	4	95	103	On
13		J 397	2 Sep 92	1612	N11:18.70	W089:43.93	3	7	43	On
13		J 398	2 Sep 92	1743	N11:26.01	W089:38.55	3	96	35	Off
13		J 401	4 Sep 92	630	N10:05.30	W087:03.40	5	73	50	Off
13		J 404	4 Sep 92	1306	N09:26.33	W086:23.95	2	93	50	On
13		M 421	6 Oct 92	1048	N05:45.50	W079:14.18	2	99	87	Off
13		J 424	6 Sep 92	755	N08:15.76	W084:51.25	3	73	35	On
13		M 425	6 Oct 92	1307	N05:31.31	W079:26.64	2	87	65	On
13		J 426	6 Sep 92	842	N08:09.57	W084:54.88	3	7	110	On
13		M 429	6 Oct 92	1605	N05:21.53	W079:45.82	3	7	15	On
13		J 429	6 Sep 92	1315	N07:44.64	W085:25.66	2	90	55	On
13		M 430	6 Oct 92	1730	N05:10.47	W079:53.86	4	94	9	On
13		M 431	7 Oct 92	814	N04:52.64	W080:07.92	4	94	37	On
13		M 433	7 Oct 92	929	N04:47.80	W080:11.70	3	96	130	On
13		J 435	7 Sep 92	922	N07:07.46	W085:59.62	5	73	67	On
13		J 436	7 Sep 92	1653	N06:22.40	W086:44.48	5	96	58	On
13		M 440	8 Oct 92	720	N04:06.67	W081:07.31	5	73	130	On
13		M 441	8 Oct 92	751	N04:10.20	W081:11.07	5	73	12	On
13		M 443	8 Oct 92	1720	N04:57.29	W081:56.37	4	94	105	On
13		M 448	11 Oct 92	1131	N03:34.57	W084:33.31	5	7	31	On
13		M 475	14 Oct 92	942	N07:36.76	W084:37.38	2	93	34	On
13		M 476	14 Oct 92	1010	N07:35.97	W084:34.39	3	94	58	On
13		M 486	16 Oct 92	805	N04:51.45	W086:07.55	5	7	47	On
13		M 489	17 Oct 92	1044	N02:27.74	W086:34.06	5	7	48	On
13		J 491	19 Sep 92	827	N03:23.27	W087:36.84	4	94	77	On
13		M 492	17 Oct 92	1428	N02:53.75	W086:04.99	4	7	82	On
13		J 492	19 Sep 92	1637	N04:16.52	W086:42.41	4	96	40	On
13		J 494	19 Sep 92	1738	N04:24.39	W086:45.53	4	7	14	On
13		J 495	21 Sep 92	709	N06:03.64	W084:56.24	4	87	47	On
13		M 504	19 Oct 92	726	N04:31.94	W084:29.09	5	7	63	On
13		M 509	19 Oct 92	1738	N05:30.87	W083:37.63	5	7	53	On
13		M 511	20 Oct 92	851	N05:46.19	W083:16.87	3	7	15	On
13		M 529	22 Oct 92	1656	N06:10.54	W079:13.29	4	102	55	On
13		J 551	5 Oct 92	900	N05:58.55	W077:58.01	5	74	12	Off
13		J 553	6 Oct 92	743	N05:00.14	W077:59.94	1	91	53	On
13		J 555	6 Oct 92	950	N04:48.84	W078:08.44	2	55	90	On
13		J 556	6 Oct 92	1026	N04:46.74	W078:12.54	2	74	62	On
13		M 560	27 Oct 92	1622	N02:36.24	W079:36.34	4	94	68	On
13		M 570	30 Oct 92	1609	N03:10.24	W081:53.48	5	7	32	On
13		J 571	7 Oct 92	1624	N03:13.91	W079:46.73	4	91	15	On
13		M 571	30 Oct 92	1729	N03:20.26	W081:44.16	5	94	22	On
13		J 581	8 Oct 92	1748	N02:08.67	W080:55.76	4	74	19	On
13		J 587	11 Oct 92	1431	N02:16.26	W084:43.33	5	74	1	On
13		J 589	12 Oct 92	839	N02:11.53	W087:09.99	4	91	33	On
13		J 591	12 Oct 92	1103	N02:25.54	W087:18.32	5	92	19	On
13		J 603	14 Oct 92	633	N05:37.87	W090:36.78	2	92	38	On
13		J 604	14 Oct 92	725	N05:44.79	W090:40.92	2	55	28	On
13		J 605	14 Oct 92	835	N05:53.06	W090:47.14	2	97	60	On



Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Effort
13		J 606	14 Oct 92	1006	N05:56.99	W090:48.46	2	55	31	On
13		J 613	14 Oct 92	1741	N06:34.29	W091:32.71	1	92	40	On
13		J 626	15 Oct 92	1117	N07:45.02	W092:47.05	2	91	267	Off
13		J 627	15 Oct 92	1335	N07:45.97	W092:49.26	2	55	102	On
13		J 629	15 Oct 92	1455	N07:52.99	W092:55.80	2	74	14	On
13		J 631	15 Oct 92	1553	N07:58.49	W093:02.78	2	91	140	On
13		J 637	16 Oct 92	836	N09:20.42	W094:26.32	4	97	68	On
13		J 641	16 Oct 92	1703	N10:17.02	W095:22.17	3	91	36	On
13		J 646	17 Oct 92	1322	N10:13.37	W096:44.38	5	95	63	On
13		J 649	18 Oct 92	756	N09:34.95	W097:22.68	3	92	45	On
13		J 652	18 Oct 92	1040	N09:16.25	W097:30.78	2	55	62	On
13		J 655	18 Oct 92	1408	N09:00.19	W097:48.02	2	95	44	On
13		J 656	18 Oct 92	1443	N08:59.56	W097:49.95	2	95	61	On
13		J 657	18 Oct 92	1529	N08:53.80	W097:53.50	2	55	25	On
13		J 659	18 Oct 92	1708	N08:51.87	W097:57.61	2	74	48	On
13		J 660	18 Oct 92	1728	N08:52.68	W097:59.84	2	91	43	On
13		J 662	19 Oct 92	757	N09:24.84	W099:34.37	2	74	28	On
13		J 665	19 Oct 92	1026	N09:41.10	W099:29.03	4	74	26	On
13		J 666	19 Oct 92	1137	N09:44.56	W099:20.60	3	74	10	On
13		J 668	19 Oct 92	1513	N10:00.72	W099:08.86	4	97	68	On
13		J 670	20 Oct 92	955	N11:28.77	W097:30.97	5	91	9	On
13		J 682	22 Oct 92	1409	N10:23.50	W098:31.96	3	74	2	Off
13		J 683	22 Oct 92	1447	N10:21.87	W098:34.45	3	55	51	On
13		J 684	22 Oct 92	1521	N10:20.29	W098:37.44	3	55	43	On
13		J 742	28 Oct 92	1243	N21:19.58	W106:37.27	1	99	44	Off
13		J 744	28 Oct 92	1324	N21:23.06	W106:38.46	1	4	28	Off
Steno bredanensis										
15		M 98	4 Aug 92	1318	N17:06.14	W101:09.32	4	55	4	Off
15		M 107	5 Aug 92	1737	N15:23.13	W096:36.67	1	95	9	Off
15		M 141	8 Aug 92	1556	N11:26.42	W087:37.32	4	91	8	On
15		J 153	5 Aug 92	1757	N16:38.93	W100:05.63	1	96	6	Off
15		J 154	5 Aug 92	1839	N16:37.53	W100:02.27	1	98	3	Off
15		J 160	6 Aug 92	1052	N15:45.25	W097:38.42	2	73	4	Off
15	02	J 170	7 Aug 92	1645	N14:54.99	W093:38.00	2	87	15	Off
15	18	M 193	11 Aug 92	1654	N08:19.26	W090:30.39	2	91	38	On
15		M 195	12 Aug 92	1341	N07:49.99	W091:02.98	4	55	12	On
15		M 213	20 Aug 92	1222	N07:20.71	W093:43.66	3	95	20	On
15		J 284	17 Aug 92	706	N08:10.80	W094:50.24	5	4	10	Off
15		J 289	17 Aug 92	1409	N08:56.06	W094:07.71	4	94	9	On
15	13	J 306	18 Aug 92	1508	N10:15.84	W092:58.61	3	87	10	On
15	18	J 331	21 Aug 92	1734	N10:00.92	W091:00.78	5	7	73	On
15		J 342	22 Aug 92	1151	N09:22.88	W090:34.28	3	73	27	Off
15		J 355	24 Aug 92	1358	N12:49.94	W090:11.74	1	7	4	On
15		M 374	22 Sep 92	945	N07:34.85	W088:29.36	3	74	9	On
15		J 396	2 Sep 92	1314	N11:09.76	W089:53.18	4	4	10	Off
15		J 434	7 Sep 92	807	N07:13.97	W085:53.95	4	73	23	On
15		M 444	9 Oct 92	802	N04:48.63	W082:12.20	4	7	14	Off
15		J 479	17 Sep 92	834	N02:26.66	W091:29.27	4	73	39	On
15		J 499	21 Sep 92	1351	N06:41.11	W084:27.39	3	94	22	Off
15		J 502	22 Sep 92	547	N06:46.52	W084:13.64	3	73	28	On
15	18	M 506	19 Oct 92	1211	N04:59.83	W084:03.19	5	73	9	On
15		J 524	24 Sep 92	1316	N09:07.37	W084:25.18	3	4	6	Off
15		M 558	27 Oct 92	1139	N02:08.85	W079:06.57	4	93	11	Off
15	31	M 559	27 Oct 92	1429	N02:27.50	W079:28.87	4	87	240	On
15		J 560	6 Oct 92	1454	N04:22.14	W078:36.09	3	97	34	On
15	18	J 561	7 Oct 92	725	N03:59.88	W079:00.05	3	34	41	On
15		J 565	7 Oct 92	1133	N03:37.53	W079:24.76	4	95	9	On
15		M 566	29 Oct 92	1132	N03:20.75	W081:40.50	5	7	14	On
15	18	J 583	10 Oct 92	1028	N02:16.55	W083:16.61	5	55	50	On

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Ef-fort
15		J 635	15 Oct 92	1726	N08:08.61	W093:10.73	2	4	12	Off
15		J 678	21 Oct 92	1649	N11:09.87	W095:46.44	5	92	10	On
15	02	J 699	25 Oct 92	652	N14:49.98	W099:37.72	3	74	40	Off
15		J 757	29 Oct 92	901	N22:36.55	W109:13.03	2	55	5	Off
Delphinus delphis (long-beak)										
16		M 1	28 Jul 92	1911	N32:34.44	W117:22.32	3	74	62	Off
16		J 3	29 Jul 92	1055	N29:37.07	W115:49.77	3	87	27	Off
16		M 4	29 Jul 92	612	N30:34.80	W116:19.92	3	97	29	Off
16		M 5	29 Jul 92	621	N30:33.48	W116:18.72	3	97	360	Off
16		M 9	29 Jul 92	915	N30:12.72	W116:06.30	2	55	9	Off
16		M 10	29 Jul 92	1031	N30:00.00	W116:00.36	2	97	48	Off
16		M 11	29 Jul 92	1053	N29:59.40	W115:59.64	2	91	28	Off
16		M 12	29 Jul 92	1113	N29:56.34	W115:59.04	2	74	63	Off
16		M 16	29 Jul 92	1754	N29:16.92	W115:15.06	3	91	40	Off
16		J 18	29 Jul 92	1702	N29:10.31	W115:13.54	4	99	157	Off
16		M 18	30 Jul 92	618	N27:44.34	W115:16.14	2	95	940	Off
16	22	M 19	30 Jul 92	901	N27:27.78	W114:55.20	2	91	980	Off
16		M 22	30 Jul 92	1111	N27:20.28	W114:49.50	2	92	210	Off
16		M 24	30 Jul 92	1210	N27:17.70	W114:42.78	1	91	180	Off
16		M 28	30 Jul 92	1252	N27:16.14	W114:39.96	1	74	277	Off
16		J 29	29 Jul 92	1909	N29:00.19	W114:58.40	4	87	460	Off
16		J 32	30 Jul 92	743	N28:38.67	W115:00.69	2	94	46	Off
16		M 33	30 Jul 92	1511	N27:08.88	W114:31.98	2	55	658	Off
16		M 34	30 Jul 92	1551	N27:05.64	W114:29.04	2	95	11	Off
16		J 35	30 Jul 92	1054	N28:18.49	W115:22.06	1	96	220	Off
16		M 35	30 Jul 92	1619	N27:05.70	W114:28.56	2	91	118	Off
16		M 36	30 Jul 92	1655	N27:03.00	W114:26.28	3	91	6	Off
16		M 38	31 Jul 92	639	N26:00.54	W112:29.76	1	74	82	Off
16		J 38	30 Jul 92	1448	N27:55.41	W115:20.72	4	96	39	Off
16		M 39	31 Jul 92	747	N25:50.52	W112:26.10	1	97	67	Off
16		J 40	30 Jul 92	1655	N27:39.19	W115:14.75	4	73	28	Off
16		M 42	31 Jul 92	1014	N25:34.08	W112:20.70	1	91	20	Off
16		J 45	31 Jul 92	1054	N27:02.56	W114:28.47	1	73	88	Off
16		M 45	31 Jul 92	1334	N25:07.74	W112:20.76	3	95	39	Off
16		J 46	31 Jul 92	1142	N27:01.92	W114:26.47	2	93	83	Off
16		M 46	31 Jul 92	1452	N24:57.36	W112:23.70	3	97	7	Off
16		J 47	31 Jul 92	1153	N27:02.62	W114:25.86	5	87	205	Off
16		M 49	31 Jul 92	1559	N24:49.86	W112:25.38	4	74	215	Off
16		J 50	31 Jul 92	1535	N26:45.66	W114:09.43	4	99	44	Off
16		J 53	31 Jul 92	1644	N26:42.27	W114:05.00	4	7	40	Off
16		J 58	1 Aug 92	642	N25:07.89	W112:48.53	4	4	27	Off
16		J 64	1 Aug 92	815	N25:00.24	W112:40.41	4	73	3	Off
16		J 67	1 Aug 92	901	N24:55.46	W112:39.42	3	93	33	Off
16		J 69	1 Aug 92	1017	N24:49.21	W112:34.79	3	7	31	Off
16		J 77	1 Aug 92	1153	N24:38.48	W112:24.47	4	96	15	Off
16		J 78	1 Aug 92	1216	N24:36.60	W112:21.08	4	93	44	Off
16		J 81	1 Aug 92	1319	N24:29.78	W112:15.49	3	93	73	Off
16		J 84	1 Aug 92	1514	N24:18.18	W112:03.05	4	96	19	Off
16		J 85	1 Aug 92	1530	N24:16.91	W112:01.63	4	96	30	Off
16		J 88	1 Aug 92	1559	N24:15.15	W111:57.30	4	7	30	Off
16		J 765	29 Oct 92	1423	N22:50.89	W110:02.84	2	91	32	Off
16		J 767	29 Oct 92	1442	N22:53.48	W110:04.10	2	97	105	Off
16	17	J 769	29 Oct 92	1611	N22:59.90	W110:11.36	2	95	167	Off
16		J 771	30 Oct 92	744	N24:17.72	W112:00.69	4	95	43	Off
16		J 778	1 Nov 92	716	N29:37.18	W115:50.25	3	55	44	Off
16		J 779	1 Nov 92	751	N29:41.42	W115:52.41	3	95	70	Off
16		J 780	1 Nov 92	953	N29:55.40	W116:00.03	2	74	30	Off
16		J 784	1 Nov 92	1337	N30:17.48	W116:10.08	3	74	137	Off

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Effort
Delphinus delphis (short-beak)										
17		J 125	4 Aug 92	729	N19:04.84	W104:57.73	3	73	80	Off
17		J 133	4 Aug 92	1312	N18:36.62	W104:18.68	1	7	146	Off
17		J 139	4 Aug 92	1701	N18:17.54	W103:51.19	4	96	33	Off
17		J 140	4 Aug 92	1748	N18:13.84	W103:44.81	3	93	113	Off
17		J 143	5 Aug 92	1158	N17:01.02	W100:56.79	2	94	130	Off
17		M 145	9 Aug 92	1220	N10:38.24	W088:26.06	5	74	433	On
17		J 145	5 Aug 92	1524	N16:46.46	W100:26.89	3	7	9	Off
17		M 157	10 Aug 92	809	N09:57.76	W089:04.33	2	92	537	On
17		M 161	10 Aug 92	1109	N09:41.56	W089:15.71	2	97	147	On
17		M 165	10 Aug 92	1303	N09:29.34	W089:27.68	2	55	87	On
17		M 173	10 Aug 92	1732	N09:24.01	W089:35.54	0	74	213	On
17		M 177	11 Aug 92	724	N09:19.31	W089:49.90	2	92	6	On
17		M 178	11 Aug 92	746	N09:18.15	W089:51.43	2	95	43	On
17		J 178	8 Aug 92	1443	N13:24.86	W091:35.27	2	73	135	On
17		M 183	11 Aug 92	1015	N08:59.93	W089:54.87	2	95	53	On
17		M 184	11 Aug 92	1019	N08:59.97	W089:55.48	2	95	393	On
17		M 187	11 Aug 92	1105	N08:56.16	W089:59.69	2	95	127	On
17		M 190	11 Aug 92	1310	N08:40.36	W090:08.16	1	74	328	On
17		J 191	10 Aug 92	618	N12:01.86	W092:58.26	2	87	92	On
17		M 223	22 Aug 92	714	N08:30.37	W092:30.61	2	74	130	On
17		J 223	11 Aug 92	923	N10:29.75	W094:23.50	2	73	91	On
17		M 227	22 Aug 92	1110	N08:49.97	W092:04.26	4	97	150	On
17	02	J 227	11 Aug 92	1104	N10:20.30	W094:28.85	2	7	146	On
17		J 228	11 Aug 92	1206	N10:16.39	W094:38.46	3	93	104	On
17		J 232	11 Aug 92	1629	N10:07.33	W095:01.02	2	93	180	On
17		M 235	23 Aug 92	641	N09:27.63	W091:33.36	4	55	167	On
17		J 240	12 Aug 92	735	N09:46.45	W095:13.08	4	87	48	On
17		J 241	12 Aug 92	830	N09:41.98	W095:20.86	4	94	71	On
17		J 242	12 Aug 92	912	N09:38.94	W095:26.71	3	7	108	On
17		M 266	1 Sep 92	1540	N12:08.53	W089:01.01	3	74	332	On
17		J 280	16 Aug 92	1008	N07:13.60	W095:45.70	4	87	106	On
17		M 281	3 Sep 92	1304	N10:34.43	W086:28.45	5	92	13	On
17		M 283	3 Sep 92	1536	N10:35.95	W086:27.81	5	74	52	On
17		J 283	16 Aug 92	1803	N08:04.14	W094:56.75	4	73	158	On
17		J 285	17 Aug 92	759	N08:16.39	W094:44.94	5	94	68	On
17		J 287	17 Aug 92	1300	N08:48.29	W094:12.58	4	93	63	On
17		J 288	17 Aug 92	1337	N08:53.24	W094:11.58	4	73	45	On
17		M 288	4 Sep 92	1430	N10:08.25	W087:09.50	4	55	383	On
17		M 290	5 Sep 92	607	N09:53.81	W087:02.56	2	74	177	On
17		M 293	5 Sep 92	943	N09:31.41	W087:22.01	2	95	237	On
17		J 293	18 Aug 92	648	N09:20.44	W093:40.73	3	93	42	On
17		M 294	5 Sep 92	1053	N09:25.78	W087:29.79	2	97	267	On
17		J 294	18 Aug 92	832	N09:33.02	W093:34.04	3	94	48	On
17		J 301	18 Aug 92	1058	N09:50.69	W093:23.03	2	73	110	On
17		J 305	18 Aug 92	1412	N10:07.44	W093:00.85	3	73	141	On
17		M 305	6 Sep 92	1508	N07:55.29	W089:14.48	3	95	72	On
17		M 306	6 Sep 92	1556	N07:51.51	W089:14.94	3	55	75	On
17		J 315	19 Aug 92	614	N10:21.88	W092:39.64	2	94	62	On
17		J 317	19 Aug 92	653	N10:25.69	W092:34.94	2	7	81	On
17		J 324	19 Aug 92	1248	N10:49.19	W092:20.73	3	73	235	On
17		J 328	20 Aug 92	1333	N11:54.71	W092:54.66	4	94	141	On
17		J 334	22 Aug 92	726	N09:06.36	W090:04.77	4	73	375	On
17		J 337	22 Aug 92	849	N09:11.88	W090:15.64	4	94	92	On
17		J 339	22 Aug 92	949	N09:14.08	W090:21.47	3	96	65	On
17		J 341	22 Aug 92	1039	N09:19.16	W090:24.86	3	87	273	On
17		M 351	19 Sep 92	1657	N08:33.80	W089:28.61	3	55	35	On
17		J 353	24 Aug 92	1245	N12:43.46	W090:17.92	2	96	170	On
17		M 356	20 Sep 92	1339	N10:03.44	W091:05.03	4	97	110	Off
17		J 357	24 Aug 92	1501	N12:55.53	W090:04.68	1	93	67	On

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Effort
17		M 357	20 Sep 92	1355	N10:02.28	W091:06.20	3	97	147	On
17		M 358	20 Sep 92	1429	N09:59.17	W091:05.25	3	95	355	On
17		M 359	20 Sep 92	1440	N09:59.31	W091:07.15	3	102	45	Off
17		M 365	21 Sep 92	752	N08:53.93	W089:51.03	3	91	78	On
17		M 368	21 Sep 92	1714	N07:56.99	W088:45.07	4	92	138	Off
17		J 384	1 Sep 92	712	N12:28.52	W089:17.47	4	93	2	On
17		M 385	24 Sep 92	1226	N08:16.03	W086:48.94	4	74	87	On
17		J 388	1 Sep 92	1448	N11:34.96	W089:25.20	5	7	253	On
17		M 390	24 Sep 92	1630	N08:38.57	W086:22.59	2	91	28	On
17		J 391	1 Sep 92	1714	N11:22.62	W089:33.39	4	94	90	On
17		M 396	26 Sep 92	1020	N05:49.10	W082:50.93	4	55	90	On
17		M 400	27 Sep 92	922	N06:21.19	W080:36.94	4	92	110	On
17		M 401	27 Sep 92	1033	N06:28.80	W080:31.11	3	74	410	On
17		M 402	27 Sep 92	1222	N06:37.86	W080:25.64	4	92	200	On
17		J 408	4 Sep 92	1615	N09:09.59	W086:03.87	3	7	107	On
17		J 420	5 Sep 92	1606	N08:32.38	W084:29.53	3	73	120	On
17		J 421	5 Sep 92	1636	N08:30.60	W084:32.04	3	90	137	On
17		J 422	6 Sep 92	548	N08:29.84	W084:39.57	2	94	45	Off
17		J 443	10 Sep 92	541	N09:36.52	W085:23.55	2	96	152	Off
17		J 446	10 Sep 92	621	N09:31.41	W085:26.27	2	73	283	On
17		M 474	14 Oct 92	834	N07:44.68	W084:43.77	2	7	72	On
17		M 479	14 Oct 92	1141	N07:30.59	W084:24.88	2	94	119	On
17		J 503	22 Sep 92	719	N06:55.43	W084:05.45	3	73	67	On
17		J 505	22 Sep 92	1117	N07:17.25	W083:39.85	3	94	39	On
17		J 507	22 Sep 92	1511	N07:31.54	W083:25.20	4	94	80	Off
17		M 514	20 Oct 92	1317	N06:08.98	W082:58.53	4	93	67	On
17		M 515	20 Oct 92	1502	N06:20.63	W082:48.28	3	94	155	On
17		M 516	21 Oct 92	728	N06:39.17	W082:22.90	4	93	130	On
17		J 534	28 Sep 92	729	N07:16.59	W080:01.99	4	73	43	Off
17		J 540	28 Sep 92	1106	N07:25.54	W079:44.91	4	4	56	Off
17		J 552	5 Oct 92	1721	N05:03.47	W077:56.54	2	91	188	On
17		M 576	1 Nov 92	1614	N07:27.96	W079:29.88	3	7	135	On
17		J 618	15 Oct 92	732	N07:24.26	W092:27.37	3	97	583	On
17		J 619	15 Oct 92	828	N07:24.69	W092:34.19	3	55	231	On
17		J 620	15 Oct 92	925	N07:31.28	W092:36.37	2	55	121	On
17		J 622	15 Oct 92	1020	N07:36.88	W092:43.07	2	74	290	On
17		J 632	15 Oct 92	1616	N08:00.88	W093:05.86	2	92	87	On
17		J 633	15 Oct 92	1706	N08:05.44	W093:10.69	2	55	73	On
17		J 636	16 Oct 92	705	N09:12.87	W094:13.53	3	92	145	On
17		J 638	16 Oct 92	926	N09:26.06	W094:33.31	3	74	143	On
17		J 639	16 Oct 92	1036	N09:32.92	W094:43.29	4	95	171	On
17		J 709	26 Oct 92	1022	N17:11.72	W101:35.00	2	74	110	Off
17		J 710	26 Oct 92	1121	N17:11.27	W101:38.85	1	55	303	Off
17		J 717	27 Oct 92	754	N18:32.80	W104:03.39	2	74	140	Off
17	02	J 732	28 Oct 92	643	N20:54.52	W106:11.46	1	55	164	Off
17		J 734	28 Oct 92	750	N21:01.79	W106:13.72	0	55	177	Off
17		J 739	28 Oct 92	1122	N21:12.33	W106:27.20	1	55	353	Off
17	16	J 769	29 Oct 92	1611	N22:59.90	W110:11.36	2	95	167	Off
17		J 781	1 Nov 92	1059	N30:02.16	W116:03.68	2	95	300	Off
Tursiops truncatus										
18	77	M 53	31 Jul 92	1824	N24:34.68	W112:19.44	3	91	7	Off
18		M 60	1 Aug 92	1528	N22:36.85	W109:54.81	2	55	5	Off
18		J 65	1 Aug 92	824	N24:58.95	W112:41.14	4	73	9	Off
18		M 70	2 Aug 92	1005	N21:58.43	W106:29.15	2	91	8	Off
18		J 71	1 Aug 92	1050	N24:46.46	W112:31.74	4	96	12	Off
18	33	M 72	2 Aug 92	1125	N21:51.90	W106:21.22	2	74	21	Off
18		J 72	1 Aug 92	1110	N24:43.81	W112:30.24	4	96	8	Off
18		J 73	1 Aug 92	1129	N24:41.39	W112:27.58	4	4	3	Off
18		J 74	1 Aug 92	1139	N24:40.16	W112:26.26	4	94	5	Off

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Effort
18		J 75	1 Aug 92	1148	N24:39.05	W112:25.06	4	4	1	Off
18		J 76	1 Aug 92	1150	N24:38.79	W112:24.78	4	4	4	Off
18	21	M 76	3 Aug 92	1023	N19:05.20	W105:03.13	2	92	28	Off
18		J 79	1 Aug 92	1300	N24:32.74	W112:16.69	3	73	6	Off
18		J 80	1 Aug 92	1314	N24:30.56	W112:15.80	3	87	9	Off
18		M 84	3 Aug 92	1553	N18:43.88	W104:29.68	4	55	7	Off
18		J 89	1 Aug 92	1743	N24:06.33	W111:43.45	4	7	11	Off
18		M 97	4 Aug 92	1219	N17:08.05	W101:12.62	3	81	9	Off
18		J 103	2 Aug 92	1234	N22:39.05	W109:06.41	1	7	32	Off
18		M 109	6 Aug 92	611	N15:41.86	W094:13.39	5	74	2	Off
18	46	J 113	2 Aug 92	1453	N22:44.14	W108:54.62	2	73	53	Off
18		M 116	7 Aug 92	705	N13:20.52	W090:58.66	2	55	33	Off
18		M 119	7 Aug 92	846	N13:17.84	W090:44.26	2	74	3	Off
18		J 120	3 Aug 92	1348	N21:36.06	W105:50.36	1	93	10	Off
18		M 120	7 Aug 92	908	N13:16.43	W090:40.66	2	74	25	Off
18		M 122	7 Aug 92	1015	N13:10.28	W090:31.44	2	55	50	Off
18		M 126	7 Aug 92	1219	N13:07.52	W090:15.22	2	97	7	Off
18		M 140	8 Aug 92	1437	N11:34.17	W087:30.06	4	97	8	On
18		J 150	5 Aug 92	1654	N16:42.37	W100:14.26	2	73	8	Off
18		M 153	9 Aug 92	1806	N10:11.91	W088:49.01	3	55	3	On
18		M 158	10 Aug 92	904	N09:53.53	W089:10.03	2	92	17	On
18		J 173	8 Aug 92	1034	N13:49.70	W091:12.22	2	73	3	Off
18		J 174	8 Aug 92	1227	N13:36.66	W091:22.45	3	7	15	Off
18		J 177	8 Aug 92	1351	N13:29.39	W091:30.06	3	7	10	On
18		J 179	8 Aug 92	1525	N13:21.29	W091:37.82	2	73	54	On
18		J 180	8 Aug 92	1547	N13:18.31	W091:38.84	1	93	6	On
18		M 181	11 Aug 92	856	N09:09.28	W089:54.73	2	91	45	On
18		J 181	8 Aug 92	1604	N13:18.15	W091:41.07	1	94	1	On
18		J 186	9 Aug 92	715	N12:59.24	W091:59.33	5	94	19	On
18		J 188	9 Aug 92	810	N12:55.00	W092:06.51	4	73	1	On
18	36	M 191	11 Aug 92	1357	N08:35.13	W090:14.04	1	91	95	On
18		J 192	10 Aug 92	628	N12:02.25	W093:00.07	2	4	2	Off
18	15	M 193	11 Aug 92	1654	N08:19.26	W090:30.39	2	91	38	On
18		J 200	10 Aug 92	1137	N11:32.66	W093:28.11	2	73	7	On
18		J 205	10 Aug 92	1434	N11:21.93	W093:44.37	1	73	10	Off
18	02 10	J 209	10 Aug 92	1522	N11:19.52	W093:51.74	2	93	240	On
18	36	J 222	11 Aug 92	827	N10:34.93	W094:19.01	2	73	15	On
18		M 246	25 Aug 92	633	N12:42.00	W089:27.84	2	92	29	On
18		M 247	25 Aug 92	702	N12:46.40	W089:30.85	2	95	92	On
18		M 248	25 Aug 92	744	N12:52.57	W089:32.89	2	92	8	On
18		M 250	25 Aug 92	949	N13:01.13	W089:38.79	1	91	10	On
18		J 252	12 Aug 92	1426	N09:06.79	W095:59.20	2	73	7	Off
18		M 256	1 Sep 92	835	N12:36.70	W088:13.59	4	92	9	On
18		M 257	1 Sep 92	929	N12:32.60	W088:19.30	4	92	14	On
18		M 258	1 Sep 92	955	N12:30.15	W088:23.24	4	55	44	On
18		M 259	1 Sep 92	1002	N12:30.15	W088:24.47	4	101	3	Off
18		M 263	1 Sep 92	1150	N12:23.92	W088:38.47	3	19	12	Off
18		M 265	1 Sep 92	1406	N12:14.87	W088:53.66	4	74	38	On
18	77	M 269	1 Sep 92	1737	N11:57.52	W088:56.50	3	97	5	Off
18	36	J 277	16 Aug 92	918	N07:07.71	W095:49.90	5	94	12	On
18		J 279	16 Aug 92	933	N07:08.74	W095:48.82	5	96	10	On
18		M 284	3 Sep 92	1611	N10:32.59	W086:30.65	5	55	3	On
18	36	M 287	4 Sep 92	936	N10:18.81	W086:48.47	5	74	12	On
18	36	M 291	5 Sep 92	650	N09:50.34	W087:07.23	2	97	23	On
18		J 292	17 Aug 92	1650	N09:08.17	W093:58.10	4	73	4	On
18		M 297	5 Sep 92	1736	N08:43.99	W088:06.36	2	74	18	On
18		M 299	6 Sep 92	734	N08:30.03	W088:24.12	3	95	15	On
18		M 309	7 Sep 92	833	N07:27.18	W089:35.71	5	55	35	On
18		J 330	21 Aug 92	1649	N10:05.37	W091:06.01	5	73	3	On
18	15	J 331	21 Aug 92	1734	N10:00.92	W091:00.78	5	7	73	On

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Ef-fort
18		J 344	23 Aug 92	1113	N11:25.63	W091:37.17	5	94	14	On
18		J 348	23 Aug 92	1745	N12:04.09	W091:05.94	5	94	9	On
18	21	J 352	24 Aug 92	1137	N12:38.98	W090:18.92	1	73	127	On
18		J 356	24 Aug 92	1420	N12:51.77	W090:08.81	1	73	2	On
18		J 358	24 Aug 92	1534	N12:57.84	W090:02.18	1	93	48	On
18		J 361	24 Aug 92	1726	N13:08.68	W089:50.96	2	94	1	On
18		M 364	21 Sep 92	724	N08:56.74	W089:53.80	3	91	7	On
18		J 365	25 Aug 92	641	N13:22.03	W089:40.50	1	4	7	Off
18		J 370	25 Aug 92	850	N13:06.02	W089:54.72	3	4	8	Off
18		J 371	25 Aug 92	855	N13:05.34	W089:55.35	3	87	2	Off
18		M 372	22 Sep 92	759	N07:41.69	W088:38.74	3	19	4	Off
18	46	M 375	22 Sep 92	1302	N07:09.12	W088:08.75	4	97	36	On
18		J 375	25 Aug 92	1421	N12:58.33	W089:58.23	2	4	5	Off
18	36	M 376	22 Sep 92	1358	N07:04.88	W088:03.99	4	91	63	On
18		J 379	31 Aug 92	1435	N13:30.38	W090:19.30	4	94	2	On
18	36	M 380	23 Sep 92	1609	N07:37.34	W087:23.92	1	92	14	On
18	36	M 381	23 Sep 92	1641	N07:39.34	W087:20.33	2	92	18	On
18		J 383	1 Sep 92	613	N12:36.75	W089:22.29	4	87	12	On
18		J 385	1 Sep 92	729	N12:26.34	W089:16.16	4	7	3	On
18		J 386	1 Sep 92	731	N12:26.06	W089:16.11	4	87	26	On
18		M 388	24 Sep 92	1507	N08:32.68	W086:32.10	3	92	18	On
18		M 392	25 Sep 92	1623	N07:35.97	W084:35.17	4	92	5	Off
18		J 399	2 Sep 92	1815	N11:28.71	W089:35.22	3	73	3	Off
18	06	M 407	28 Sep 92	1026	N07:55.60	W079:04.83	3	55	42	On
18		J 411	5 Sep 92	1001	N09:03.56	W084:06.47	1	80	7	On
18		M 413	4 Oct 92	1346	N08:30.31	W079:24.45	3	7	12	Off
18		M 416	4 Oct 92	1556	N08:13.74	W079:12.39	4	96	1	Off
18	36	J 417	5 Sep 92	1427	N08:38.69	W084:25.00	2	7	17	On
18	21	M 420	6 Oct 92	757	N05:56.05	W079:03.76	4	96	3	On
18		M 422	6 Oct 92	1129	N05:42.77	W079:17.12	2	94	12	On
18	36	J 430	6 Sep 92	1316	N07:44.46	W085:25.92	2	90	13	Off
18	21	J 432	6 Sep 92	1504	N07:33.94	W085:32.24	3	99	30	Off
18	36	J 437	8 Sep 92	632	N08:02.05	W085:49.79	5	73	23	Off
18		J 439	8 Sep 92	1325	N09:06.22	W085:12.49	3	4	5	Off
18		J 442	9 Sep 92	1724	N09:37.98	W085:22.05	4	73	8	Off
18		J 448	10 Sep 92	847	N09:21.30	W085:34.48	0	87	96	On
18	36	M 452	12 Oct 92	1433	N04:59.18	W086:04.40	2	94	11	On
18	36	J 454	10 Sep 92	1411	N09:05.24	W085:54.03	3	73	33	On
18		J 455	10 Sep 92	1452	N09:02.42	W085:57.75	3	96	32	On
18		J 456	10 Sep 92	1456	N09:01.87	W085:58.25	3	96	3	On
18		J 458	10 Sep 92	1538	N08:57.65	W086:03.34	3	73	30	On
18	36	J 461	10 Sep 92	1640	N08:52.64	W086:09.74	3	93	21	On
18	36	M 464	13 Oct 92	1205	N08:56.52	W085:04.31	2	96	11	Off
18	21 36	J 477	17 Sep 92	705	N02:38.67	W091:38.61	4	87	23	On
18	15	M 506	19 Oct 92	1211	N04:59.83	W084:03.19	5	73	9	On
18	02	J 516	23 Sep 92	1350	N08:23.89	W083:41.22	3	94	8	Off
18		J 519	23 Sep 92	1610	N08:33.80	W083:59.39	3	73	63	Off
18		J 520	23 Sep 92	1653	N08:37.38	W084:04.66	3	96	25	Off
18		M 521	21 Oct 92	1610	N07:15.83	W081:30.71	4	73	7	On
18		J 523	24 Sep 92	1116	N09:02.74	W084:19.16	2	94	35	Off
18		M 523	22 Oct 92	622	N07:14.09	W080:15.74	2	73	2	On
18		J 526	24 Sep 92	1813	N09:28.79	W085:02.54	4	73	1	Off
18		J 532	27 Sep 92	1223	N05:37.17	W081:33.09	4	96	28	On
18	90 06	J 537	28 Sep 92	925	N07:18.92	W079:51.47	4	7	94	Off
18		J 539	28 Sep 92	1040	N07:22.85	W079:45.82	4	94	8	Off
18	90	J 542	28 Sep 92	1514	N08:01.53	W079:34.36	4	96	30	Off
18		J 543	28 Sep 92	1550	N08:04.00	W079:31.88	4	94	2	Off
18		J 544	4 Oct 92	1217	N08:30.38	W079:23.27	4	92	7	Off
18		J 549	4 Oct 92	1717	N07:46.77	W079:09.36	2	95	12	Off
18	15	J 561	7 Oct 92	725	N03:59.88	W079:00.05	3	34	41	On

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Ef-fort
18	46	J 575	8 Oct 92	1614	N02:13.75	W080:46.99	4	95	8	On
18	36	M 575	1 Nov 92	1523	N07:23.50	W079:36.51	4	73	51	On
18	46	J 576	8 Oct 92	1618	N02:13.34	W080:47.39	4	95	9	On
18	36	J 578	8 Oct 92	1659	N02:12.75	W080:50.29	4	55	24	On
18	15	J 583	10 Oct 92	1028	N02:16.55	W083:16.61	5	55	50	On
18	36	J 590	12 Oct 92	1008	N02:20.83	W087:16.64	4	55	21	On
18		J 611	14 Oct 92	1546	N06:24.72	W091:21.73	1	55	20	On
18		J 612	14 Oct 92	1617	N06:28.38	W091:24.15	1	91	20	On
18		J 614	15 Oct 92	607	N07:21.08	W092:20.89	2	97	19	On
18	36	J 615	15 Oct 92	624	N07:23.32	W092:21.14	2	74	38	On
18	36	J 616	15 Oct 92	706	N07:24.99	W092:24.43	3	97	62	On
18		J 669	19 Oct 92	1652	N10:12.59	W099:00.07	3	55	21	On
18	02 10	J 676	21 Oct 92	1358	N11:27.44	W095:29.89	4	55	192	On
18	21	J 679	22 Oct 92	720	N11:04.18	W097:53.86	4	92	10	On
18		J 690	23 Oct 92	1447	N11:44.41	W098:56.37	3	74	4	On
18		J 693	24 Oct 92	1117	N12:26.78	W098:14.76	2	92	34	On
18	21	J 711	26 Oct 92	1223	N17:15.64	W101:43.92	1	74	113	Off
18		J 721	27 Oct 92	952	N18:41.59	W104:16.53	3	55	1	Off
18		J 725	27 Oct 92	1258	N18:55.85	W104:43.74	3	92	15	Off
18		J 726	27 Oct 92	1349	N18:59.93	W104:50.33	3	103	4	Off
18		J 728	27 Oct 92	1559	N19:10.79	W105:05.49	4	91	12	Off
18		J 751	28 Oct 92	1708	N21:42.81	W106:48.05	2	97	4	Off
18		J 754	29 Oct 92	808	N22:34.12	W109:03.48	2	92	1	Off
18		J 762	29 Oct 92	1257	N22:45.49	W109:50.45	2	95	2	Off
18		J 763	29 Oct 92	1318	N22:46.52	W109:53.07	2	55	40	Off
18		J 764	29 Oct 92	1340	N22:47.53	W109:56.42	2	95	23	Off
18		J 772	30 Oct 92	941	N24:29.61	W112:14.73	5	74	4	Off
18		J 773	30 Oct 92	1005	N24:30.77	W112:17.45	5	92	2	Off
18		J 774	30 Oct 92	1100	N24:36.84	W112:23.87	5	55	15	Off
18	36	J 776	31 Oct 92	805	N26:46.56	W114:32.03	4	55	26	Off
18	36	J 777	31 Oct 92	821	N26:48.52	W114:33.98	4	4	10	Off
Grampus griseus										
21		J 55	31 Jul 92	1739	N26:37.15	W114:01.83	5	73	6	Off
21		M 75	3 Aug 92	1005	N19:06.13	W105:04.85	2	95	4	Off
21	18	M 76	3 Aug 92	1023	N19:05.20	W105:03.13	2	92	28	Off
21	77	M 86	3 Aug 92	1810	N18:33.42	W104:13.38	4	95	8	Off
21		M 87	4 Aug 92	537	N17:30.23	W102:04.87	2	74	6	Off
21		M 101	5 Aug 92	717	N15:54.12	W098:15.13	3	55	6	Off
21		J 106	2 Aug 92	1350	N22:42.69	W108:58.44	2	56	7	Off
21		J 134	4 Aug 92	1339	N18:35.83	W104:15.37	2	7	5	Off
21		M 139	8 Aug 92	1407	N11:35.17	W087:30.00	4	74	10	On
21		J 142	5 Aug 92	1127	N17:02.99	W101:01.80	2	94	6	Off
21		J 144	5 Aug 92	1458	N16:48.65	W100:29.24	3	7	11	Off
21		J 151	5 Aug 92	1720	N16:41.35	W100:11.71	2	93	7	Off
21		J 156	6 Aug 92	649	N15:55.59	W098:17.44	3	4	7	Off
21		J 158	6 Aug 92	845	N15:51.56	W097:59.19	3	7	8	Off
21		J 159	6 Aug 92	1039	N15:46.27	W097:40.15	2	73	4	Off
21		J 183	8 Aug 92	1628	N13:17.08	W091:42.29	1	4	1	Off
21		M 230	22 Aug 92	1256	N08:57.30	W091:51.00	4	92	5	On
21		J 263	14 Aug 92	1817	N06:10.65	W097:36.83	5	4	5	Off
21		J 265	15 Aug 92	1031	N06:10.16	W096:49.96	5	94	4	On
21		M 272	2 Sep 92	1012	N10:38.80	W087:42.32	5	92	7	On
21		M 317	11 Sep 92	1256	N02:19.14	W094:39.70	4	92	10	On
21		M 350	18 Sep 92	1000	N06:09.88	W087:05.54	5	102	6	On
21	18	J 352	24 Aug 92	1137	N12:38.98	W090:18.92	1	73	127	On
21		M 361	20 Sep 92	1749	N09:50.64	W091:16.28	2	95	6	On
21		M 387	24 Sep 92	1350	N08:24.00	W086:39.63	3	101	8	On
21		J 400	3 Sep 92	1516	N11:07.93	W088:08.64	5	87	7	On
21		M 403	27 Sep 92	1610	N07:04.00	W080:05.87	4	95	5	On

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Effort
21	18	M 420	6 Oct 92	757	N05:56.05	W079:03.76	4	96	3	On
21		J 425	6 Sep 92	829	N08:11.31	W084:53.51	3	4	13	On
21		J 431	6 Sep 92	1441	N07:36.93	W085:32.36	2	73	14	On
21		M 432	7 Oct 92	836	N04:50.61	W080:08.65	3	96	7	On
21	18	J 432	6 Sep 92	1504	N07:33.94	W085:32.24	3	99	30	Off
21		M 438	8 Oct 92	655	N04:03.59	W081:05.69	5	73	5	On
21		M 445	9 Oct 92	958	N04:40.25	W082:19.84	4	94	2	Off
21		M 450	12 Oct 92	1217	N04:45.75	W085:48.33	4	7	7	On
21		M 457	13 Oct 92	804	N08:08.37	W085:23.04	2	73	2	Off
21		M 459	13 Oct 92	819	N08:11.30	W085:21.93	2	73	6	Off
21		J 465	13 Sep 92	1014	N04:01.55	W089:00.24	5	7	1	On
21		M 465	13 Oct 92	1230	N09:01.60	W085:02.53	2	96	7	Off
21		M 473	14 Oct 92	749	N07:50.60	W084:49.84	3	73	10	On
21	18 36	J 477	17 Sep 92	705	N02:38.67	W091:38.61	4	87	23	On
21		M 477	14 Oct 92	1110	N07:34.17	W084:27.95	2	96	9	On
21		M 480	14 Oct 92	1802	N06:56.06	W084:02.78	2	102	4	Off
21		M 481	15 Oct 92	742	N05:43.93	W085:06.05	3	7	4	On
21		M 483	15 Oct 92	931	N05:33.14	W085:16.44	3	73	13	On
21		M 484	15 Oct 92	1008	N05:29.72	W085:17.46	3	102	9	On
21		J 501	21 Sep 92	1718	N06:50.80	W084:22.77	3	73	2	On
21		J 506	22 Sep 92	1349	N07:25.89	W083:30.02	3	7	5	On
21		M 508	19 Oct 92	1337	N05:08.77	W083:55.29	5	73	3	On
21		M 527	22 Oct 92	1548	N06:17.58	W079:20.78	4	73	5	On
21		J 527	25 Sep 92	1032	N08:38.20	W085:39.86	4	87	12	On
21		M 536	24 Oct 92	1239	N04:50.32	W077:42.91	4	93	2	On
21		J 559	6 Oct 92	1436	N04:21.67	W078:34.68	3	91	10	On
21	18	J 679	22 Oct 92	720	N11:04.18	W097:53.86	4	92	10	On
21	18	J 711	26 Oct 92	1223	N17:15.64	W101:43.92	1	74	113	Off
21		J 736	28 Oct 92	925	N21:07.05	W106:17.81	0	34	49	Off
<i>Lagenorhynchus obliquidens</i>										
22		J 5	29 Jul 92	1313	N29:22.45	W115:33.45	4	96	11	Off
22		M 15	29 Jul 92	1725	N29:17.70	W115:19.26	4	55	20	Off
22		M 17	29 Jul 92	1826	N29:14.64	W115:11.52	3	91	36	Off
22	16	M 19	30 Jul 92	901	N27:27.78	W114:55.20	2	91	980	Off
22	05	M 23	30 Jul 92	1143	N27:17.94	W114:45.90	1	92	6	Off
22	05	M 31	30 Jul 92	1420	N27:12.36	W114:37.98	2	55	6	Off
22		J 31	30 Jul 92	720	N28:41.47	W114:57.76	2	7	12	Off
22		J 33	30 Jul 92	902	N28:31.33	W115:11.20	1	87	10	Off
22		J 36	30 Jul 92	1332	N28:03.07	W115:27.76	2	73	2	Off
22		J 37	30 Jul 92	1402	N28:01.06	W115:26.23	3	94	8	Off
22		J 39	30 Jul 92	1634	N27:41.13	W115:15.03	4	73	5	Off
22		M 40	31 Jul 92	836	N25:44.04	W112:27.24	1	55	11	Off
22		M 41	31 Jul 92	949	N25:36.60	W112:23.88	2	92	20	Off
22		M 43	31 Jul 92	1040	N25:33.12	W112:19.56	1	74	22	Off
22		M 44	31 Jul 92	1315	N25:10.14	W112:20.64	3	92	7	Off
<i>Peponocephala electra</i>										
31		M 534	24 Oct 92	928	N05:05.53	W077:59.53	4	7	194	On
31	15	M 559	27 Oct 92	1429	N02:27.50	W079:28.87	4	87	240	On
31		J 568	7 Oct 92	1432	N03:22.76	W079:37.19	4	67	1022	Off
<i>Feresa attenuata</i>										
32		M 168	10 Aug 92	1609	N09:27.75	W089:28.08	1	55	19	On
32		M 512	20 Oct 92	1122	N05:59.97	W083:05.29	3	96	19	On
<i>Pseudorca crassidens</i>										
33	18	M 72	2 Aug 92	1125	N21:51.90	W106:21.22	2	74	21	Off
33	37	M 449	12 Oct 92	1114	N04:42.88	W085:43.55	5	96	8	On
33		M 572	31 Oct 92	815	N03:59.42	W081:35.75	5	102	14	Off



Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Efort
<i>Globicephala macrorhynchus</i>										
36		M 146	9 Aug 92	1312	N10:34.63	W088:31.07	5	91	22	On
36	18	M 191	11 Aug 92	1357	N08:35.13	W090:14.04	1	91	95	On
36		M 198	14 Aug 92	1024	N06:11.97	W092:48.17	3	74	4	On
36		M 202	17 Aug 92	1532	N04:18.71	W094:49.22	5	55	7	On
36		M 204	18 Aug 92	823	N04:39.35	W096:19.59	5	55	4	On
36		M 220	20 Aug 92	1759	N07:56.70	W093:09.34	3	74	8	Off
36	18	J 222	11 Aug 92	827	N10:34.93	W094:19.01	2	73	15	On
36		J 257	13 Aug 92	1000	N08:34.30	W096:24.80	5	4	5	Off
36		J 258	13 Aug 92	1311	N08:14.91	W096:44.10	4	73	14	On
36		J 273	16 Aug 92	626	N06:59.93	W095:59.27	5	87	5	Off
36	18	J 277	16 Aug 92	918	N07:07.71	W095:49.90	5	94	12	On
36		M 285	3 Sep 92	1644	N10:27.34	W086:33.01	5	55	9	On
36	18	M 287	4 Sep 92	936	N10:18.81	W086:48.47	5	74	12	On
36	18	M 291	5 Sep 92	650	N09:50.34	W087:07.23	2	97	23	On
36	77	J 303	18 Aug 92	1310	N10:05.78	W093:05.55	2	96	14	On
36		M 303	6 Sep 92	1029	N08:16.55	W088:43.61	1	92	9	On
36	18	M 376	22 Sep 92	1358	N07:04.88	W088:03.99	4	91	63	On
36	18	M 380	23 Sep 92	1609	N07:37.34	W087:23.92	1	92	14	On
36	18	M 381	23 Sep 92	1641	N07:39.34	W087:20.33	2	92	18	On
36		M 386	24 Sep 92	1307	N08:20.33	W086:43.95	4	97	6	On
36		J 406	4 Sep 92	1523	N09:15.16	W086:08.97	2	73	3	On
36	18	J 417	5 Sep 92	1427	N08:38.69	W084:25.00	2	7	17	On
36	18	J 430	6 Sep 92	1316	N07:44.46	W085:25.92	2	90	13	Off
36		M 436	7 Oct 92	1450	N04:13.55	W080:44.71	5	93	6	On
36	18	J 437	8 Sep 92	632	N08:02.05	W085:49.79	5	73	23	Off
36	18	M 452	12 Oct 92	1433	N04:59.18	W086:04.40	2	94	11	On
36		M 453	12 Oct 92	1523	N05:01.63	W086:06.97	2	94	11	On
36	18	J 454	10 Sep 92	1411	N09:05.24	W085:54.03	3	73	33	On
36	18	J 461	10 Sep 92	1640	N08:52.64	W086:09.74	3	93	21	On
36	18	M 464	13 Oct 92	1205	N08:56.52	W085:04.31	2	96	11	Off
36		M 466	13 Oct 92	1332	N09:14.22	W084:57.71	4	96	12	Off
36		J 476	15 Sep 92	1406	N03:30.87	W092:32.93	5	7	5	On
36	18 21	J 477	17 Sep 92	705	N02:38.67	W091:38.61	4	87	23	On
36		J 512	23 Sep 92	734	N07:59.14	W083:05.70	2	7	5	Off
36		J 514	23 Sep 92	1305	N08:20.25	W083:36.72	3	94	5	Off
36		J 533	27 Sep 92	1528	N05:56.33	W081:12.89	5	93	3	On
36	02	M 555	27 Oct 92	956	N02:05.42	W078:55.68	4	94	182	On
36	18	M 575	1 Nov 92	1523	N07:23.50	W079:36.51	4	73	51	On
36		M 577	8 Sep 92	1655	N05:30.57	W091:30.11	5	74	7	On
36	18	J 578	8 Oct 92	1659	N02:12.75	W080:50.29	4	55	24	On
36	18	J 590	12 Oct 92	1008	N02:20.83	W087:16.64	4	55	21	On
36		J 597	13 Oct 92	1253	N04:29.08	W089:19.46	3	95	9	On
36	18	J 615	15 Oct 92	624	N07:23.32	W092:21.14	2	74	38	On
36	18	J 616	15 Oct 92	706	N07:24.99	W092:24.43	3	97	62	On
36	18	J 776	31 Oct 92	805	N26:46.56	W114:32.03	4	55	26	Off
36	18	J 777	31 Oct 92	821	N26:48.52	W114:33.98	4	4	10	Off
<i>Orcinus orca</i>										
37		J 165	6 Aug 92	1804	N15:23.94	W096:31.42	2	93	4	Off
37	33	M 449	12 Oct 92	1114	N04:42.88	W085:43.55	5	96	8	On
37		J 750	28 Oct 92	1611	N21:37.51	W106:49.20	2	91	4	Off
37		J 758	29 Oct 92	1016	N22:40.13	W109:26.23	2	74	1	Off
37		J 775	30 Oct 92	1437	N24:49.27	W112:38.08	5	4	6	Off
<i>Physeter macrocephalus</i>										
46		J 101	2 Aug 92	1214	N22:39.39	W109:10.01	1	7	4	Off
46		J 104	2 Aug 92	1259	N22:42.44	W109:04.70	1	94	1	Off
46		J 107	2 Aug 92	1355	N22:42.59	W108:58.73	2	4	1	Off
46		J 108	2 Aug 92	1409	N22:42.28	W108:58.58	2	73	1	Off

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Ef-fort
46		J 109	2 Aug 92	1414	N22:41.98	W108:57.67	2	73	1	Off
46		J 110	2 Aug 92	1420	N22:41.61	W108:56.55	2	73	1	Off
46		J 111	2 Aug 92	1421	N22:41.60	W108:56.54	2	73	3	Off
46	18	J 113	2 Aug 92	1453	N22:44.14	W108:54.62	2	73	53	Off
46		J 276	16 Aug 92	845	N07:04.18	W095:54.07	5	7	1	On
46		J 278	16 Aug 92	931	N07:08.40	W095:49.14	5	96	6	On
46	18	M 375	22 Sep 92	1302	N07:09.12	W088:08.75	4	97	36	On
46		M 379	23 Sep 92	1522	N07:35.98	W087:25.91	1	91	1	On
46		M 384	24 Sep 92	1140	N08:10.95	W086:55.44	3	55	1	On
46		J 407	4 Sep 92	1543	N09:13.40	W086:07.22	2	73	1	On
46		M 423	6 Oct 92	1159	N05:40.50	W079:19.40	2	96	7	On
46		M 424	6 Oct 92	1238	N05:35.12	W079:23.44	2	87	2	Off
46		J 433	6 Sep 92	1525	N07:31.88	W085:31.36	3	73	14	On
46		J 470	14 Sep 92	1158	N02:40.07	W090:17.57	5	73	1	On
46		M 487	16 Oct 92	1405	N04:13.94	W086:45.40	5	94	27	On
46		J 493	19 Sep 92	1641	N04:17.17	W086:42.31	4	94	8	Off
46		M 499	18 Oct 92	1231	N03:54.56	W085:05.60	4	93	16	On
46		M 500	18 Oct 92	1339	N03:59.61	W085:02.74	4	7	2	On
46		M 501	18 Oct 92	1349	N04:00.71	W085:01.43	4	87	3	On
46		M 502	18 Oct 92	1739	N04:18.04	W084:36.96	4	94	10	On
46		M 530	23 Oct 92	1057	N05:35.29	W078:30.59	5	99	2	Off
46		M 538	24 Oct 92	1637	N04:23.27	W077:29.26	2	87	2	Off
46		J 554	6 Oct 92	943	N04:49.64	W078:07.65	2	95	22	On
46		J 562	7 Oct 92	915	N03:52.71	W079:10.48	4	97	4	On
46		M 564	28 Oct 92	1714	N03:59.42	W081:00.52	4	93	21	On
46		J 564	7 Oct 92	1027	N03:44.29	W079:16.91	4	55	24	On
46		M 567	29 Oct 92	1214	N03:16.17	W081:44.48	5	73	8	Off
46		J 567	7 Oct 92	1430	N03:22.89	W079:36.92	4	92	2	On
46		J 569	7 Oct 92	1524	N03:20.44	W079:40.43	4	95	5	On
46		J 570	7 Oct 92	1543	N03:18.34	W079:42.42	4	55	2	On
46		J 572	8 Oct 92	1356	N02:27.32	W080:31.36	4	55	14	On
46		J 573	8 Oct 92	1504	N02:20.12	W080:39.17	4	97	8	On
46		J 574	8 Oct 92	1515	N02:20.42	W080:40.53	4	74	3	On
46	18	J 575	8 Oct 92	1614	N02:13.75	W080:46.99	4	95	8	On
46	18	J 576	8 Oct 92	1618	N02:13.34	W080:47.39	4	95	9	On
46		J 577	8 Oct 92	1657	N02:13.05	W080:50.02	4	55	3	On
46		J 579	8 Oct 92	1704	N02:12.22	W080:50.83	4	95	2	On
46		J 580	8 Oct 92	1740	N02:09.57	W080:54.82	4	74	2	On
Kogia simus										
48		M 78	3 Aug 92	1116	N19:05.99	W105:00.09	1	55	1	Off
48		M 92	4 Aug 92	822	N17:25.65	W101:48.30	2	55	1	Off
48		J 152	5 Aug 92	1750	N16:39.40	W100:06.89	1	94	1	Off
48		J 184	8 Aug 92	1659	N13:14.45	W091:44.79	1	7	1	On
48		J 193	10 Aug 92	728	N11:57.94	W093:05.73	0	73	1	On
48		M 302	6 Sep 92	1011	N08:17.39	W088:40.45	1	55	1	On
48		M 426	6 Oct 92	1345	N05:27.96	W079:31.65	1	87	3	On
48		M 467	13 Oct 92	1352	N09:18.06	W084:56.02	2	73	1	Off
48		M 491	17 Oct 92	1247	N02:41.98	W086:18.14	5	73	1	On
48		M 517	21 Oct 92	1011	N06:55.24	W082:04.97	2	73	1	Off
48		M 574	1 Nov 92	1434	N07:17.60	W079:42.62	4	96	1	On
48		J 610	14 Oct 92	1543	N06:24.37	W091:21.39	1	55	2	On
48		J 720	27 Oct 92	923	N18:40.19	W104:13.40	2	95	2	Off
48		J 740	28 Oct 92	1203	N21:17.38	W106:31.47	1	91	5	Off
48		J 746	28 Oct 92	1347	N21:25.30	W106:39.95	1	4	3	Off
ziphiid whale										
49		M 102	5 Aug 92	1501	N15:27.61	W097:02.24	3	92	2	Off
49		M 108	5 Aug 92	1841	N15:20.73	W096:29.20	1	55	1	Off
49		M 192	11 Aug 92	1522	N08:29.08	W090:19.52	1	55	3	On

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Effort
49		M 267	1 Sep 92	1600	N12:05.42	W089:03.77	3	91	1	Off
49		M 344	15 Sep 92	1705	N05:42.04	W089:19.26	4	92	1	On
49		J 490	18 Sep 92	1734	N03:08.75	W087:58.11	5	96	2	On
49		M 507	19 Oct 92	1311	N05:05.77	W083:57.77	5	94	1	On
49		J 558	6 Oct 92	1412	N04:23.72	W078:31.95	2	91	3	On
49		M 569	30 Oct 92	1213	N02:42.02	W082:20.32	5	102	2	On
49		M 573	1 Nov 92	1217	N07:01.42	W079:58.76	2	7	1	On
49		J 695	24 Oct 92	1311	N12:34.90	W098:05.71	1	91	1	Off
49		J 702	25 Oct 92	1255	N15:25.07	W099:52.87	4	95	3	Off
49		J 748	28 Oct 92	1449	N21:28.42	W106:45.62	2	55	3	Off
Mesoplodon species										
51		J 297	18 Aug 92	948	N09:44.08	W093:27.05	3	96	1	On
51		J 427	6 Sep 92	931	N08:07.07	W085:01.98	3	7	3	On
51		J 447	10 Sep 92	843	N09:21.77	W085:33.99	0	93	3	Off
51		J 450	10 Sep 92	1052	N09:17.27	W085:35.60	1	73	4	On
51		M 455	13 Oct 92	631	N07:49.39	W085:30.20	2	7	2	Off
51		M 482	15 Oct 92	827	N05:39.84	W085:11.58	3	73	2	On
51		M 526	22 Oct 92	1437	N06:21.99	W079:29.07	4	73	3	On
51		M 535	24 Oct 92	1058	N05:01.01	W077:54.43	4	96	1	On
51		J 557	6 Oct 92	1404	N04:24.61	W078:31.77	2	4	2	Off
51		J 630	15 Oct 92	1459	N07:53.30	W092:56.43	2	97	2	On
Mesoplodon densirostris										
59		M 7	29 Jul 92	756	N30:21.48	W116:11.16	2	97	1	Off
59		M 525	22 Oct 92	1007	N06:45.63	W079:52.47	3	94	2	On
Ziphius cavirostris										
61		J 116	2 Aug 92	1804	N22:35.54	W108:29.38	2	73	2	Off
61		J 236	11 Aug 92	1809	N09:57.42	W095:04.26	1	7	1	On
61		J 254	12 Aug 92	1609	N08:54.33	W096:11.62	3	94	4	On
61		M 447	10 Oct 92	650	N03:47.37	W083:11.55	5	73	1	On
61		J 511	23 Sep 92	726	N07:58.46	W083:04.57	2	4	2	Off
61		M 568	30 Oct 92	1049	N02:31.12	W082:30.41	4	94	1	On
Berardius bairdii										
63		M 37	30 Jul 92	1726	N27:00.36	W114:22.26	4	97	18	Off
63		J 41	30 Jul 92	1719	N27:37.09	W115:14.03	4	73	11	Off
63		J 48	31 Jul 92	1318	N26:54.43	W114:19.15	3	7	20	Off
63		J 49	31 Jul 92	1441	N26:48.95	W114:14.08	4	73	6	Off
63		J 56	31 Jul 92	1840	N26:29.19	W113:58.17	5	73	42	Off
Balaenoptera species										
70		M 27	30 Jul 92	1249	N27:16.62	W114:40.44	1	55	1	Off
70		J 34	30 Jul 92	1018	N28:22.48	W115:21.13	2	98	1	Off
70		J 43	30 Jul 92	1830	N27:31.00	W115:11.67	4	4	1	Off
70		J 54	31 Jul 92	1720	N26:39.52	W114:03.52	5	7	1	Off
70		M 54	1 Aug 92	659	N23:06.04	W110:27.83	4	92	1	Off
70		J 60	1 Aug 92	652	N25:06.58	W112:47.22	4	94	1	Off
70	99	J 61	1 Aug 92	711	N25:06.01	W112:46.00	4	94	9	Off
70		J 90	1 Aug 92	1844	N24:00.78	W111:35.74	4	4	1	Off
70		J 91	1 Aug 92	1011	N24:49.93	W112:35.61	3	7	1	Off
70		J 99	2 Aug 92	1059	N22:39.86	W109:21.78	1	73	1	Off
70		M 115	7 Aug 92	635	N13:21.07	W091:00.53	2	92	1	Off
70		M 203	18 Aug 92	734	N04:36.33	W096:24.43	5	74	1	On
70		M 206	19 Aug 92	649	N05:46.70	W095:13.13	4	55	1	On
70	75	J 291	17 Aug 92	1521	N09:05.44	W094:03.21	4	96	4	On
70		J 304	18 Aug 92	1411	N10:07.33	W093:00.96	3	73	1	On
70		J 316	19 Aug 92	634	N10:23.82	W092:37.43	2	99	1	Off
70		M 327	12 Sep 92	1748	N02:33.30	W092:31.35	4	92	1	Off

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Effort
70		J 335	22 Aug 92	807	N09:09.68	W090:10.22	4	96	2	On
70		J 336	22 Aug 92	813	N09:10.23	W090:11.08	4	96	1	On
70		J 467	13 Sep 92	1406	N03:38.48	W089:23.13	5	7	1	On
70		J 468	14 Sep 92	928	N02:54.34	W090:07.21	5	7	1	On
70		J 478	17 Sep 92	753	N02:31.74	W091:34.38	3	87	1	On
70		M 544	25 Oct 92	1702	N02:59.89	W078:00.72	3	73	2	On
70		J 588	12 Oct 92	706	N02:01.24	W087:01.21	4	92	1	On
70		J 664	19 Oct 92	939	N09:35.62	W099:34.35	3	34	1	On
<i>Balaenoptera acutorostrata</i>										
71		M 30	30 Jul 92	1331	N27:12.66	W114:38.88	2	91	1	Off
71		J 785	1 Nov 92	1344	N30:18.36	W116:10.85	3	55	1	Off
<i>Balaenoptera edeni</i>										
72		J 167	7 Aug 92	1355	N15:09.67	W093:51.94	3	73	1	Off
72	02 11	M 322	12 Sep 92	1414	N02:18.07	W092:43.89	4	97	415	On
72		M 331	13 Sep 92	940	N02:53.63	W092:10.70	5	55	1	On
72		M 334	14 Sep 92	650	N03:11.38	W091:50.91	5	95	1	On
72		M 338	14 Sep 92	1114	N03:41.31	W091:26.84	5	95	1	On
72		M 340	14 Sep 92	1332	N03:54.04	W091:10.35	5	74	1	On
72		M 348	16 Sep 92	1639	N06:39.11	W088:14.27	3	97	2	On
72		J 474	15 Sep 92	908	N03:03.94	W092:03.86	5	96	1	On
72		J 480	17 Sep 92	913	N02:24.80	W091:28.76	4	73	1	On
72		J 486	18 Sep 92	749	N02:11.86	W088:51.67	5	94	4	On
72		M 494	18 Oct 92	650	N03:22.03	W085:39.08	5	73	1	On
72		J 545	4 Oct 92	1608	N07:56.09	W079:12.67	2	4	2	Off
72		J 601	13 Oct 92	1633	N04:49.16	W089:34.82	3	55	3	On
72		J 602	13 Oct 92	1706	N04:50.45	W089:38.20	3	92	2	On
72		J 650	18 Oct 92	937	N09:22.57	W097:28.12	2	91	1	On
<i>Balaenoptera physalus</i>										
74		J 766	29 Oct 92	1425	N22:51.07	W110:03.06	2	74	1	Off
<i>Balaenoptera musculus</i>										
75		M 3	28 Jul 92	1951	N32:31.02	W117:25.32	3	55	1	Off
75		M 8	29 Jul 92	819	N30:18.60	W116:09.54	2	95	2	Off
75		M 25	30 Jul 92	1211	N27:17.52	W114:42.48	1	81	1	Off
75		M 166	10 Aug 92	1320	N09:26.80	W089:27.71	2	95	3	Off
75		M 207	19 Aug 92	1654	N06:27.33	W094:23.81	3	74	1	On
75		M 238	24 Aug 92	818	N09:54.00	W091:08.00	5	95	2	Off
75	70	J 291	17 Aug 92	1521	N09:05.44	W094:03.21	4	96	4	On
75		J 314	19 Aug 92	606	N10:21.59	W092:40.84	2	7	1	On
75		J 332	22 Aug 92	647	N09:01.37	W090:01.37	4	73	2	On
75		J 333	22 Aug 92	710	N09:04.53	W090:03.31	4	73	2	Off
75		J 338	22 Aug 92	854	N09:12.45	W090:16.17	4	4	2	Off
75		M 360	20 Sep 92	1610	N09:54.44	W091:14.56	2	91	2	On
75		J 392	2 Sep 92	608	N10:30.61	W090:29.52	2	96	2	On
75		J 394	2 Sep 92	657	N10:36.50	W090:26.46	3	80	1	Off
75		J 621	15 Oct 92	956	N07:33.99	W092:40.10	1	55	2	On
75		J 623	15 Oct 92	1020	N07:36.96	W092:43.16	2	74	1	On
75		J 624	15 Oct 92	1052	N07:41.54	W092:46.22	2	74	2	Off
75		J 625	15 Oct 92	1055	N07:41.94	W092:46.48	2	91	2	Off
75		J 689	23 Oct 92	1245	N11:37.16	W099:07.81	4	95	1	On
<i>Megaptera novaeangliae</i>										
76	99 77	J 68	1 Aug 92	920	N24:53.99	W112:36.61	3	87	9	Off
76		M 411	28 Sep 92	1240	N08:04.77	W078:47.58	2	91	1	On
76		M 412	28 Sep 92	1428	N08:09.50	W078:45.27	2	95	1	On
76		M 540	25 Oct 92	943	N03:32.72	W077:29.33	3	94	2	On
76		M 541	25 Oct 92	1103	N03:25.72	W077:35.20	2	87	2	On

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Effort
76		M 542	25 Oct 92	1250	N03:23.33	W077:38.27	2	73	2	On
76		M 545	25 Oct 92	1707	N02:59.29	W078:01.26	3	15	1	On
76		M 546	26 Oct 92	919	N02:56.66	W078:02.66	2	7	2	On
76		M 549	26 Oct 92	1107	N02:49.77	W078:11.92	1	73	5	On
76		M 550	26 Oct 92	1123	N02:52.31	W078:13.84	1	73	2	Off
76		M 552	26 Oct 92	1735	N02:27.86	W078:40.47	4	73	2	On
76		M 553	27 Oct 92	751	N02:19.66	W078:44.45	5	93	1	On
76		J 566	7 Oct 92	1250	N03:31.81	W079:31.00	4	91	3	On
76		J 713	26 Oct 92	1423	N17:21.47	W101:55.75	1	95	1	Off
unidentified dolphin										
77		J 2	29 Jul 92	1043	N29:38.64	W115:51.17	3	73	1	Off
77		M 2	28 Jul 92	1944	N32:32.46	W117:24.60	3	74	100	Off
77		J 4	29 Jul 92	1115	N29:37.59	W115:47.71	3	87	1	Off
77		M 13	29 Jul 92	1136	N29:53.04	W115:59.70	2	97	5	Off
77		J 22	29 Jul 92	1820	N29:04.57	W115:06.13	4	4	2	Off
77		J 27	29 Jul 92	1902	N29:00.84	W114:59.54	4	87	1	Off
77		J 28	29 Jul 92	1906	N29:00.38	W114:58.74	4	87	1	Off
77		M 29	30 Jul 92	1326	N27:13.26	W114:39.48	2	97	10	Off
77		J 30	30 Jul 92	706	N28:42.98	W114:55.79	2	96	2	Off
77		J 44	31 Jul 92	747	N27:13.30	W114:53.82	3	73	1	Off
77		M 51	31 Jul 92	1740	N24:37.62	W112:21.72	4	74	10	Off
77	18	M 53	31 Jul 92	1824	N24:34.68	W112:19.44	3	91	7	Off
77		M 56	1 Aug 92	1223	N22:36.39	W110:14.88	3	97	2	Off
77		J 57	1 Aug 92	620	N25:10.22	W112:49.80	3	94	1	Off
77		M 58	1 Aug 92	1337	N22:36.20	W110:06.80	4	91	3	Off
77		J 59	1 Aug 92	650	N25:06.67	W112:47.56	4	94	3	Off
77		M 61	1 Aug 92	1537	N22:36.08	W109:53.50	2	92	1	Off
77		J 66	1 Aug 92	852	N24:56.63	W112:40.51	3	98	2	Off
77	99 76	J 68	1 Aug 92	920	N24:53.99	W112:36.61	3	87	9	Off
77		M 71	2 Aug 92	1112	N21:52.97	W106:23.25	2	97	90	Off
77		J 86	1 Aug 92	1546	N24:15.30	W111:59.09	4	84	1	Off
77	21	M 86	3 Aug 92	1810	N18:33.42	W104:13.38	4	95	8	Off
77		M 90	4 Aug 92	708	N17:26.18	W101:59.01	2	74	4	Off
77		M 93	4 Aug 92	859	N17:23.50	W101:42.32	2	55	5	Off
77		M 100	4 Aug 92	1810	N16:51.79	W100:28.76	4	91	1	Off
77		M 104	5 Aug 92	1603	N15:26.07	W096:53.97	2	55	5	Off
77		M 112	6 Aug 92	1425	N15:04.95	W093:12.52	2	91	2	Off
77		J 117	2 Aug 92	1811	N22:35.30	W108:28.04	2	73	3	Off
77		M 117	7 Aug 92	739	N13:19.68	W090:53.66	2	55	2	Off
77		J 118	2 Aug 92	1838	N22:34.42	W108:22.77	2	93	1	Off
77		J 119	2 Aug 92	1849	N22:34.07	W108:20.87	2	73	25	Off
77		J 126	4 Aug 92	747	N19:01.88	W104:56.92	3	73	25	Off
77		M 127	7 Aug 92	1234	N13:06.50	W090:12.38	2	74	2	Off
77		M 129	7 Aug 92	1438	N12:59.65	W089:55.08	2	55	4	Off
77	88	M 130	7 Aug 92	1559	N12:58.81	W089:50.94	3	95	625	Off
77		M 132	8 Aug 92	747	N12:05.35	W087:10.43	4	74	1	Off
77		M 133	8 Aug 92	824	N12:04.48	W087:06.12	2	99	2	Off
77		J 137	4 Aug 92	1607	N18:24.60	W103:55.12	4	94	1	Off
77		J 138	4 Aug 92	1646	N18:18.52	W103:53.92	4	7	1	Off
77		M 142	9 Aug 92	709	N11:07.44	W087:57.23	2	95	2	On
77		M 143	9 Aug 92	731	N11:05.82	W087:57.26	2	95	3	On
77		M 144	9 Aug 92	1108	N10:45.89	W088:18.15	4	55	2	On
77		J 148	5 Aug 92	1626	N16:44.01	W100:15.93	2	93	6	Off
77		J 149	5 Aug 92	1629	N16:43.63	W100:15.71	2	73	6	Off
77		M 151	9 Aug 92	1751	N10:13.52	W088:47.27	3	92	1	On
77		M 152	9 Aug 92	1758	N10:12.85	W088:48.00	3	95	50	On
77		J 166	6 Aug 92	1821	N15:23.24	W096:31.31	2	73	1	Off
77		J 169	7 Aug 92	1616	N14:57.27	W093:39.55	2	93	2	Off
77		J 171	7 Aug 92	1831	N14:48.07	W093:30.34	1	7	2	Off

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Efort
77		M 172	10 Aug 92	1725	N09:23.60	W089:34.69	0	91	15	On
77		J 172	8 Aug 92	609	N14:01.17	W091:56.01	3	73	3	Off
77		J 175	8 Aug 92	1306	N13:34.09	W091:24.99	3	4	3	Off
77		M 179	11 Aug 92	808	N09:15.03	W089:51.92	2	97	2	On
77		M 180	11 Aug 92	816	N09:14.01	W089:52.82	2	91	6	On
77		M 186	11 Aug 92	1103	N08:56.34	W089:59.54	2	95	150	On
77		M 188	11 Aug 92	1106	N08:56.02	W089:59.80	2	92	20	Off
77		J 198	10 Aug 92	1025	N11:41.47	W093:19.45	2	84	1	On
77		J 199	10 Aug 92	1111	N11:35.89	W093:24.93	2	93	4	On
77		J 207	10 Aug 92	1446	N11:20.44	W093:45.88	1	87	5	Off
77		J 208	10 Aug 92	1519	N11:19.93	W093:51.33	2	73	100	On
77		M 208	19 Aug 92	1800	N06:34.18	W094:18.38	2	55	7	On
77		J 210	10 Aug 92	1635	N11:11.42	W094:00.67	1	94	3	On
77		J 213	10 Aug 92	1720	N11:06.20	W094:03.00	1	7	15	On
77		M 218	20 Aug 92	1711	N07:51.92	W093:14.66	3	95	5	On
77		J 218	11 Aug 92	642	N10:48.77	W094:09.81	1	7	1	On
77		J 219	11 Aug 92	658	N10:46.77	W094:11.97	1	96	9	On
77		J 220	11 Aug 92	733	N10:42.48	W094:16.60	1	94	2	On
77		M 228	22 Aug 92	1146	N08:47.78	W091:58.60	4	91	1	On
77		M 229	22 Aug 92	1234	N08:54.07	W091:53.00	4	95	150	On
77		M 234	22 Aug 92	1658	N09:12.62	W091:39.00	4	55	20	On
77		J 237	11 Aug 92	1814	N09:56.65	W095:04.76	1	96	8	On
77		M 240	24 Aug 92	1043	N10:02.00	W091:02.00	5	74	60	Off
77		M 243	24 Aug 92	1327	N10:16.00	W090:44.00	5	92	2	Off
77		J 246	12 Aug 92	1216	N09:18.49	W095:47.19	3	7	20	On
77		J 250	12 Aug 92	1418	N09:07.76	W095:58.16	2	87	5	On
77		J 251	12 Aug 92	1421	N09:07.42	W095:58.52	2	87	1	On
77		M 261	1 Sep 92	1121	N12:27.02	W088:34.30	4	74	2	On
77		M 262	1 Sep 92	1144	N12:24.57	W088:37.57	3	97	2	On
77		M 268	1 Sep 92	1635	N12:01.44	W089:02.86	4	92	6	On
77	18	M 269	1 Sep 92	1737	N11:57.52	W088:56.50	3	97	5	Off
77		M 270	2 Sep 92	652	N10:55.14	W087:56.43	5	55	1	On
77		M 273	2 Sep 92	1056	N10:33.89	W087:38.30	5	55	2	On
77		J 275	16 Aug 92	823	N07:01.44	W095:56.72	5	7	1	On
77		J 281	16 Aug 92	1250	N07:33.50	W095:26.36	5	96	2	On
77		M 286	3 Sep 92	1741	N10:18.88	W086:35.52	5	74	20	On
77		J 290	17 Aug 92	1434	N08:59.35	W094:05.49	4	94	5	On
77		M 292	5 Sep 92	911	N09:35.50	W087:18.70	2	55	2	On
77		M 295	5 Sep 92	1357	N09:03.33	W087:48.15	4	92	15	On
77		M 296	5 Sep 92	1619	N08:46.79	W088:03.02	3	92	4	On
77		M 298	6 Sep 92	559	N08:40.59	W088:17.35	1	55	50	On
77		J 298	18 Aug 92	1017	N09:46.22	W093:22.79	2	87	30	On
77		J 300	18 Aug 92	1026	N09:47.37	W093:21.79	2	99	80	Off
77		M 300	6 Sep 92	750	N08:28.57	W088:25.97	4	95	150	On
77		M 301	6 Sep 92	819	N08:25.18	W088:29.61	3	102	5	On
77	36	J 303	18 Aug 92	1310	N10:05.78	W093:05.55	2	96	14	On
77		M 307	6 Sep 92	1739	N07:42.39	W089:20.54	4	55	6	On
77		J 310	18 Aug 92	1652	N10:25.73	W092:59.56	3	96	45	On
77		J 312	18 Aug 92	1759	N10:25.49	W092:49.55	3	73	20	On
77		M 313	10 Sep 92	641	N04:14.57	W092:42.03	5	92	2	On
77		M 314	10 Sep 92	1418	N03:26.94	W093:30.50	4	95	12	On
77		M 323	12 Sep 92	1419	N02:18.78	W092:43.69	4	19	13	Off
77		J 325	19 Aug 92	1535	N11:02.36	W092:07.13	3	7	2	On
77		J 326	19 Aug 92	1749	N11:15.04	W091:54.56	3	4	3	Off
77		J 329	21 Aug 92	1257	N10:25.35	W091:25.63	5	73	1	On
77		M 329	13 Sep 92	711	N02:38.49	W092:24.78	4	19	1	Off
77		M 330	13 Sep 92	837	N02:48.88	W092:15.15	4	102	1	On
77		M 333	13 Sep 92	1147	N03:06.97	W092:02.11	5	91	20	On
77		J 340	22 Aug 92	951	N09:14.29	W090:21.68	3	94	1	On
77		M 343	15 Sep 92	1617	N05:37.17	W089:25.57	4	95	8	On

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Ef-fort
77		J 343	22 Aug 92	1308	N09:26.88	W090:39.91	4	96	1	On
77		M 345	15 Sep 92	1745	N05:47.23	W089:14.45	4	91	10	On
77		J 346	23 Aug 92	1627	N11:54.36	W091:12.67	5	73	2	On
77		M 353	20 Sep 92	707	N10:03.26	W090:23.14	3	95	5	Off
77		J 354	24 Aug 92	1328	N12:46.55	W090:15.54	1	94	30	On
77		J 360	24 Aug 92	1651	N13:05.13	W089:55.17	2	96	1	On
77		J 363	25 Aug 92	626	N13:23.86	W089:38.69	1	94	1	On
77		M 363	21 Sep 92	723	N08:56.83	W089:53.92	3	91	10	On
77		M 367	21 Sep 92	1332	N08:17.97	W089:10.54	5	55	5	Off
77		J 369	25 Aug 92	702	N13:19.52	W089:43.01	2	94	1	On
77		J 372	25 Aug 92	914	N13:02.86	W089:57.64	3	87	15	Off
77		M 373	22 Sep 92	826	N07:42.05	W088:36.82	3	97	1	On
77		M 377	23 Sep 92	1220	N07:20.36	W087:38.10	3	55	1	On
77		J 380	31 Aug 92	1505	N13:28.58	W090:17.25	4	73	1	On
77		J 381	31 Aug 92	1644	N13:17.75	W090:10.48	4	93	2	On
77		J 387	1 Sep 92	944	N12:08.96	W089:07.07	5	96	8	On
77		J 390	1 Sep 92	1712	N11:22.88	W089:33.11	4	4	1	Off
77		M 394	26 Sep 92	737	N06:05.53	W083:06.54	4	55	3	On
77		M 395	26 Sep 92	936	N05:53.11	W082:54.49	5	74	3	On
77		M 399	27 Sep 92	817	N06:16.35	W080:41.95	4	55	1	On
77		J 403	4 Sep 92	1054	N09:36.82	W086:36.68	3	94	2	On
77		M 404	28 Sep 92	618	N07:31.01	W079:30.74	2	101	2	On
77		J 405	4 Sep 92	1335	N09:24.10	W086:20.13	2	7	2	On
77		M 409	28 Sep 92	1215	N08:05.92	W078:49.89	2	91	2	On
77		J 409	4 Sep 92	1652	N09:06.36	W086:01.57	4	7	3	On
77		M 410	28 Sep 92	1232	N08:04.37	W078:47.97	2	97	30	Off
77		J 410	4 Sep 92	1733	N09:04.16	W085:55.76	4	94	68	On
77		M 418	4 Oct 92	1729	N08:03.57	W078:59.75	3	96	1	Off
77		J 419	5 Sep 92	1604	N08:32.62	W084:29.30	3	94	15	On
77		M 419	5 Oct 92	1703	N06:14.50	W078:48.46	5	96	4	On
77		J 423	6 Sep 92	626	N08:26.95	W084:44.04	2	90	1	On
77		M 428	6 Oct 92	1524	N05:23.61	W079:41.49	3	73	10	On
77		M 434	7 Oct 92	1124	N04:33.00	W080:20.81	4	93	8	On
77		M 435	7 Oct 92	1338	N04:19.97	W080:34.84	4	73	5	On
77		J 438	8 Sep 92	1250	N09:00.59	W085:15.82	4	73	3	Off
77		M 439	8 Oct 92	720	N04:06.67	W081:07.31	5	94	2	On
77		M 442	8 Oct 92	1714	N04:56.51	W081:55.68	3	7	1	On
77		J 444	10 Sep 92	612	N09:32.48	W085:25.20	2	73	100	On
77		J 445	10 Sep 92	612	N09:32.52	W085:25.17	2	94	7	On
77		M 446	9 Oct 92	1427	N04:09.92	W082:46.44	5	87	3	On
77		J 449	10 Sep 92	1042	N09:18.32	W085:34.54	1	73	2	On
77		J 452	10 Sep 92	1330	N09:08.37	W085:49.86	3	7	1	On
77		J 453	10 Sep 92	1338	N09:07.46	W085:50.90	3	87	2	On
77		M 454	12 Oct 92	1809	N05:21.55	W086:26.46	4	96	10	On
77		M 456	13 Oct 92	750	N08:05.56	W085:24.05	2	93	45	Off
77		J 457	10 Sep 92	1458	N09:01.67	W085:58.44	3	96	5	On
77		M 458	13 Oct 92	816	N08:10.87	W085:22.08	2	96	6	Off
77		J 459	10 Sep 92	1546	N08:57.03	W086:04.49	3	94	1	Off
77		J 460	10 Sep 92	1637	N08:53.06	W086:09.31	3	87	1	On
77		M 460	13 Oct 92	1053	N08:42.24	W085:09.88	3	93	35	Off
77		M 461	13 Oct 92	1105	N08:44.59	W085:08.91	3	87	20	Off
77		M 462	13 Oct 92	1135	N08:50.46	W085:06.44	2	7	20	Off
77		J 462	10 Sep 92	1705	N08:51.22	W086:13.33	3	93	2	On
77		M 463	13 Oct 92	1158	N08:55.10	W085:04.81	2	93	3	Off
77		J 463	12 Sep 92	1644	N04:37.08	W088:31.93	4	87	1	On
77	90	M 468	13 Oct 92	1449	N09:29.16	W084:52.32	2	7	15	Off
77		M 470	13 Oct 92	1521	N09:35.03	W084:50.28	2	7	1	Off
77		M 471	13 Oct 92	1535	N09:37.40	W084:49.62	2	7	3	Off
77		M 478	14 Oct 92	1134	N07:31.32	W084:25.73	2	96	1	On
77		M 485	15 Oct 92	1726	N05:04.71	W085:52.22	4	87	2	On

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Effort
77		J 485	18 Sep 92	710	N02:07.14	W088:56.39	5	96	1	On
77		M 488	17 Oct 92	705	N02:02.64	W086:56.08	4	7	2	On
77		J 497	21 Sep 92	1136	N06:33.40	W084:33.32	4	7	1	On
77		J 498	21 Sep 92	1327	N06:37.87	W084:29.58	3	73	1	On
77		J 500	21 Sep 92	1431	N06:43.00	W084:26.10	3	87	1	On
77		M 503	19 Oct 92	647	N04:27.18	W084:33.41	5	93	1	On
77	10 11 78	M 505	19 Oct 92	804	N04:36.78	W084:25.99	5	73	110	On
77		J 508	23 Sep 92	549	N07:47.41	W083:12.68	3	93	6	On
77		J 509	23 Sep 92	602	N07:48.93	W083:11.12	3	93	1	Off
77	10	M 510	20 Oct 92	802	N05:40.62	W083:19.03	3	7	67	On
77		J 510	23 Sep 92	645	N07:53.61	W083:06.65	3	87	1	On
77		M 513	20 Oct 92	1244	N06:06.28	W083:00.78	3	7	6	On
77		J 513	23 Sep 92	1141	N08:13.83	W083:27.69	3	7	2	Off
77		M 518	21 Oct 92	1153	N07:05.19	W081:54.19	3	15	2	On
77		M 528	22 Oct 92	1622	N06:14.65	W079:17.68	4	7	1	On
77		J 528	25 Sep 92	1042	N08:37.12	W085:39.44	4	7	2	Off
77		J 530	26 Sep 92	1011	N06:58.12	W083:59.67	5	94	5	Off
77		M 531	24 Oct 92	739	N05:10.29	W078:12.21	4	94	1	On
77		J 535	28 Sep 92	730	N07:16.63	W080:01.89	4	94	5	Off
77		J 536	28 Sep 92	920	N07:18.68	W079:52.11	4	7	1	Off
77		J 538	28 Sep 92	1035	N07:22.04	W079:46.10	4	96	1	Off
77		J 541	28 Sep 92	1125	N07:26.99	W079:45.22	4	4	1	Off
77		J 546	4 Oct 92	1626	N07:53.58	W079:13.15	2	95	5	Off
77		M 547	26 Oct 92	1022	N02:51.78	W078:07.88	3	96	12	On
77		J 547	4 Oct 92	1650	N07:50.51	W079:11.68	2	92	4	Off
77		J 548	4 Oct 92	1657	N07:49.52	W079:11.09	2	55	3	Off
77		M 554	27 Oct 92	937	N02:07.87	W078:53.65	4	96	6	On
77		M 556	27 Oct 92	1123	N02:07.21	W079:04.10	4	93	25	On
77		M 557	27 Oct 92	1126	N02:07.47	W079:04.40	4	7	2	On
77		M 562	28 Oct 92	1409	N03:43.34	W080:43.11	5	73	2	On
77		M 563	28 Oct 92	1513	N03:49.16	W080:47.46	5	73	23	On
77		J 563	7 Oct 92	929	N03:51.05	W079:12.10	4	91	2	On
77		M 565	29 Oct 92	958	N03:29.75	W081:30.82	5	73	12	On
77		J 582	8 Oct 92	1751	N02:08.20	W080:55.86	4	74	8	Off
77		J 584	11 Oct 92	1032	N02:35.35	W084:22.97	5	91	2	On
77		J 585	11 Oct 92	1131	N02:29.32	W084:27.67	5	91	1	On
77		J 586	11 Oct 92	1259	N02:25.06	W084:33.39	5	92	1	On
77		J 593	12 Oct 92	1520	N02:45.38	W087:41.35	4	95	1	On
77		J 594	13 Oct 92	549	N03:47.28	W088:46.99	4	74	12	On
77		J 628	15 Oct 92	1421	N07:48.49	W092:53.72	2	97	2	On
77		J 634	15 Oct 92	1707	N08:05.63	W093:10.86	2	95	28	Off
77		J 640	16 Oct 92	1435	N10:00.63	W095:08.62	4	95	2	On
77		J 642	16 Oct 92	1729	N10:19.50	W095:25.74	3	91	1	On
77		J 643	16 Oct 92	1758	N10:21.19	W095:29.92	2	92	10	On
77		J 644	17 Oct 92	658	N10:55.00	W096:05.01	3	74	2	On
77		J 648	18 Oct 92	644	N09:42.83	W097:17.46	3	95	3	On
77		J 658	18 Oct 92	1705	N08:52.19	W097:57.29	2	74	1	On
77		J 674	21 Oct 92	729	N12:03.02	W095:01.67	4	74	3	Off
77		J 677	21 Oct 92	1618	N11:11.24	W095:43.68	5	92	2	On
77		J 686	23 Oct 92	1049	N11:27.63	W099:17.57	5	74	1	On
77		J 715	26 Oct 92	1650	N17:29.43	W102:08.46	3	91	17	Off
77		J 729	27 Oct 92	1626	N19:13.02	W105:07.38	4	92	1	Off
77		J 733	28 Oct 92	710	N20:56.86	W106:11.85	0	92	2	Off
77	02	J 735	28 Oct 92	920	N21:06.63	W106:17.08	0	91	47	Off
77		J 745	28 Oct 92	1346	N21:25.17	W106:39.75	1	74	2	Off
77	90	J 752	29 Oct 92	624	N22:26.46	W108:50.46	2	74	37	Off
77		J 756	29 Oct 92	854	N22:36.15	W109:11.70	2	34	2	Off
77		J 761	29 Oct 92	1246	N22:44.78	W109:48.54	2	55	300	Off
77		J 786	1 Nov 92	1536	N30:29.67	W116:18.21	4	55	250	Off



Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Effort
unidentified small whale										
78		M 6	29 Jul 92	704	N30:28.92	W116:15.84	2	91	1	Off
78		M 32	30 Jul 92	1421	N27:12.24	W114:37.68	2	92	1	Off
78		M 62	1 Aug 92	1631	N22:38.04	W109:40.13	2	74	2	Off
78		J 63	1 Aug 92	809	N25:01.15	W112:41.18	4	87	1	Off
78		M 65	1 Aug 92	1802	N22:42.91	W109:41.47	1	92	1	Off
78		M 94	4 Aug 92	923	N17:21.85	W101:38.78	2	55	4	Off
78		J 102	2 Aug 92	1223	N22:39.23	W109:08.40	1	7	2	Off
78		J 147	5 Aug 92	1622	N16:44.27	W100:16.62	2	93	1	Off
78		M 167	10 Aug 92	1533	N09:28.60	W089:24.46	1	91	1	On
78		M 221	21 Aug 92	1141	N08:02.99	W092:57.45	5	55	9	On
78		M 236	24 Aug 92	703	N09:47.00	W091:17.00	5	97	1	Off
78		J 269	15 Aug 92	1741	N06:57.65	W096:09.75	5	94	2	On
78		J 272	15 Aug 92	1815	N07:01.21	W096:05.43	5	7	1	On
78		M 310	9 Sep 92	1532	N04:32.58	W092:29.03	5	74	1	On
78		J 327	20 Aug 92	729	N11:11.25	W092:11.66	4	93	4	On
78		J 475	15 Sep 92	1258	N03:24.20	W092:26.18	5	73	1	On
78	10 11 77	M 505	19 Oct 92	804	N04:36.78	W084:25.99	5	73	110	On
78		M 532	24 Oct 92	801	N05:09.66	W078:09.17	4	102	2	On
78		M 533	24 Oct 92	823	N05:09.13	W078:06.43	4	102	3	On
78		M 561	27 Oct 92	1738	N02:44.89	W079:46.22	4	7	13	On
78		J 607	14 Oct 92	1319	N06:09.76	W091:05.41	2	91	2	On
78		J 647	17 Oct 92	1424	N10:06.86	W096:50.79	5	74	2	On
78		J 722	27 Oct 92	1107	N18:47.41	W104:27.85	2	91	3	Off
78		J 724	27 Oct 92	1254	N18:55.46	W104:43.09	3	34	1	Off
78		J 759	29 Oct 92	1051	N22:41.61	W109:32.44	2	91	1	Off
78		J 783	1 Nov 92	1306	N30:14.02	W116:10.00	3	74	1	Off
unidentified large whale										
79		M 14	29 Jul 92	1149	N29:50.76	W115:59.28	2	74	1	Off
79		M 63	1 Aug 92	1654	N22:38.70	W109:47.03	2	97	1	Off
79		J 100	2 Aug 92	1208	N22:39.51	W109:11.10	1	7	1	Off
79		M 118	7 Aug 92	823	N13:17.09	W090:46.16	2	91	1	Off
79		M 150	9 Aug 92	1736	N10:15.29	W088:46.15	3	92	1	On
79		M 200	14 Aug 92	1650	N05:31.49	W093:21.83	4	55	17	On
79		M 201	17 Aug 92	1214	N03:56.68	W095:05.61	5	74	1	On
79		M 215	20 Aug 92	1348	N07:30.36	W093:35.93	3	95	1	Off
79		J 239	12 Aug 92	649	N09:52.07	W095:10.47	3	73	1	On
79		M 311	9 Sep 92	1631	N04:28.73	W092:32.93	5	95	1	On
79		M 336	14 Sep 92	931	N03:28.61	W091:37.48	4	74	1	On
79		J 349	24 Aug 92	757	N12:16.90	W090:44.45	3	87	1	On
79		M 389	24 Sep 92	1626	N08:38.16	W086:23.00	2	97	1	Off
79		M 398	26 Sep 92	1315	N05:28.12	W082:32.06	4	91	1	On
79		M 437	7 Oct 92	1734	N03:59.48	W081:02.43	4	93	2	On
79		M 451	12 Oct 92	1324	N04:53.24	W085:55.94	3	87	1	On
79		J 466	13 Sep 92	1220	N03:50.36	W089:12.78	5	94	1	On
79		J 471	14 Sep 92	1738	N02:04.25	W090:51.91	4	94	1	On
79		J 472	14 Sep 92	1753	N02:02.99	W090:53.86	4	73	1	Off
79		M 493	17 Oct 92	1718	N03:10.02	W085:45.52	4	7	1	On
79		M 498	18 Oct 92	1225	N03:53.93	W085:06.33	4	102	1	On
79		M 519	21 Oct 92	1325	N07:08.77	W081:44.07	3	73	1	On
79		J 599	13 Oct 92	1518	N04:43.31	W089:33.45	3	34	1	On
79		J 651	18 Oct 92	1010	N09:18.97	W097:27.93	2	74	1	Off
79		J 653	18 Oct 92	1224	N09:07.99	W097:39.92	3	97	1	On
79		J 654	18 Oct 92	1303	N09:04.25	W097:42.62	3	91	1	On
79		J 685	23 Oct 92	902	N11:18.05	W099:26.54	4	95	1	On
79		J 688	23 Oct 92	1139	N11:33.46	W099:12.73	5	74	1	On
79		J 743	28 Oct 92	1316	N21:22.24	W106:37.52	1	74	3	Off

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Efort
Kogia simus/breviceps										
80		J 515	23 Sep 92	1327	N08:21.95	W083:39.82	3	4	2	Off
80		J 741	28 Oct 92	1226	N21:18.01	W106:34.98	1	4	2	Off
Mesoplodon species A.										
83		M 349	17 Sep 92	1014	N05:31.22	W086:31.85	5	74	1	On
83		J 747	28 Oct 92	1430	N21:26.81	W106:45.31	1	92	3	Off
Stenella longirostris centroamericana										
88		M 114	7 Aug 92	633	N13:21.21	W091:00.96	2	95	360	Off
88		M 125	7 Aug 92	1119	N13:06.97	W090:22.39	2	55	1283	Off
88	77	M 130	7 Aug 92	1559	N12:58.81	W089:50.94	3	95	625	Off
88		M 279	3 Sep 92	1142	N10:42.90	W086:25.33	4	91	1033	On
88		M 282	3 Sep 92	1445	N10:36.27	W086:26.72	5	74	567	Off
88		J 373	25 Aug 92	936	N13:00.45	W090:00.53	2	73	1123	Off
88		J 374	25 Aug 92	1040	N12:58.27	W090:06.34	2	94	70	Off
88		J 376	25 Aug 92	1423	N12:58.63	W089:58.30	2	7	163	Off
Stenella attenuata (unidentified subspecies)										
90		M 73	2 Aug 92	1511	N21:40.28	W105:56.08	4	97	17	Off
90		M 137	8 Aug 92	1154	N11:50.71	W087:15.90	4	74	8	On
90		J 176	8 Aug 92	1337	N13:30.26	W091:28.92	3	96	5	On
90		M 277	3 Sep 92	1028	N10:47.90	W086:16.03	4	91	11	On
90		J 362	25 Aug 92	602	N13:24.60	W089:35.89	1	94	48	On
90		J 364	25 Aug 92	631	N13:23.24	W089:39.31	1	4	3	Off
90		J 366	25 Aug 92	647	N13:21.30	W089:41.24	1	7	5	On
90		J 367	25 Aug 92	653	N13:20.64	W089:41.89	1	96	4	On
90		J 368	25 Aug 92	658	N13:20.03	W089:42.50	2	96	5	On
90		M 405	28 Sep 92	800	N07:40.44	W079:19.10	4	102	4	On
90		J 412	5 Sep 92	1015	N09:03.49	W084:07.97	1	80	66	On
90		J 413	5 Sep 92	1122	N09:00.39	W084:11.77	2	80	52	On
90		M 414	4 Oct 92	1406	N08:27.88	W079:23.66	4	87	16	Off
90		J 415	5 Sep 92	1155	N08:57.02	W084:13.65	2	7	14	Off
90		M 415	4 Oct 92	1545	N08:14.85	W079:13.74	4	102	2	Off
90		M 417	4 Oct 92	1648	N08:08.00	W079:05.38	3	7	10	Off
90	77	M 468	13 Oct 92	1449	N09:29.16	W084:52.32	2	7	15	Off
90		M 472	13 Oct 92	1539	N09:38.14	W084:49.41	2	87	2	Off
90		J 518	23 Sep 92	1527	N08:29.89	W083:53.60	3	93	14	Off
90		M 520	21 Oct 92	1437	N07:10.18	W081:32.86	4	7	83	On
90		J 521	24 Sep 92	707	N08:42.31	W084:07.12	4	73	35	Off
90		J 522	24 Sep 92	1022	N08:58.78	W084:16.10	2	73	53	Off
90		J 525	24 Sep 92	1509	N09:17.63	W084:40.79	4	94	9	Off
90		M 537	24 Oct 92	1511	N04:32.52	W077:29.01	2	73	20	On
90	18 06	J 537	28 Sep 92	925	N07:18.92	W079:51.47	4	7	94	Off
90		M 539	24 Oct 92	1652	N04:22.55	W077:31.45	2	93	60	Off
90	18	J 542	28 Sep 92	1514	N08:01.53	W079:34.36	4	96	30	Off
90		M 543	25 Oct 92	1609	N03:03.91	W077:56.61	4	94	37	On
90		J 718	27 Oct 92	814	N18:35.29	W104:05.41	2	4	14	Off
90		J 719	27 Oct 92	845	N18:35.78	W104:08.60	2	55	170	Off
90		J 723	27 Oct 92	1236	N18:53.89	W104:40.55	3	55	200	Off
90	77	J 752	29 Oct 92	624	N22:26.46	W108:50.46	2	74	37	Off
unidentified cetacean										
96		M 239	24 Aug 92	1043	N10:02.00	W091:02.00	5	97	1	Off
96		J 264	15 Aug 92	721	N05:47.63	W097:12.18	5	7	1	On
96		M 346	16 Sep 92	1051	N06:07.57	W088:56.73	4	55	1	On
96		J 351	24 Aug 92	940	N12:24.76	W090:33.61	3	94	1	On
96		J 389	1 Sep 92	1626	N11:27.72	W089:27.33	4	94	1	On
96		J 402	4 Sep 92	1011	N09:40.44	W086:40.39	3	73	1	On
96		M 469	13 Oct 92	1459	N09:31.31	W084:51.56	2	93	4	Off

Table 4. (continued)

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft. no.	Obs. size	School	Effort
96		M 490	17 Oct 92	1232	N02:40.21	W086:19.98	5	102	1	On
96		J 608	14 Oct 92	1434	N06:16.78	W091:13.83	2	55	3	On
96		J 609	14 Oct 92	1530	N06:22.82	W091:20.16	1	95	7	On
unidentified object										
97		J 87	1 Aug 92	1549	N24:14.99	W111:58.72	4	96	24	Off
unidentified whale										
98		M 20	30 Jul 92	949	N27:26.82	W114:51.00	2	97	1	Off
98		M 21	30 Jul 92	1000	N27:25.38	W114:49.68	2	74	1	Off
98		M 199	14 Aug 92	1133	N06:03.54	W092:50.26	3	91	1	On
98		J 260	13 Aug 92	1751	N07:48.98	W097:12.36	4	99	2	Off
98		J 270	15 Aug 92	1742	N06:57.72	W096:09.66	5	96	3	On
98		M 382	24 Sep 92	740	N07:59.86	W087:00.80	3	95	6	On
98		J 680	22 Oct 92	1152	N10:33.51	W098:19.66	3	95	1	On
<i>Balaenoptera borealis/edeni</i>										
99		M 47	31 Jul 92	1516	N24:53.94	W112:24.66	4	74	2	Off
99		M 50	31 Jul 92	1724	N24:39.72	W112:22.08	4	55	1	Off
99		J 52	31 Jul 92	1643	N26:42.41	W114:04.79	4	4	1	Off
99	70	J 61	1 Aug 92	711	N25:06.01	W112:46.00	4	94	9	Off
99		J 62	1 Aug 92	756	N25:02.93	W112:42.61	4	7	1	Off
99	76 77	J 68	1 Aug 92	920	N24:53.99	W112:36.61	3	87	9	Off
99		J 82	1 Aug 92	1443	N24:21.70	W112:07.63	3	4	1	Off
99		J 83	1 Aug 92	1448	N24:21.07	W112:06.81	3	7	1	Off
99		M 128	7 Aug 92	1241	N13:06.12	W090:11.14	2	74	1	Off
99		J 185	8 Aug 92	1710	N13:13.25	W091:45.81	1	7	1	On
99		M 189	11 Aug 92	1204	N08:48.16	W090:02.33	1	91	1	On
99		M 205	18 Aug 92	1750	N05:38.96	W095:14.27	4	74	1	On
99		M 244	24 Aug 92	1524	N10:26.00	W090:34.00	5	91	1	Off
99		M 245	24 Aug 92	1600	N10:29.00	W090:32.00	5	97	1	Off
99		M 320	12 Sep 92	751	N02:01.03	W093:27.51	3	95	3	Off
99		M 335	14 Sep 92	752	N03:19.29	W091:46.72	5	55	1	On
99		M 339	14 Sep 92	1131	N03:41.95	W091:25.37	5	95	1	On
99		J 469	14 Sep 92	959	N02:50.89	W090:06.59	5	93	1	On
99		J 473	15 Sep 92	619	N02:46.73	W091:46.72	4	7	1	On
99		J 482	17 Sep 92	1040	N02:18.70	W091:19.20	4	7	1	Off
99		J 483	17 Sep 92	1353	N02:12.02	W091:09.83	5	94	1	On
99		J 488	18 Sep 92	1035	N02:23.93	W088:42.68	5	96	2	On
99		J 489	18 Sep 92	1156	N02:33.56	W088:34.48	5	96	2	On
99		M 497	18 Oct 92	1139	N03:48.86	W085:09.00	5	94	1	On
99		J 504	22 Sep 92	1020	N07:10.86	W083:46.89	2	4	1	Off
99		J 598	13 Oct 92	1454	N04:41.31	W089:33.18	3	97	2	On

Table 4. Pinniped sightings

Code	Other Codes	Sighting Number	Date	Time	Latitude	Longitude	Bft.	Obs. no.	School size	Effort
unidentified pinniped										
PU		J 10	29 Jul 92	1423	N29:21.92	W115:28.91	4	73	1	Off
PU		J 11	29 Jul 92	1428	N29:21.46	W115:28.13	4	73	1	Off
PU		J 19	29 Jul 92	1751	N29:07.45	W115:10.71	3	73	1	Off
unidentified sea lion										
UO		J 6	29 Jul 92	1353	N29:24.82	W115:33.64	4	7	1	Off
<i>Zalophus californianus</i>										
ZC		J 7	29 Jul 92	1418	N29:22.39	W115:29.68	4	73	1	Off
ZC		J 8	29 Jul 92	1420	N29:22.25	W115:29.45	4	87	1	Off
ZC		J 12	29 Jul 92	1430	N29:21.22	W115:27.71	4	87	2	Off
ZC		J 13	29 Jul 92	1458	N29:18.44	W115:23.09	4	73	2	Off
ZC		J 14	29 Jul 92	1507	N29:17.48	W115:21.47	4	73	1	Off
ZC		J 15	29 Jul 92	1608	N29:15.72	W115:18.78	4	7	1	Off
ZC		J 16	29 Jul 92	1639	N29:12.87	W115:13.89	4	96	1	Off
ZC		J 17	29 Jul 92	1646	N29:12.09	W115:12.70	4	7	1	Off
ZC		J 20	29 Jul 92	1759	N29:06.65	W115:09.46	4	73	1	Off
ZC		J 21	29 Jul 92	1815	N29:05.08	W115:06.97	4	87	1	Off
ZC		J 23	29 Jul 92	1826	N29:04.06	W115:05.25	4	87	1	Off
ZC		J 24	29 Jul 92	1831	N29:03.57	W115:04.43	4	73	1	Off
ZC		J 25	29 Jul 92	1839	N29:02.90	W115:03.22	4	87	1	Off
ZC		J 26	29 Jul 92	1840	N29:02.75	W115:02.95	4	73	1	Off
<i>Phoca vitulina</i>										
PV		J 9	29 Jul 92	1420	N29:22.24	W115:29.43	4	73	1	Off

Table 5. PODS 92 Sighting Summary. Number of Schools Sighted includes both on-effort and off-effort sightings. A mixed species sighting is counted once for each species present in the sighting; thus, the total of mixed sightings exceeds the 106 sightings of mixed schools.

Species Code	Name	No. Schools Sighted			Average School size
		Pure	Mixed	Total	
02	<i>Stenella attenuata</i> (offshore)	105	45	150	83.3
03	<i>Stenella longirostris</i> (unid. subsp.)	4	4	8	770.0
05	<i>Delphinus delphis</i> (unid. subspecies)	13	2	15	60.3
06	<i>Stenella attenuata graffmani</i>	25	2	27	39.8
10	<i>Stenella longirostris orientalis</i>	19	30	49	167.0
11	<i>Stenella longirostris hybrid</i>	0	7	7	137.3
13	<i>Stenella coeruleoalba</i>	171	1	172	58.1
15	<i>Steno bredanensis</i>	27	9	36	14.2
16	<i>Delphinus delphis</i> (long-beak)	51	2	53	125.1
17	<i>Delphinus delphis</i> (short-beak)	105	3	108	146.4
18	<i>Tursiops truncatus</i>	113	47	160	14.9
21	<i>Grampus griseus</i>	48	8	56	9.0
22	<i>Lagenorhynchus obliquidens</i>	12	3	15	13.2
31	<i>Peponocephala electra</i>	2	1	3	480.8
32	<i>Feresa attenuata</i>	2	0	2	19.0
33	<i>Pseudorca crassidens</i>	1	2	3	10.5
36	<i>Globicephala macrorhynchus</i>	21	25	46	9.4
37	<i>Orcinus orca</i>	4	1	5	3.2
46	<i>Physeter macrocephalus</i>	38	4	42	6.6
48	<i>Kogia simus</i>	15	0	15	1.7
49	ziphiid whale	13	0	13	1.8
51	<i>Mesoplodon species</i>	10	0	10	2.3
59	<i>Mesoplodon densirostris</i>	2	0	2	1.5
61	<i>Ziphius cavirostris</i>	6	0	6	1.8
63	<i>Berardius bairdii</i>	5	0	5	19.4
70	<i>Balaenoptera species</i>	23	2	25	1.3
71	<i>Balaenoptera acutorostrata</i>	2	0	2	1.0
72	<i>Balaenoptera edeni</i>	14	1	15	1.6
74	<i>Balaenoptera physalus</i>	1	0	1	1.0
75	<i>Balaenoptera musculus</i>	18	1	19	1.6
76	<i>Megaptera novaeangliae</i>	13	1	14	1.9
77	unidentified dolphin	217	11	228	12.8
78	unidentified small whale	25	1	26	2.4
79	unidentified large whale	29	0	29	1.7
80	<i>Kogia simus/breviceps</i>	2	0	2	2.0
83	<i>Mesoplodon species A.</i>	2	0	2	2.0
88	<i>Stenella longirostris centroamericana</i>	7	1	8	649.2
90	<i>Stenella attenuata</i> (unid. subspecies)	28	4	32	34.3
96	unidentified cetacean	10	0	10	2.1
97	unidentified object	1	0	1	24.0
98	unidentified whale	7	0	7	2.1
99	<i>Balaenoptera borealis/edeni</i>	24	2	26	1.4
PU	unidentified pinniped	3	0	3	1.0
UO	unidentified sea lion	1	0	1	1.0
ZC	<i>Zalophus californianus</i>	14	0	14	1.1
PV	<i>Phoca vitulina</i>	1	0	1	1.0

Table 6. PODS 92 Schools of Mixed Species Composition. For an explanation of species codes and abbreviations, see Table 9.

Species 1	Species 2	Species 3	Species 4	Total
02 OFFSH_SPOT	03 UNID_SPINR			4
02 OFFSH_SPOT	10 EAST_SPINR	18 TURSIOPS		2
02 OFFSH_SPOT	10 EAST_SPINR			26
02 OFFSH_SPOT	11 WBEL_SPINR	72 BRYDES_WHL		1
02 OFFSH_SPOT	11 WBEL_SPINR			5
02 OFFSH_SPOT	18 TURSIOPS			1
02 OFFSH_SPOT	36 SHRT_PILOT			1
02 OFFSH_SPOT	77 UNID_DOLPH			1
10 EAST_SPINR	11 WBEL_SPINR	77 UNID_DOLPH	78 UNID_SM_WH	1
10 EAST_SPINR	77 UNID_DOLPH			1
15 STENO	02 OFFSH_SPOT			2
15 STENO	13 STRIPED			1
15 STENO	18 TURSIOPS			5
16 LONGB_COMM	22 P_WHT_SIDE			1
17 SHRTB_COMM	02 OFFSH_SPOT			2
17 SHRTB_COMM	16 LONGB_COMM			1
18 TURSIOPS	06 COAST_SPOT			1
18 TURSIOPS	21 GRAMPUS			6
18 TURSIOPS	21 GRAMPUS	36 SHRT_PILOT		1
18 TURSIOPS	77 UNID_DOLPH			2
21 GRAMPUS	77 UNID_DOLPH			1
22 P_WHT_SIDE	05 UNID_COMM			2
31 MELON_HEAD	15 STENO			1
33 FALSE_KLLR	18 TURSIOPS			1
33 FALSE_KLLR	37 KILLER_WHA			1
36 SHRT_PILOT	18 TURSIOPS			22
36 SHRT_PILOT	77 UNID_DOLPH			1
46 SPERM_WHAL	18 TURSIOPS			4
75 BLUE_WHALE	70 UNID_RORQL			1
88 C_A_SPINNR	77 UNID_DOLPH			1
90 UNID_SPOT	18 TURSIOPS			1
90 UNID_SPOT	18 TURSIOPS	06 COAST_SPOT		1
90 UNID_SPOT	77 UNID_DOLPH			2
99 SEI/BRYDES	70 UNID_RORQL			1
99 SEI/BRYDES	76 HUMPEACK_W	77 UNID_DOLPH		1

Table 7. PODS 92 Effort and Sighting Rates by sea state and swell height.

Sea state (Beaufort)				Swell height (ft)			
Bft.	Nmi of effort	# of Sightings	Sightings/ 1000 nm	Height	Nmi of effort	# of Sightings	Sightings/ 1000 nm
0	11.1	7	632.65	0	4.1	1	243.15
1	201.9	70	346.79	1	104.0	16	153.87
2	788.1	159	201.75	2	951.1	146	153.50
3	1477.7	184	124.52	3	3191.8	310	97.12
4	2955.8	211	71.38	4	2911.9	239	82.08
5	2956.6	137	46.34	5	1019.5	53	51.99
6	8.1	0	0.00	6	212.3	3	14.13
				8	4.4	0	0.00
Total	8399.2	768	91.44	Total	8399.4	768	91.44

Table 8. PODS 92 Observer Sighting Rates by observer number. The twelve primary observers conducted observations during the regular watch rotations. Secondary observers or other scientific personnel substituted on the 25X binoculars when needed or served in the independent observer position.

	Observer Number	Miles Searched	Number of Sightings	Sightings/1000 nm
Primary Observers	7	2282.6	80	35.05
	55	1939.4	83	42.80
	73	2247.0	95	42.28
	74	1929.6	66	34.20
	87	2105.6	38	18.05
	91	1929.6	55	28.50
	92	1935.0	47	24.29
	93	2199.4	36	16.37
	94	2328.3	75	32.21
	95	1931.9	59	30.54
	96	2283.6	61	26.71
	97	1872.5	45	24.03
	Total	24984.5	740	29.62
Secondary Observers	4	9.7	1	103.25
	15	688.5	2	2.90
	19	566.5	1	1.77
	34	747.7	3	4.01
	56	265.0	0	.00
	67	370.7	0	.00
	80	864.1	4	4.63
	81	977.3	0	.00
	84	916.5	1	1.09
	90	329.3	3	9.11
	99	63.4	0	.00
	100	464.3	0	.00
	101	573.4	2	3.49
102	1775.6	11	6.19	
Total	8612.0	28	3.25	

Table 9. SWFSC Marine Mammal Species Code List.

Code	Alpha Code	Species or classification	Common name
01	MESOP_PERU	Mesoplodon peruvianus	Pygmy beaked whale
02	OFFSH_SPOT	Stenella attenuata (offshore)	Offshore pantropical spotted dolphin
03	UNID_SPINR	Stenella longirostris (unidentified subspecies)	Unidentified spinner dolphin
04	CLYMENE	Stenella clymene	Clymene or short-snouted spinner dolphin
05	UNID_COMM	Delphinus delphis (unid. subsp.)	Unidentified common dolphin
06	COAST_SPOT	Stenella attenuata graffmani	Coastal spotted dolphin
07	SOTALIA	Sotalia fluviatilis	Tucuxi, Guiana dolphin
08	ORCAELLA	Orcaella brevirostris	Irrawaddy dolphin
09	SPECTACLED	Australophocaena dioptrica	Spectacled porpoise
10	EAST_SPINR	Stenella longirostris orientalis	Eastern spinner dolphin
11	WBEL_SPINR	Stenella longirostris hybrid	Whitebelly spinner dolphin
12	WHITE-BEAK	Lagenorhynchus albirostris	White-beaked dolphin
13	STRIPED	Stenella coeruleoalba	Striped dolphin, streaker
14	A_WHT_SIDE	Lagenorhynchus acutus	Atlantic white-sided dolphin
15	STENO	Steno bredanensis	Rough-toothed dolphin, Steno
16	LONGB_COMM	Delphinus delphis (long-beak)	Baja neritic common dolphin, longbeaked common dolphin
17	SHRTB_COMM	Delphinus delphis (short-beak)	Offshore common dolphin, shortbeaked common dolphin
18	TURSIOPS	Tursiops truncatus	Bottlenose dolphin
19	HEAVISIDES	Cephalorhynchus heavisidii	Heaviside's dolphin
20	HECTORS	Cephalorhynchus hectori	Hector's or pied dolphin
21	GRAMPUS	Grampus griseus	Risso's dolphin, grampus
22	P_WHT_SIDE	Lagenorhynchus obliquidens	Pacific white-sided dolphin
23	PEALES	Lagenorhynchus australis	Peale's dolphin, blackchin
24	HOURLASS	Lagenorhynchus cruciger	Hourglass dolphin
25	DUSKY	Lagenorhynchus obscurus	Dusky dolphin
26	FRASERS	Lagenodelphis hosei	Fraser's or Sarawak dolphin
27	LISSO BOR	Lissodelphis borealis	Northern right whale dolphin
28	LISSO PER	Lissodelphis peronii	Southern right-whale dolphin
29	BLACK DOL	Cephalorhynchus eutropia	Black or Chilean dolphin
30	COMMERSONS	Cephalorhynchus commersonii	Commerson or piebald dolphin
31	MELON_HEAD	Peponocephala electra	Melon-headed whale, electra dolphin
32	PYGMY_KLLR	Feresa attenuata	Pygmy killer whale, slender blackfish
33	FALSE_KLLR	Pseudorca crassidens	False killer whale
34	GLOBI_SPP	Globicephala spp.	Unidentified pilot whale
35	LONG_PILOT	Globicephala melas	Long-finned pilot whale, Atlantic pilot whale
36	SHRT_PILOT	Globicephala macrorhynchus	Short-finned pilot whale
37	KILLER_WHA	Orcinus orca	Killer whale
38	SOUSA_CHIN	Sousa chinensis	Indo-Pacific hump-backed or white dolphin
39	SOUSA_TEUS	Sousa teuszii	Atlantic hump-backed dolphin
40	HARBR_PORP	Phocoena phocoena	Harbor porpoise, herring hog
41	VAQUITA	Phocoena sinus	Vaquita, Gulf of California harbor porpoise
42	BURMEISTER	Phocoena spinipinnis	Burmeister or black porpoise
43	BL_FINLESS	Neophocaena phocaenoides	Black finless porpoise
44	DALLS_PORP	Phocoenoides dalli	Dall's porpoise
45	BELUGA	Delphinapterus leucas	White whale, beluga
46	SPERM_WHAL	Physeter macrocephalus	Sperm whale
47	PYGMYSPERM	Kogia breviceps	Pygmy sperm whale
48	DWARFSPERM	Kogia simus	Dwarf sperm whale
49	ZIPHIID_WH	ziphiid whale	Unidentified beaked whale
50	HYPERO_PLN	Hyperoodon planifrons	Southern bottlenose whale
51	MESOP_SPP	Mesoplodon spp.	Unidentified Mesoplodon
52	MESOP_CARL	Mesoplodon carlhubbsi	Hubb's beaked whale, archbeak whale

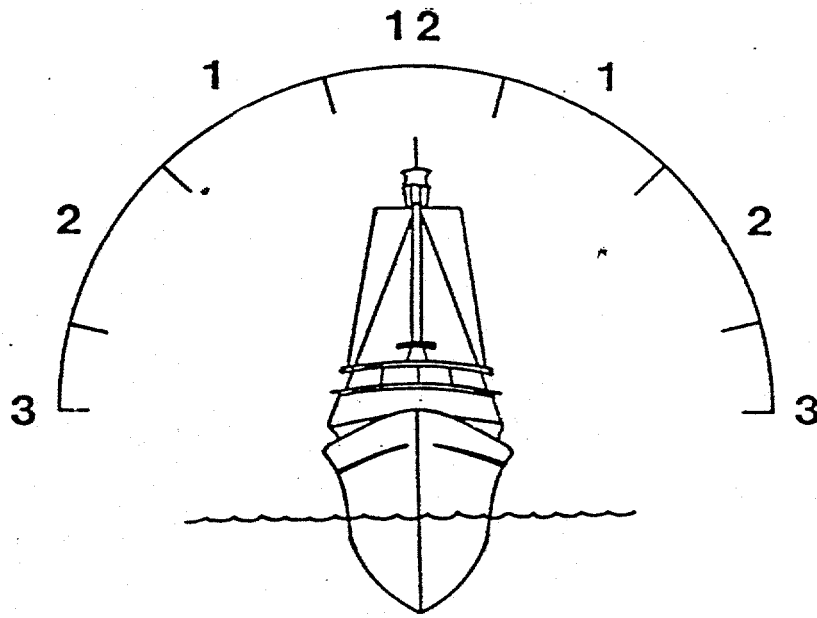


53	MESOP_HECT	Mesoplodon hectori	Hector's beaked whale
54	MESOP_BOWD	Mesoplodon bowdoini	Andrew's beaked whale
55	MESOP_EURO	Mesoplodon europaeus	Gervais' beaked whale, Antillean beaked whale
56	MESOP_BDNS	Mesoplodon bidens	Sowerby's beaked whale
57	MESOP_GNKO	Mesoplodon ginkgodens	Ginkgo-toothed beaked whale
58	MESOP_GRAY	Mesoplodon grayi	Gray's beaked whale
59	MESOP_DENS	Mesoplodon densirostris	Blaineville's beaked whale, tropical beaked whale
60	MESOP_LAYA	Mesoplodon layardii	Strap-toothed whale
61	ZIPHI_CAVI	Ziphius cavirostris	Cuvier's beaked whale
62	BERARD_ARN	Berardius arnuxii	Arnoux's beaked whale, southern giant bottlenose
63	BERARD_BAI	Berardius bairdii	Baird's beaked whale, nothern giant bottlenose
64	TASMA_SHEP	Tasmacetus shepherdi	Shepherd's beaked whale
65	MESOP_PACI	Mesoplodon pacificus	Longman's beaked whale, Indo-Pacific beaked whale
66	N_RIGHT_WH	Eubalaena glacialis	Northern right whale
67	BOWHEAD_WH	Balaena mysticetus	Bowhead whale
68	PYGMY_RGHT	Caperea marginata	Pygmy right whale
69	GRAY_WHALE	Eschrichtius robustus	Gray whale
70	UNID_RORQL	Balaenoptera spp.	Unidentified Rorqual
71	MINKE_WHAL	Balaenoptera acutorostrata	Minke whale
72	BRYDES_WHL	Balaenoptera edeni	Bryde's whale
73	SEI_WHALE	Balaenoptera borealis	Sei whale
74	FIN_WHALE	Balaenoptera physalus	Fin whale
75	BLUE_WHALE	Balaenoptera musculus	Blue whale
76	HUMPBAC W	Megaptera novaeangliae	Humpback whale
77	UNID_DOLPH	unid. dolphin	Unid. dolphin or porpoise
78	UNID_SM WH	unid. small whale	Unidentified small whale
79	UNID_LG WH	unid. large whale	Unidentified large whale
80	KOGIA_SPP	Kogia simus/breviceps	Dwarf or pygmy sperm whale
81	MESOP_STEJ	Mesoplodon stejnegeri	Steinger's beaked whale
82	MESOP_MIRU	Mesoplodon mirus	True's Beaked Whale
83	MESOP_SP_A	Mesoplodon sp. A	Unnamed beaked whale
84	HYPERO AMP	Hyperoodon ampullatus	N. Atlantic bottlenose whale
85	NARWHAL	Monodon monoceros	Narwhal, sea unicorn
86	S RIGHT WH	Eubalaena australis	Southern right whale
87	FRANCISCAN	Pontoporia blainvillei	Franciscana, La Plata dolphin
88	C_A SPINNR	Stenella longirostris centroamericana	Central American spinner or Costa Rican spinner
89	UNID_SPOT	Stenella attenuata/plagidon	Unidentified spotted dolphin in Atlantic
90	UNID_SPOT	Stenella attenuata (unid. subsp.)	Unidentified pantropical spotted dolphin
91	AT SPOTTED	Stenella frontalis	Atlantic spotted dolphin
92	GANGES_DOL	Platanista gangetica	Ganges susu, Ganges dolphin
93	INDUS_DOL	Platanista minor	Indus susu, Indus dolphin
94	INIA	Inia geoffrensis	Boto, Amazon river dolphin
95	LIPOTES	Lipotes vexillifer	Baiji, Chinese river dolphin
96	UNID_CETAC	unid. cetacean	Unidentified cetacean
97	UNID_OBJCT	unid. object	Unidentified object, possible marine mammal
98	UNID_WHALE	unid. whale	Unidentified whale
99	SEI/BRYDES	Balaenoptera borealis/edeni	Rorqual identified as a Sei or Bryde's whale
PU	UNID_PINNI	unid. pinniped	Unidentified pinniped
UO	UNID_OTARI	unid. sea lion	Unidentified sea lion
EJ	STELLAR_SL	Eumetopias jubatus	Stellar sea lion
ZC	CA SEALION	Zalophus californianus	California sea lion
UA	UNID_FURSL	unid. fur seal	Unidentified fur seal
AT	GUAD_FURSL	Arctocephalus townsendi	Guadalupe fur seal
CU	NO_FURSEAL	Callorhinus ursinus	Northern fur seal
US	UNID_SEAL	unid. seal	Unidentified seal
MA	N ELEPHN_S	Mirounga angustirostris	Northern elephant seal
PV	HARBR_SEAL	Phoca vitulina	Harbor seal

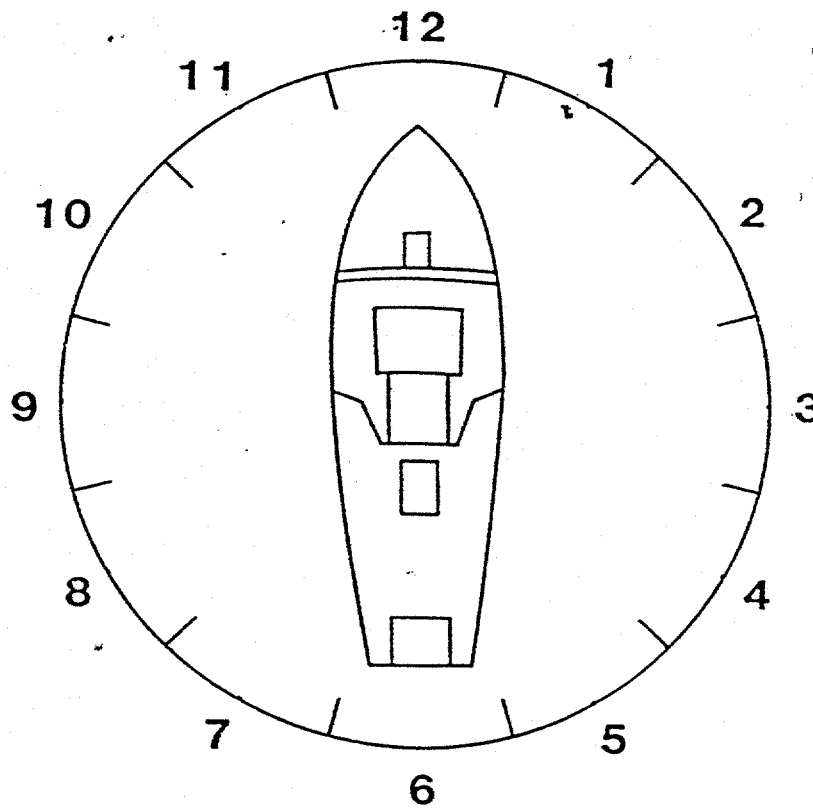
Table 10. SWFSC Marine Mammal Observer Code List.

001	Freidrichsen, Gary	053	Winn, Kate
002	Grieser, Steve	054	Dollarhide, Vince
003	Lindsay, Rick	055	Benson, Scott
004	Pitman, Robert	056	LeDuc, Rick
005	Sinclair, Scott	057	Lynn, Morgan
006	Tumosa, Tom	058	Buckland, Steve
007	Cotton, Jim	059	Stangl, Pete
008	Doxey, Jack	060	Dizon, Andy
009	Graybill, Mike	061	Robertson, Larry
010	Henry, Mike	062	Brownell, Kurt
011	Yee, Greg	063	Bisbee, Carla
012	DeMaster, Doug	064	Skordal, Dave
013	Ferm, Lisa	065	Reilly, Steve
014	Scott, Mike	066	Edwards, Liz
015	Barlow, Jay	067	LeDuc, Carrie
016	Holt, Rennie	068	Rittmaster, Ketih
017	Hawes, Sandy	069	Raffeto, Joe
018	Cowan, Bob	070	Thayer, Vickie
019	Lowry, Mark	071	Caretta, James
020	Jackson, Al	072	Hill, Scott
021	Noel, Mike	073	Rowlett, Richard
022	Irwin, Bill	074	Smith, Brian
023	Hewitt, Roger	075	Leopold, Scott
024	Parks, Wes	076	Armstrong, Wes
025	Hohn, Aleta	077	Everhart, Darlene
026	Wells, Randy	078	Palka, Debbie
027	Berkson, Jim	079	Holland, Robert
028	Shane, Susan	080	Gilpatrick, jim
029	Chivers, Susan	081	Fiedler, Paul
030	Read, Andy	082	Cassano, Ed
031	Webber, Marc	083	Wade, Paul
032	Szczepaniak, Isidore	084	Gerrodette, Tim
033	Mizroch, Sally	085	Archer, Eric
034	Taylor, Barbara	086	Forney, Karin
035	Sexton, Stephanie	087	Lycan, Mary
036	Videl, Omar	088	Mellon, Robyn
037	Diamond, Sandy	089	Philbrick, Valerie
038	Newcomer, Michael	090	Mangels, Karl
039	Sechiguchi, Keiko	091	Kinzey, Doug
040	Flanders, Joanna	092	Olson, Paula
041	Sibler, Greg	093	Farley, Terry
042	Wexler, Jeanie	094	Mitchell, Liz
043	Mann, Frances	095	Quan, Jennifer
044	Robles, Alejandro	096	Miller, Scott
045	Kruse, Sue	097	Rivers, Julie
046	Boveng, Peter	098	Force, Mike
047	Bragg, Sharon	099	Others
048	Troutman, Barry	100	Westlake, Robin
049	Goetz, Betty	101	Nicolas, John
050	Rasmussen, Randy	102	Sponer, Renate
051	Beavers, Sallie	103	Sisson, Joyce
052	Heimlich-Boran, Sara		

Figure 1. Vertical and Horizontal Sun Positions.



**VERTICAL SUN POSITION**



**HORIZONTAL SUN POSITION**

Figure 2. SWFSC PODS 92 Sighting Form

CRUISE =	DATE			SIGHT =	SERIES =	LEG =	OBS CODE
	YEAR	MONTH	DAY				
1	5	7	9	11	13	15	17

**SIGHTING SUMMARY**

LIST ALL DIAGNOSTIC FEATURES OBSERVED  
(INCLUDING ESTIMATED BODY LENGTH)

SKETCH FEATURES OF ANIMALS SIGHTED

BEHAVIOR - (DESCRIBE AGGREGATION, MOVEMENT, BOW AND STERN RIDING, BLOWS, ETC.)

MOVEMENT OF SCHOOL : SPEED (KTS)

DIRECTION (RELATIVE TO BOW)

ASSOCIATED ANIMALS - (INCLUDE NUMBER AND SPECIES OF BIRDS)

PHOTOS: ROLL #

FRAME(S) #

TOTAL TIME OF OBSERVATION

ENVIR. COND. (RAIN, OVERCAST, FOG, CHOPPY)

CLOSEST DISTANCE OF OBSERVATION

AMT. OF TIME AT CLOSEST DISTANCE

TAGS ASSOCIATED WITH SIGHTING

METHOD OF OBSERVATION (EYE, 7x, 10x, 25x)

NORTH LATITUDE

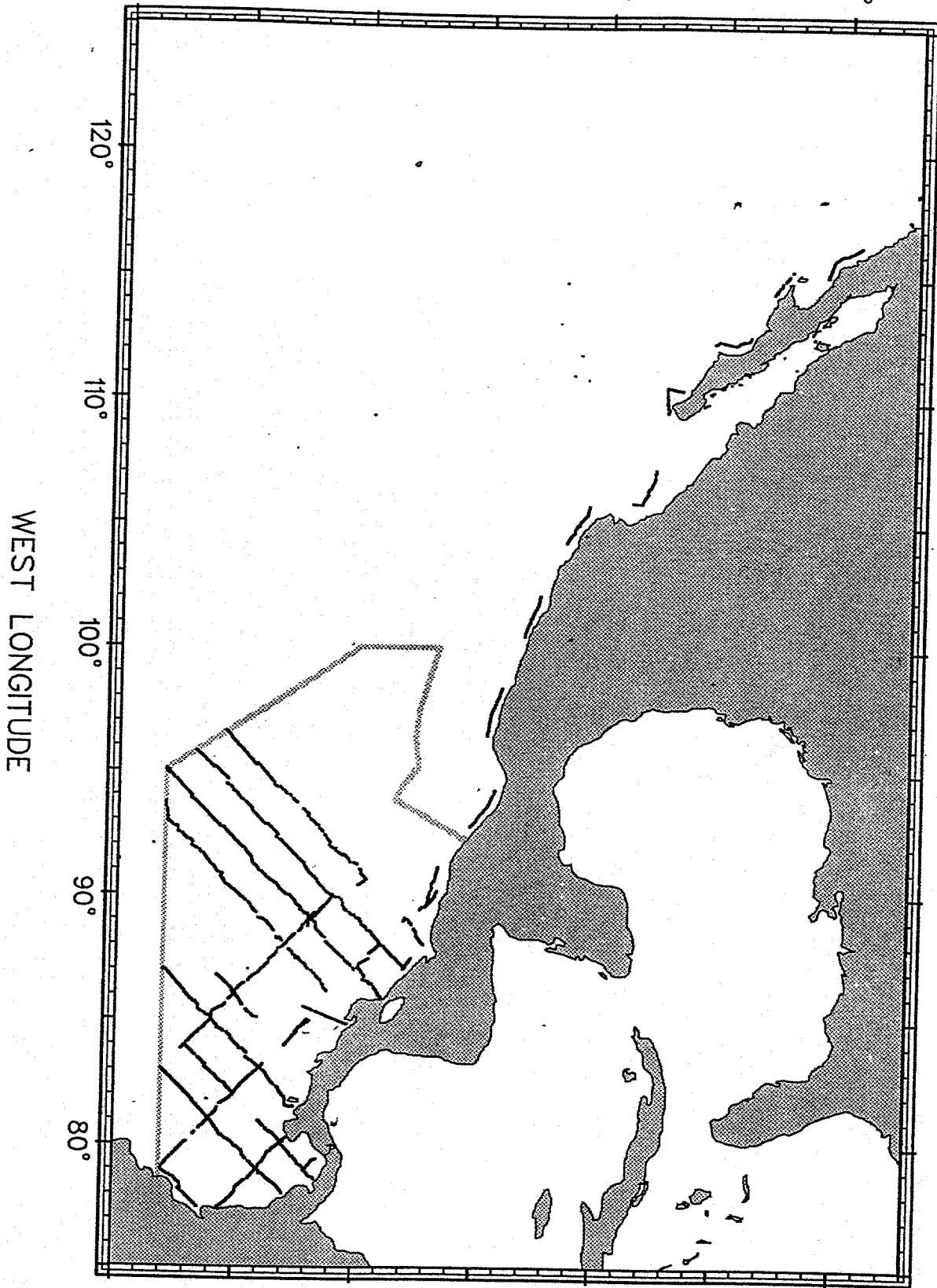
30°

20°

10°

0°

Figure 3. PODS 92 Tracklines for McARTHUR.



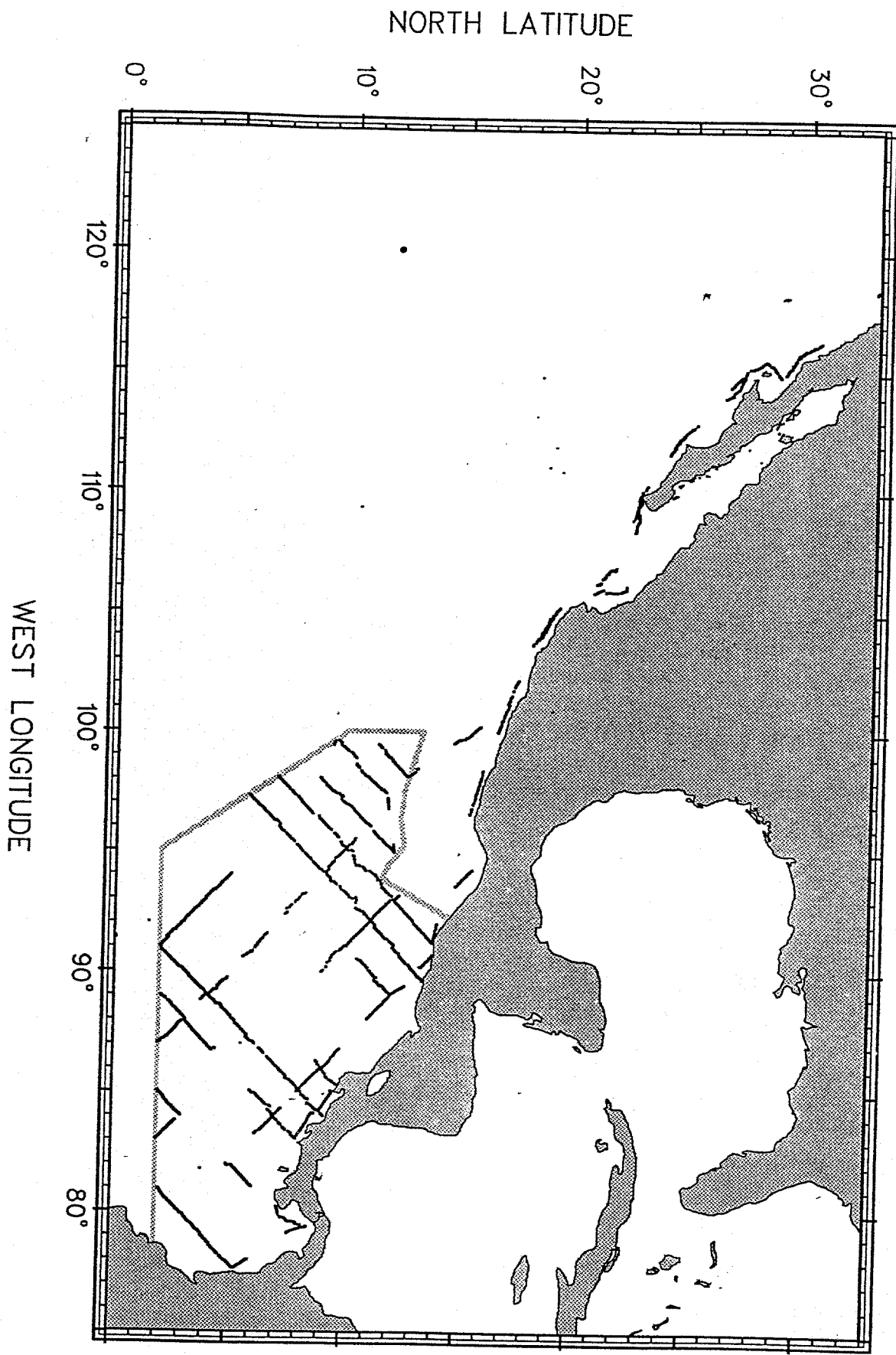


Figure 4. PODS 92 Tracklines for DAVID STARR JORDAN.

NORTH LATITUDE

5°

10°

15°

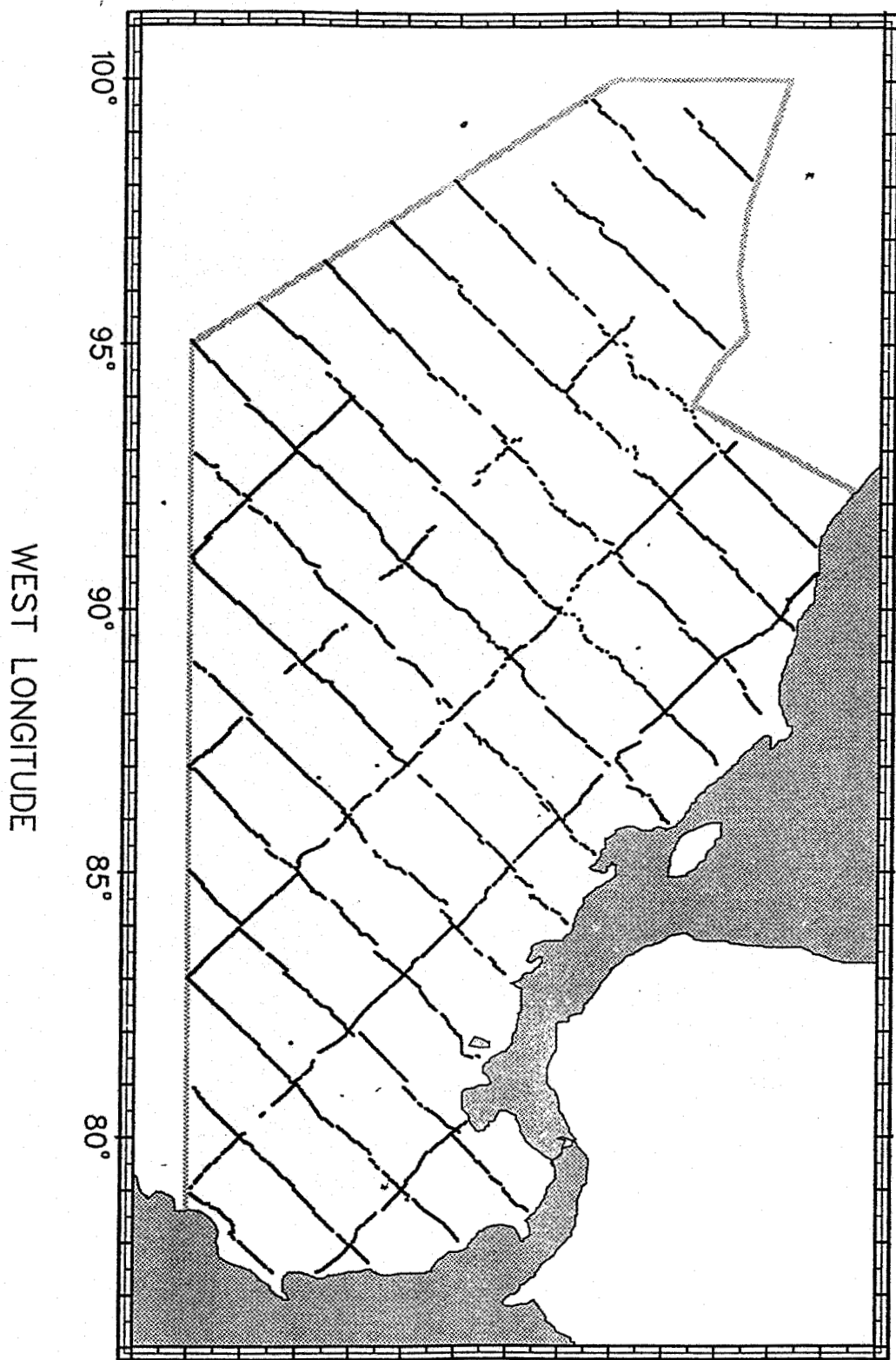
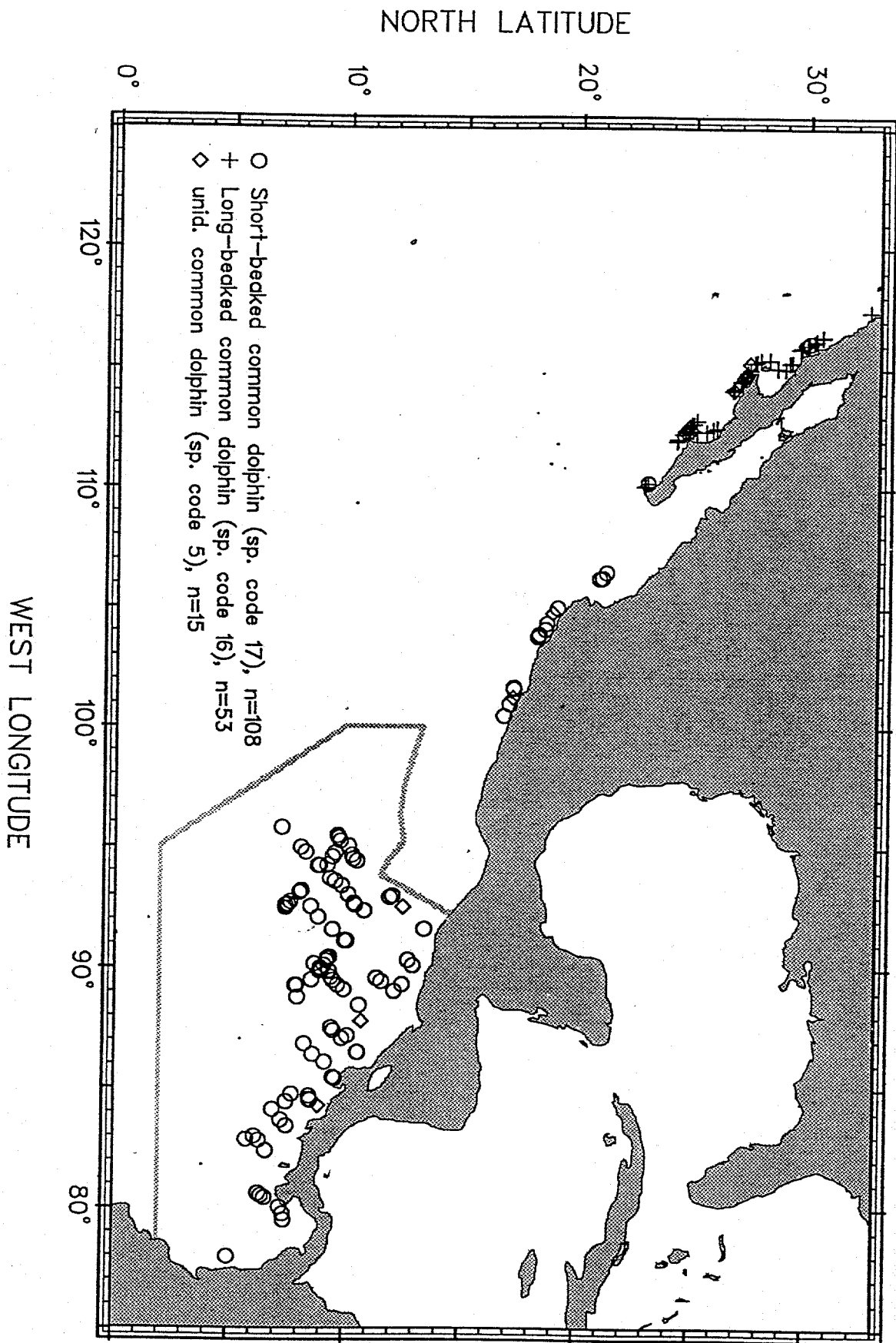


Figure 5. PODS 92 On-effort Tracklines.

Figure 6. PODS 92 Common dolphin sightings.





NORTH LATITUDE

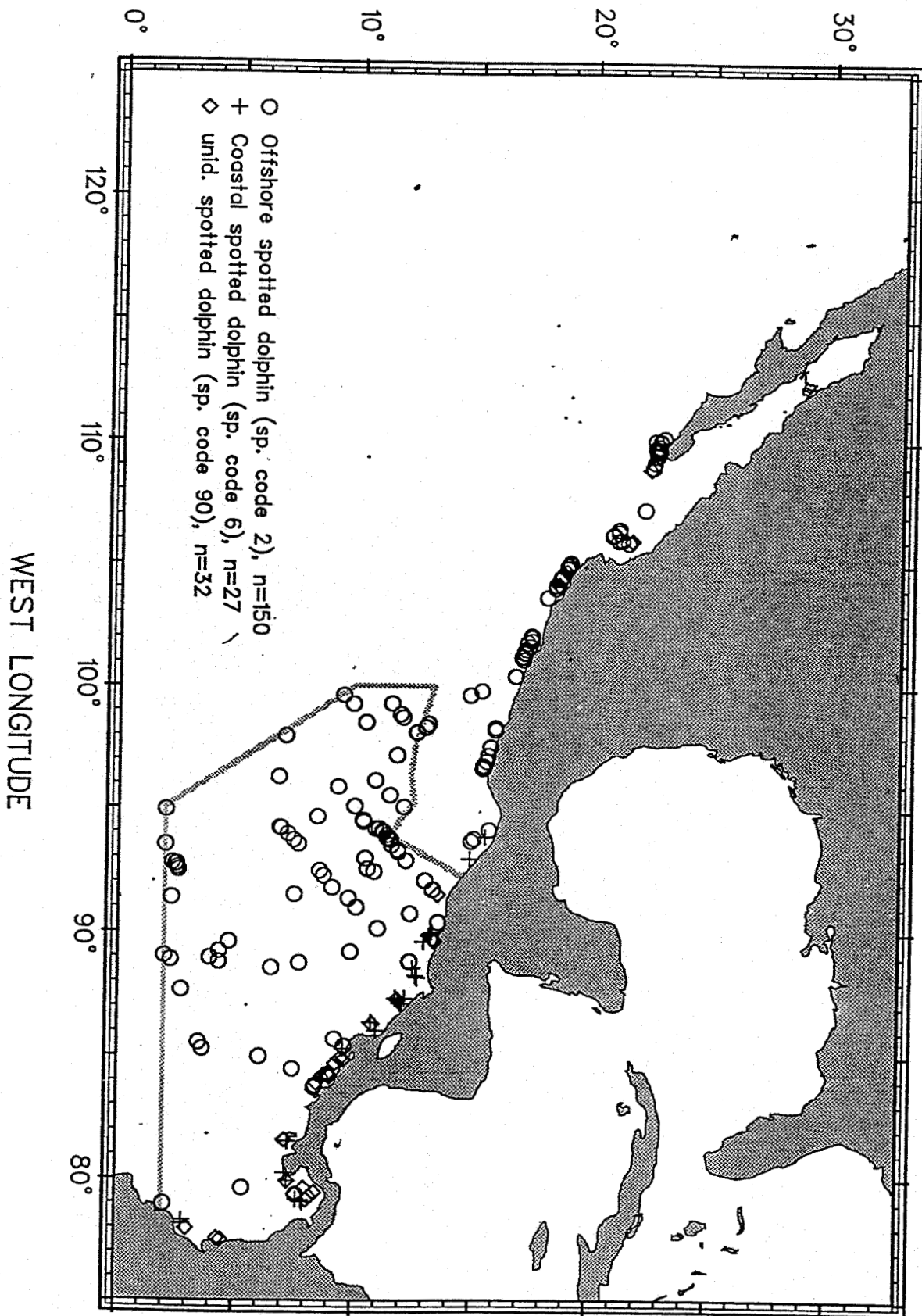
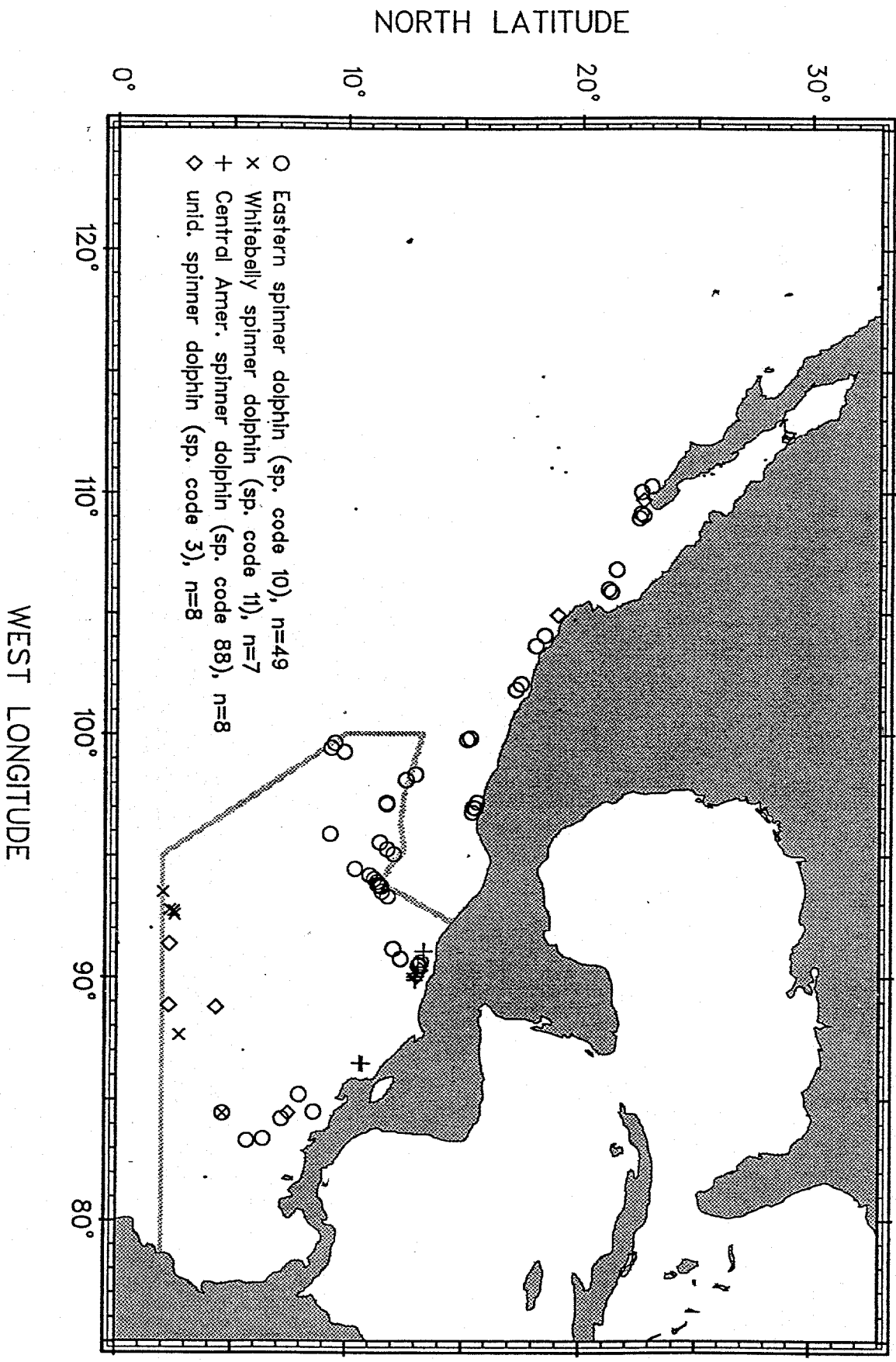


Figure 7. PODS 92 Spotted dolphin sightings.

Figure 8. PODS 92 Spinner dolphin sightings.



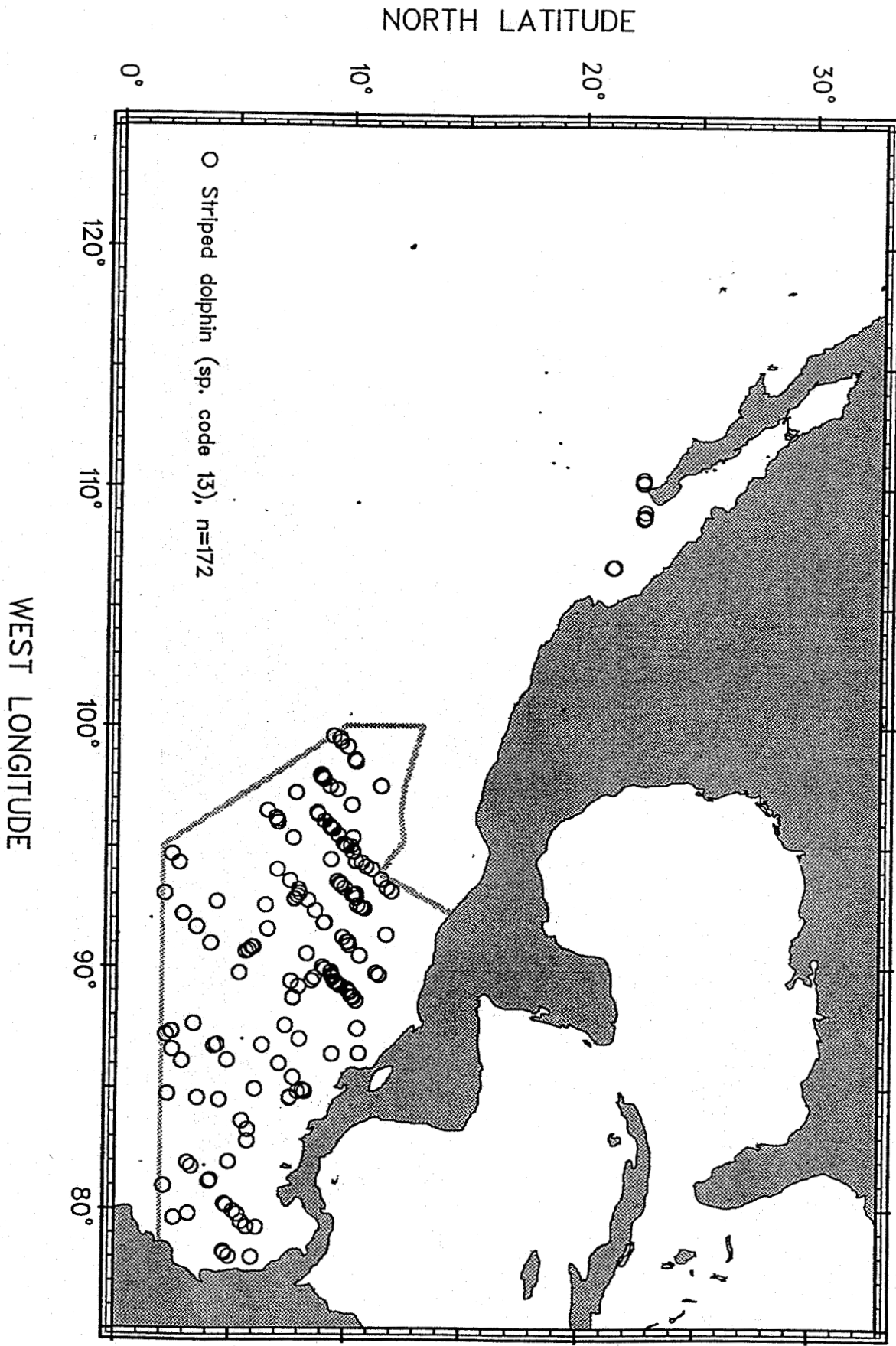
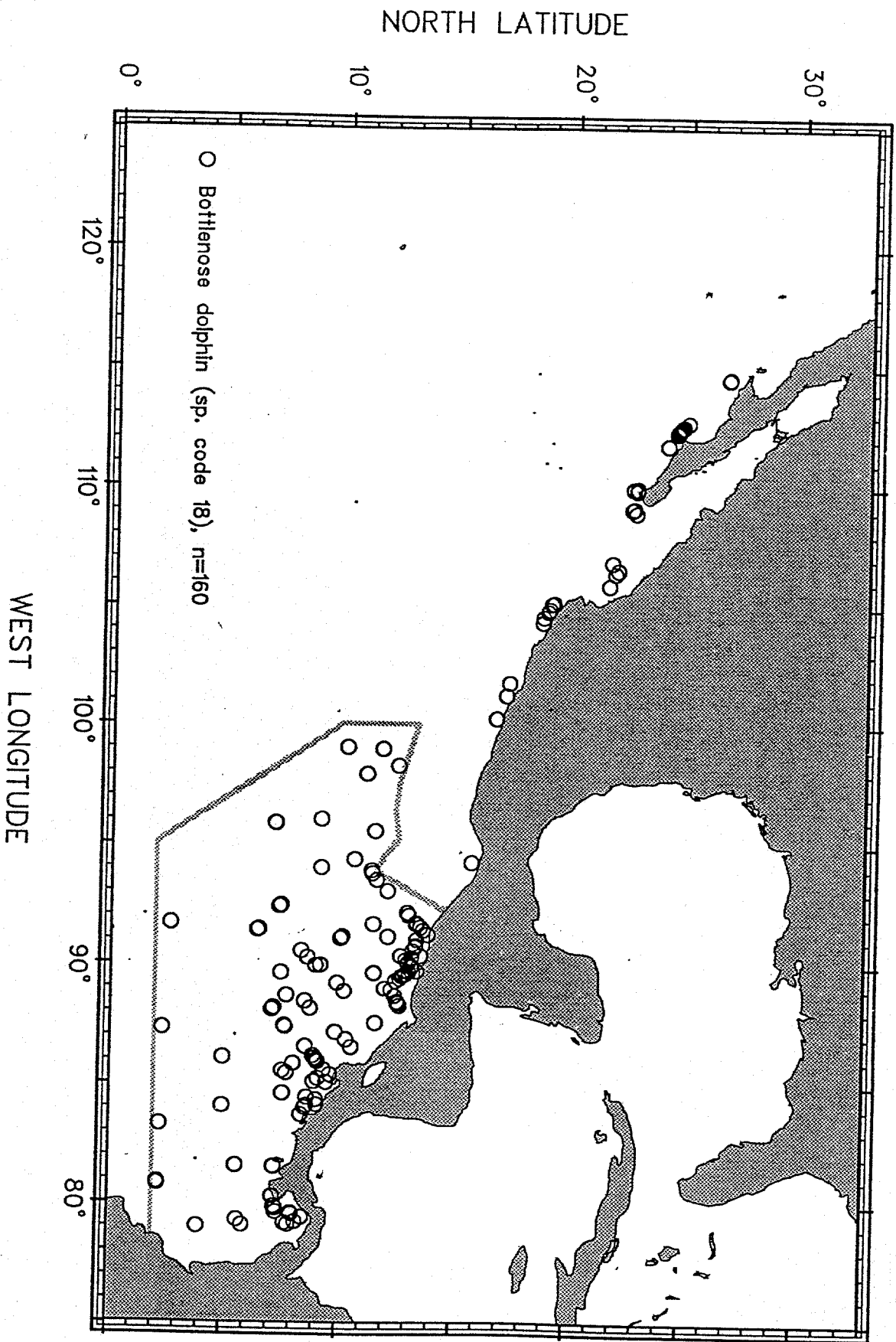


Figure 9. PODS 92 Striped dolphin sightings.

Figure 10. PODS 92 Bottlenose dolphin sightings.



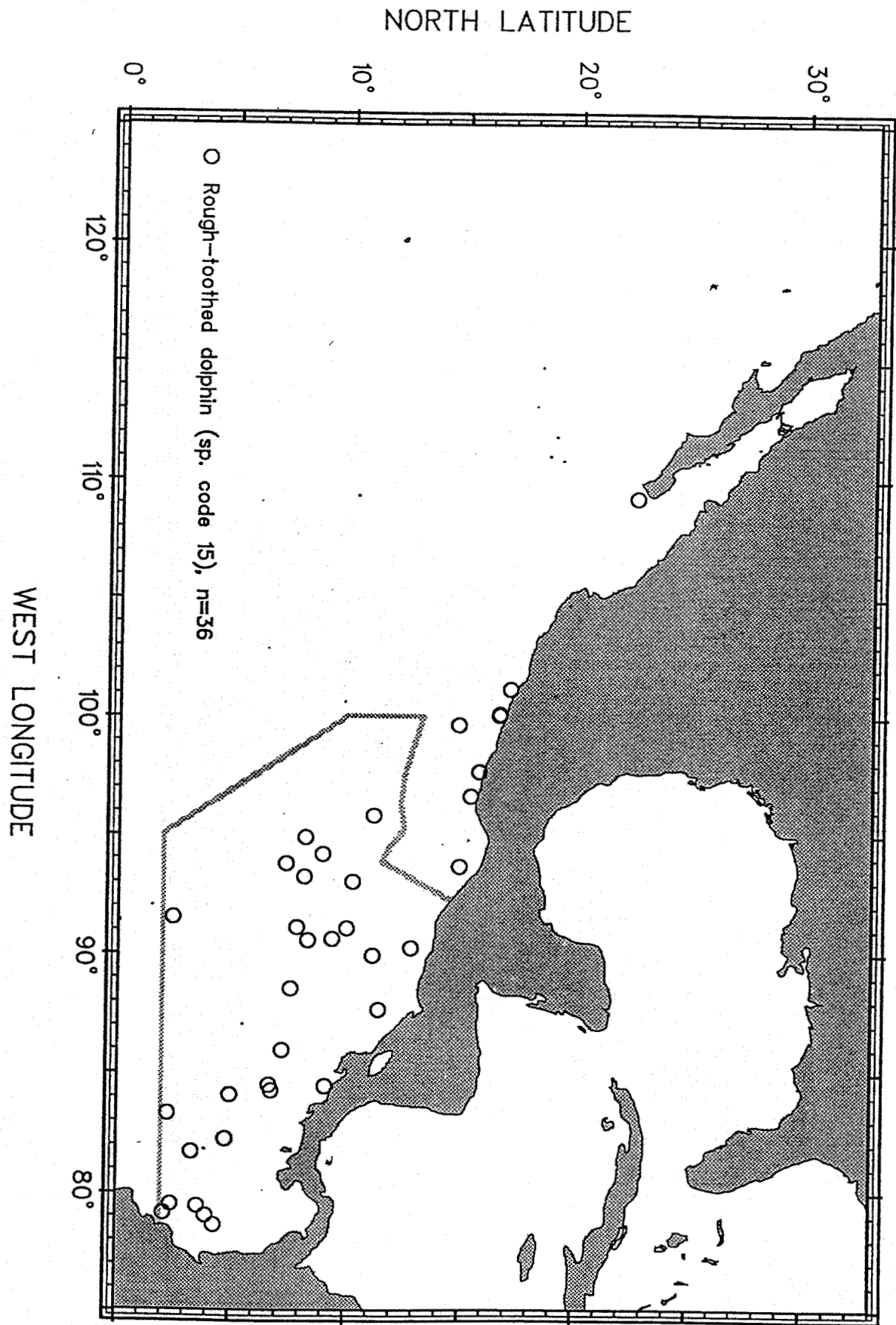
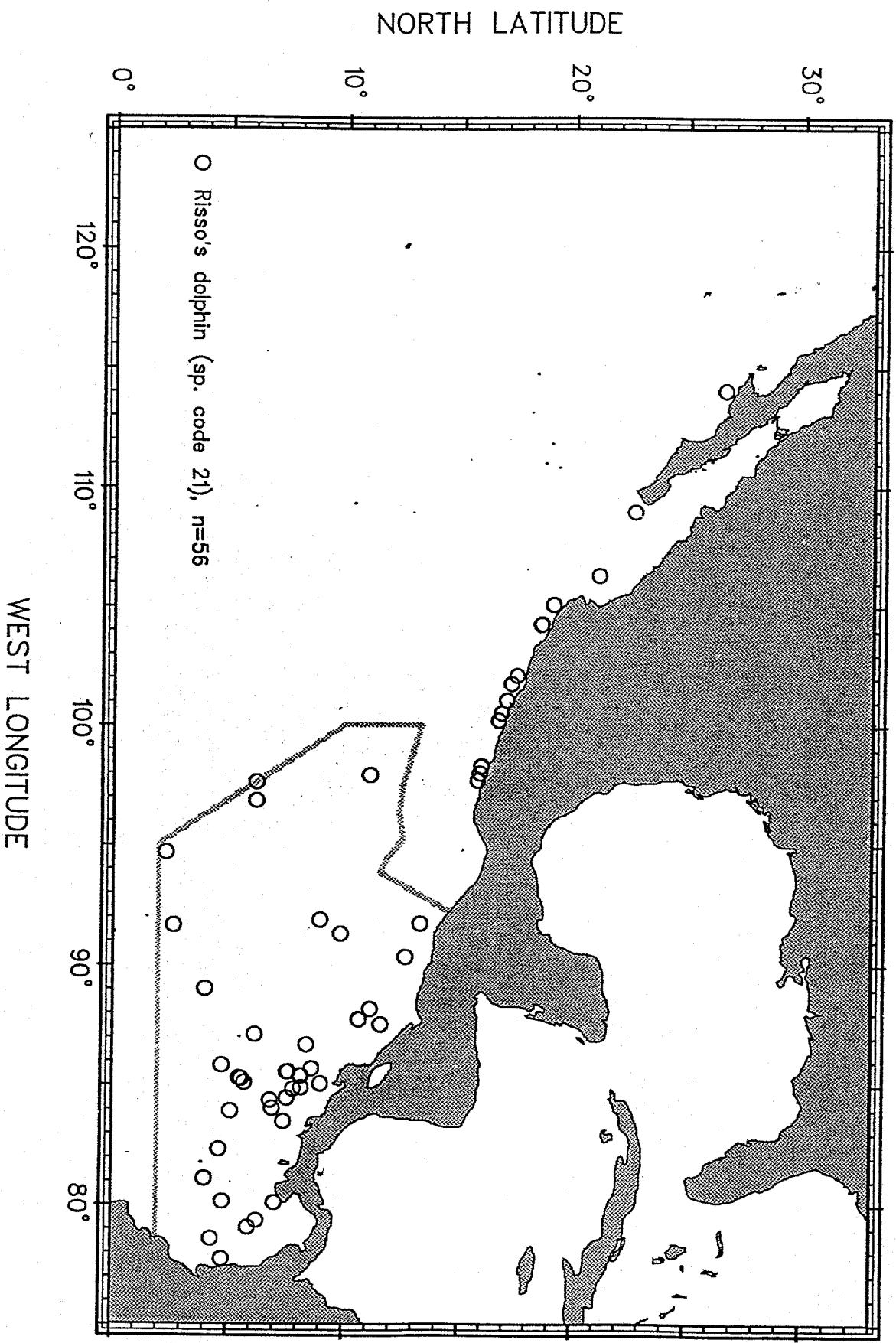


Figure 11. PODS 92 Rough Toothed dolphin sightings.

Figure 12. PODS 92 Risso's dolphin sightings.



NORTH LATITUDE

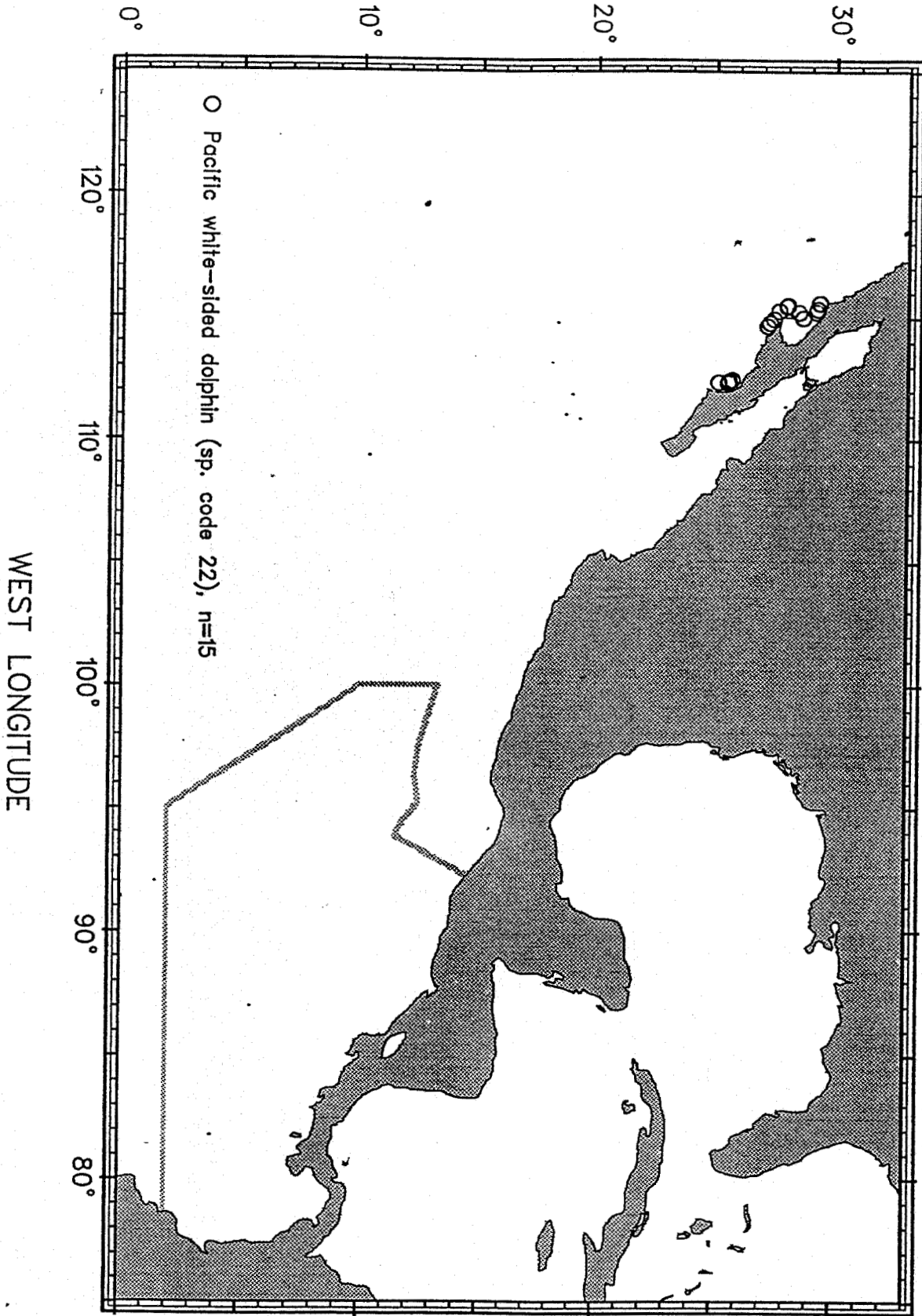
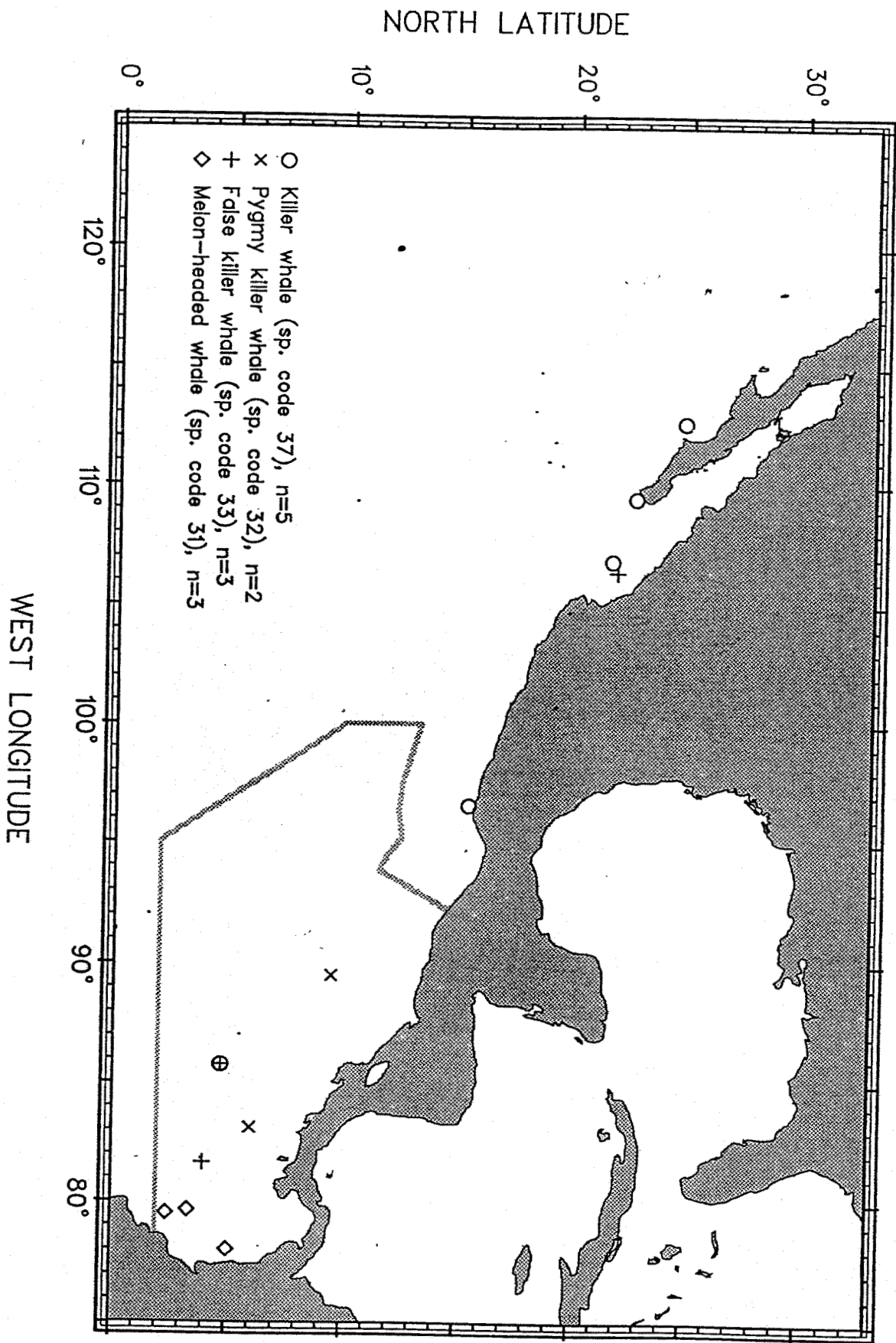


Figure 13. PODS 92 Pacific white-sided dolphin sightings.

Figure 14. PODS 92 Melon-headed, Pygmy Killer, False Killer and Killer whale sightings.





NORTH LATITUDE

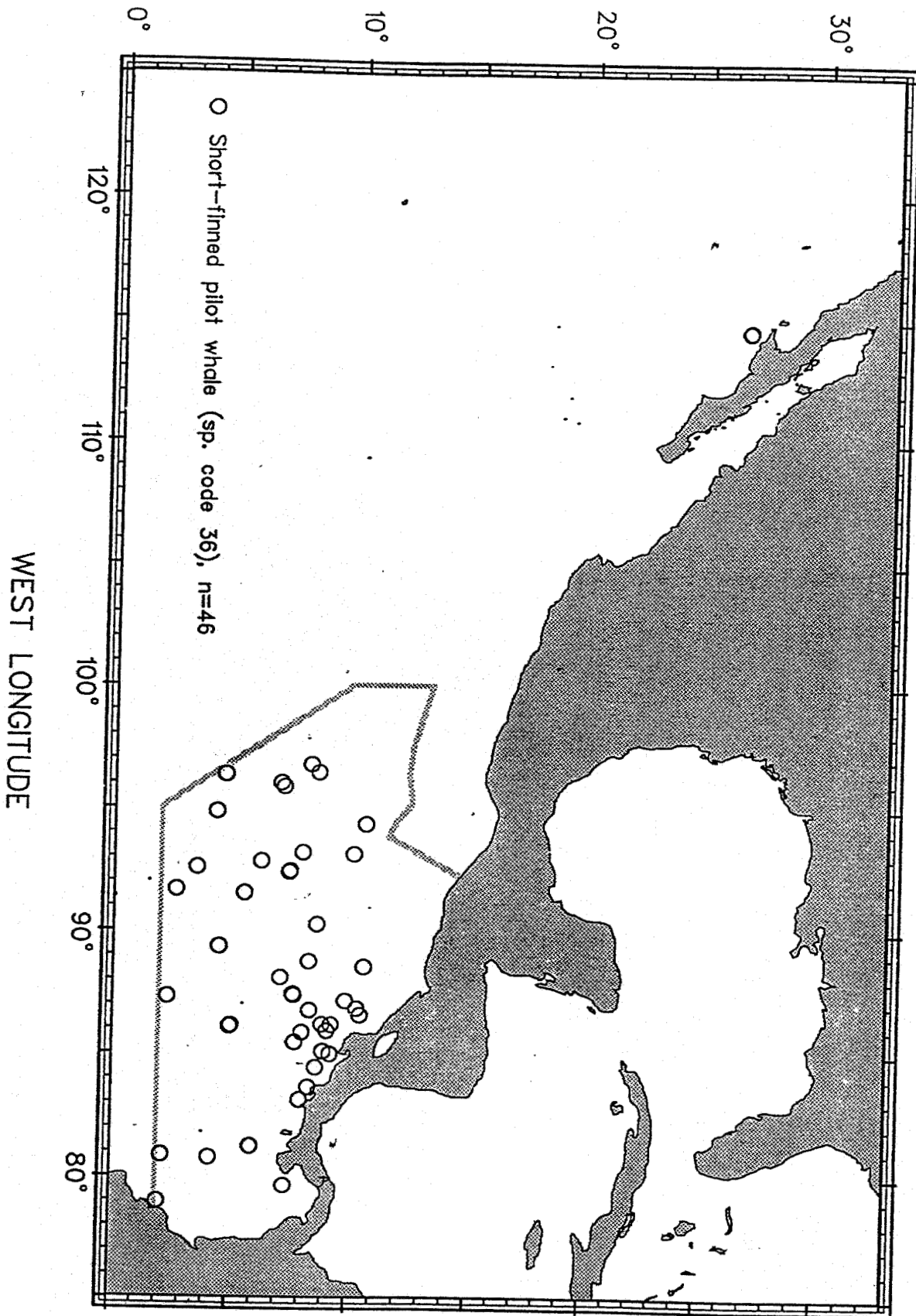
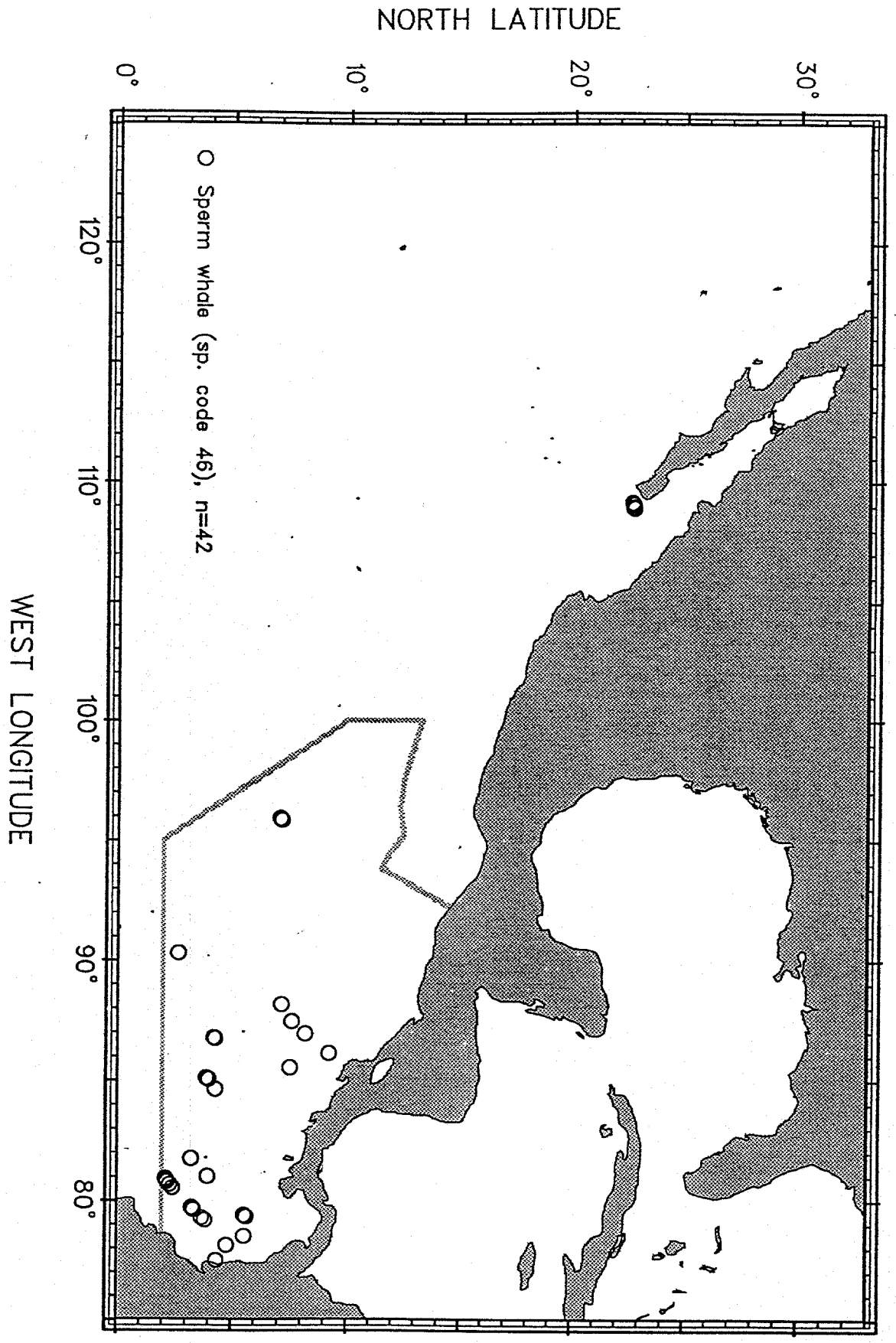


Figure 15. PODS 92 Pilot whale sightings.

Figure 16. PODS 92 Sperm whale sightings.



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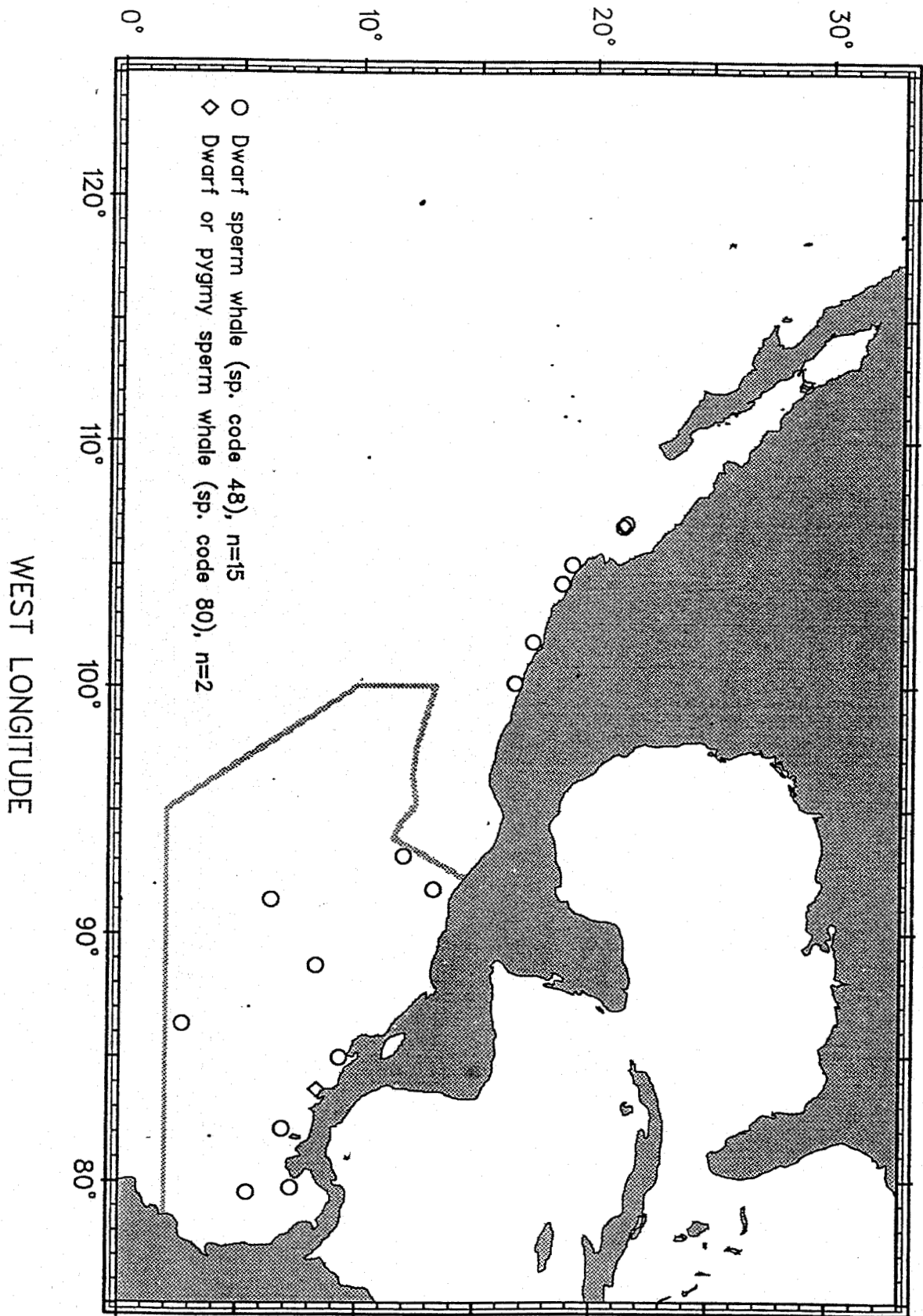


Figure 17. PODS 92 Dwarf and Pygmy Sperm whale sightings.

NORTH LATITUDE

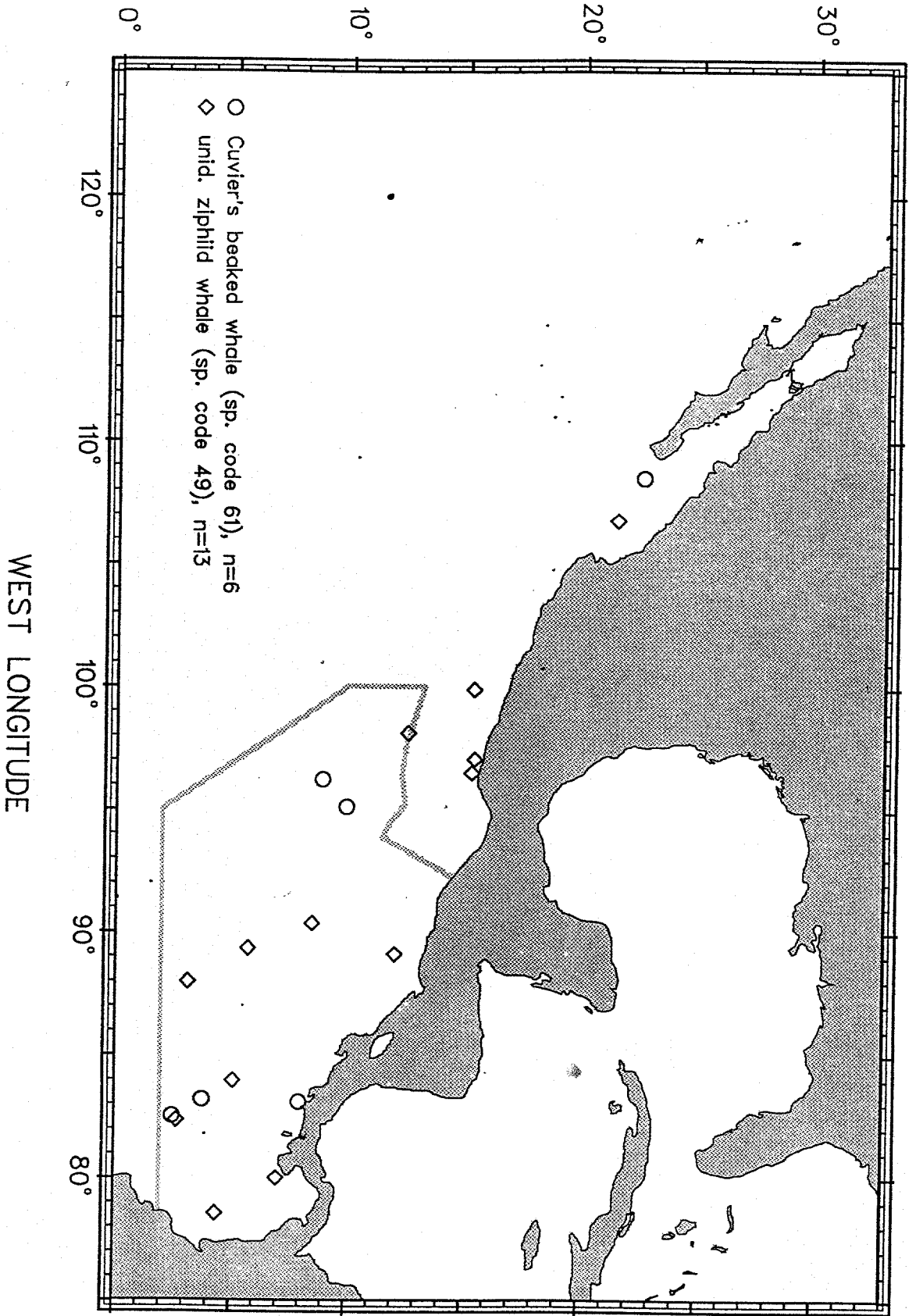


Figure 18. PODS 92 Cuvier's beaked whale and unidentified ziphiid sightings.

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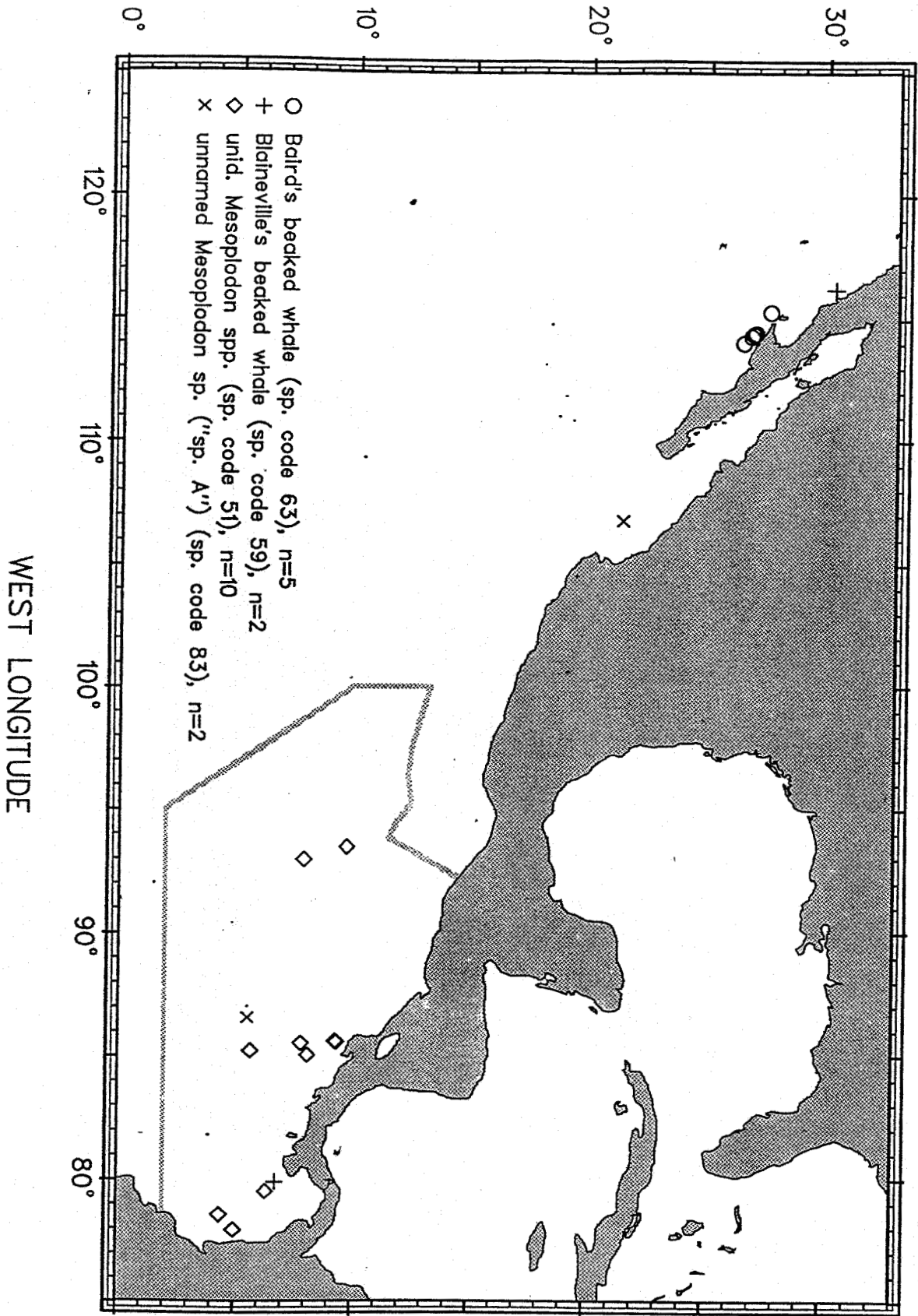
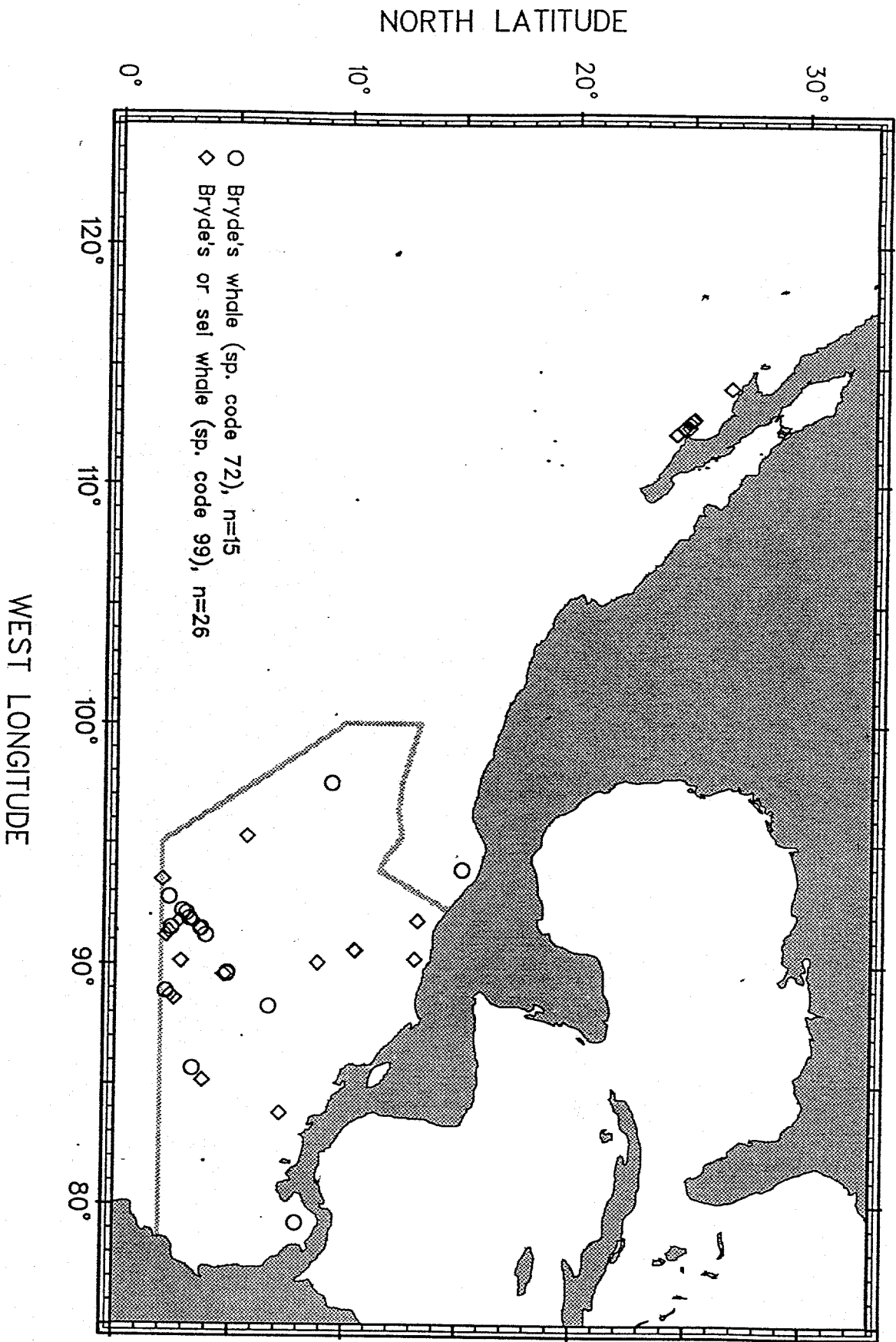


Figure 19. PODS 92 Baird's beaked whale, Blaineville's beaked whale and Mesoplodon sightings.

Figure 20. PODS 92 Bryde's and Sei whale sightings.



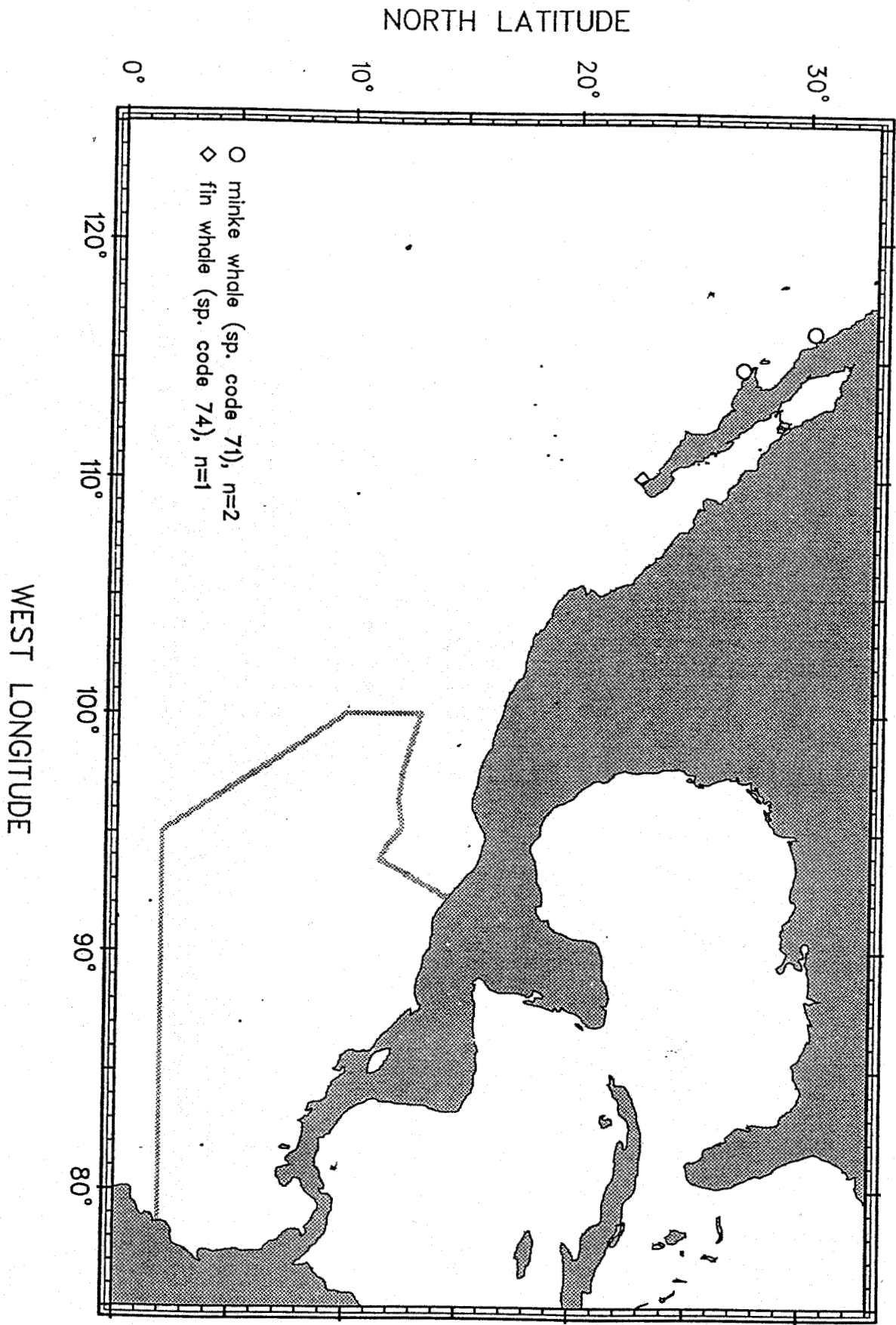
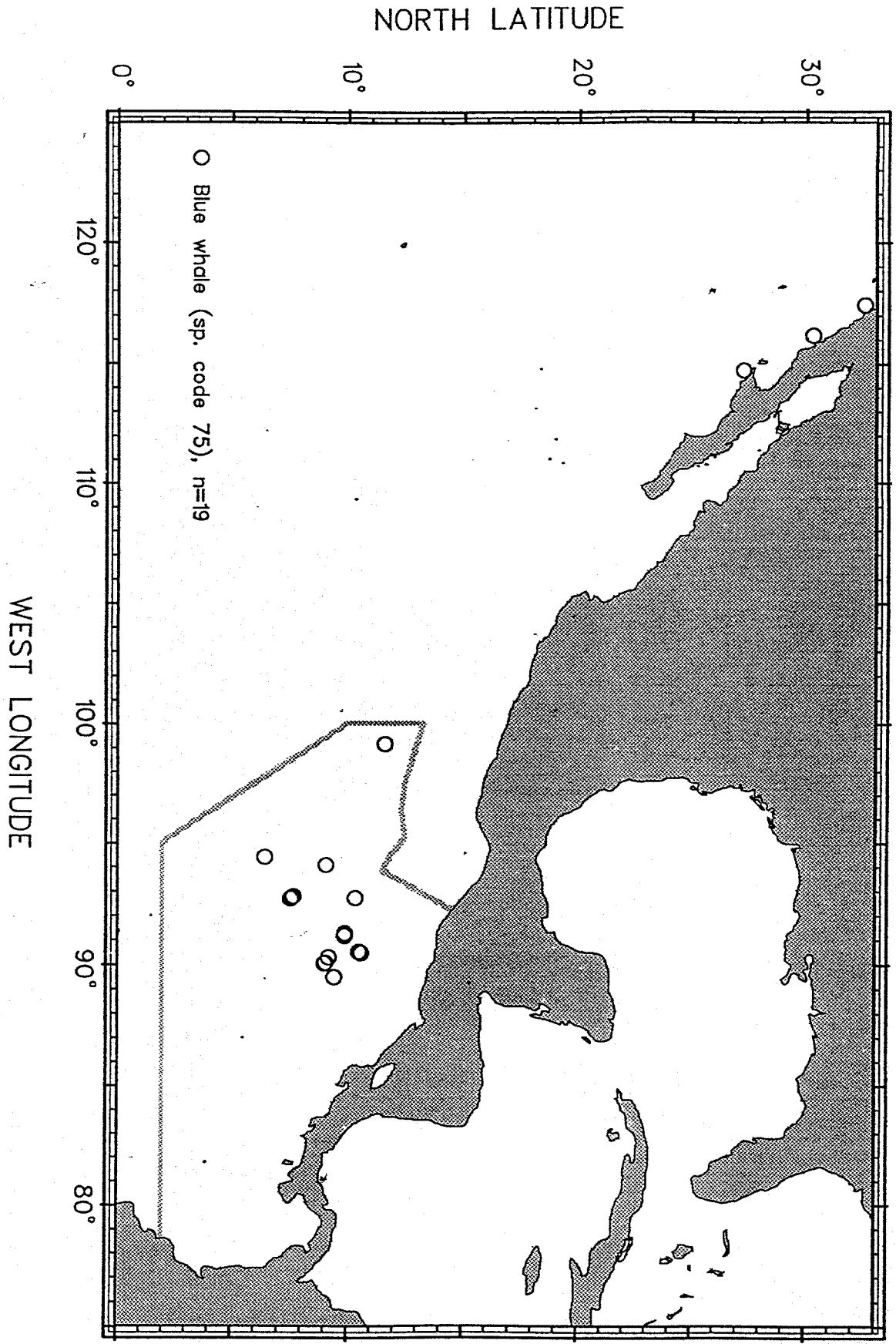


Figure 21. PODS 92 Minkie whale and Fin whale sightings.

Figure 22. PODS 92 Blue whale sightings.





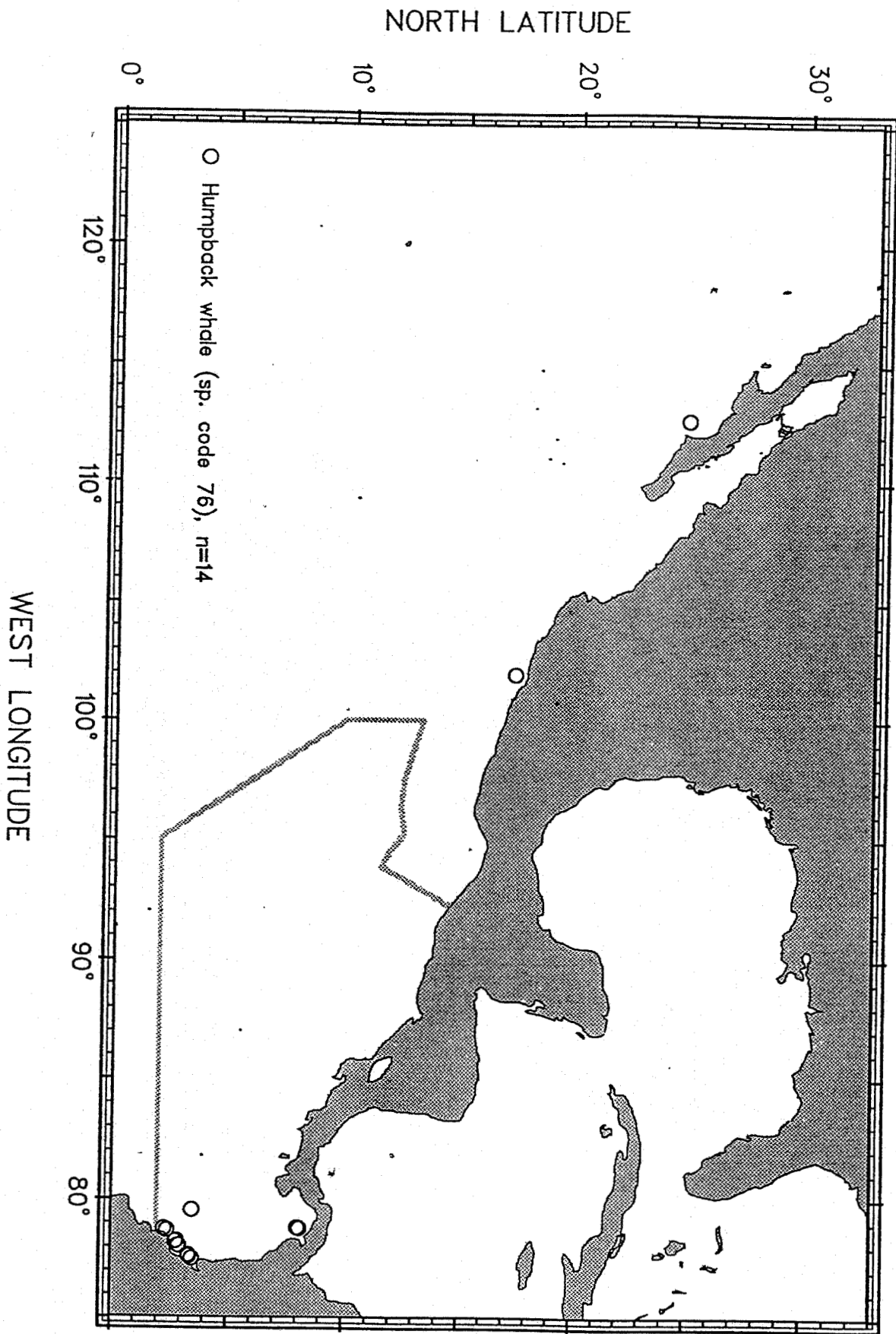


Figure 23. PODS 92 Humpback whale sightings.

Figure 24. PODS 92 Unidentified dolphin sightings.

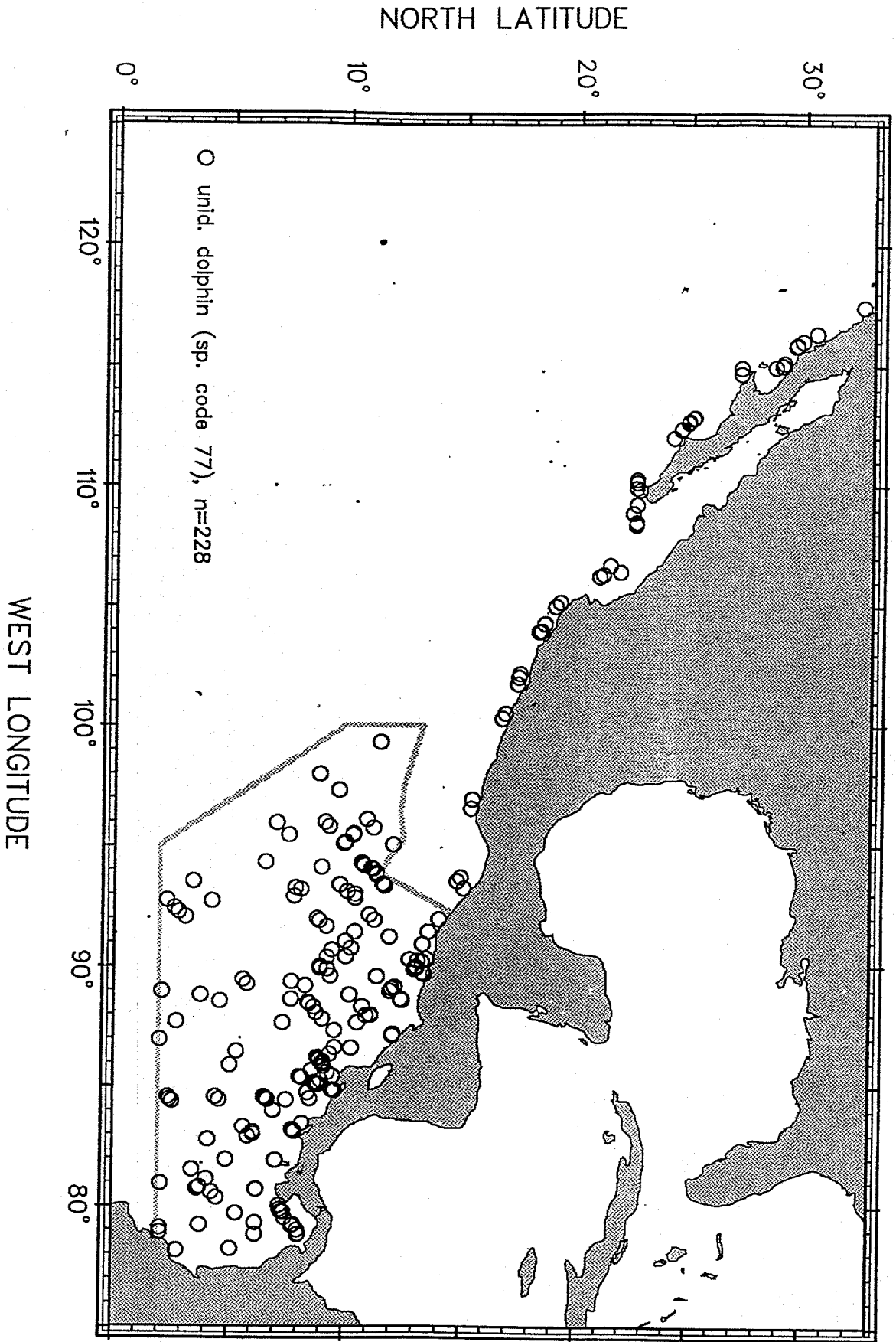


Figure 25. PODS 92 Unidentified small whale sightings.

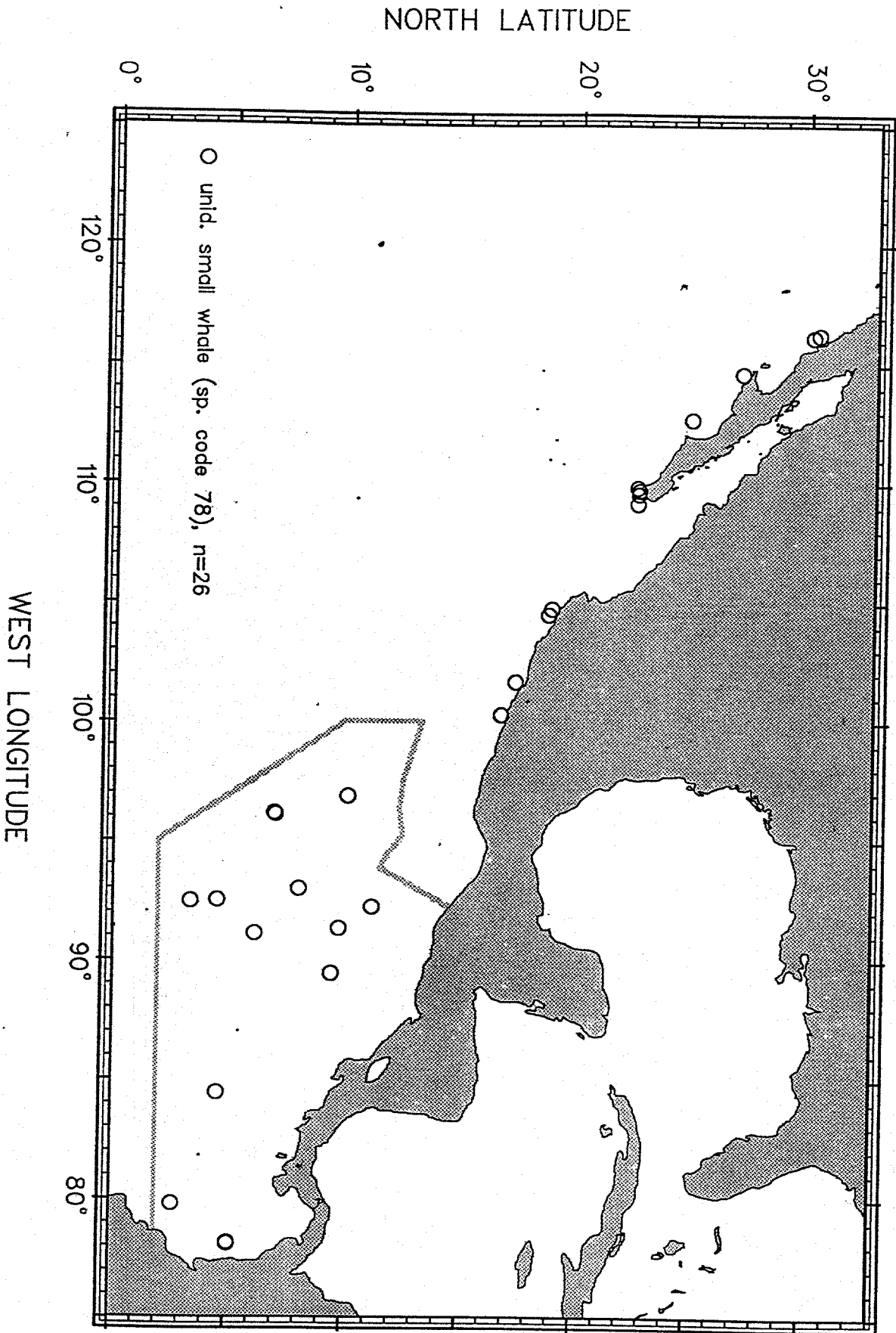
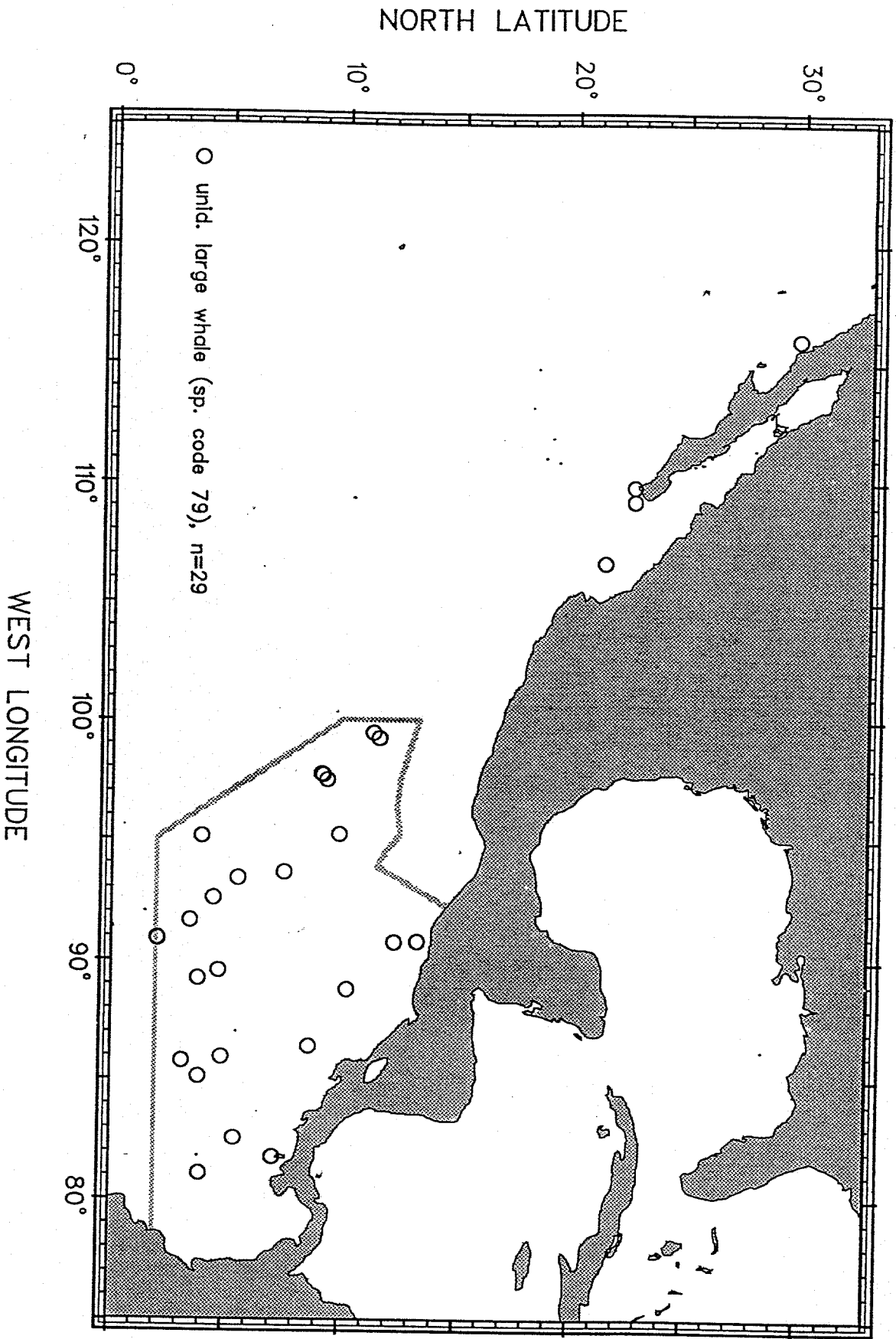


Figure 26. PODS 92 Unidentified large whale sightings.



NORTH LATITUDE

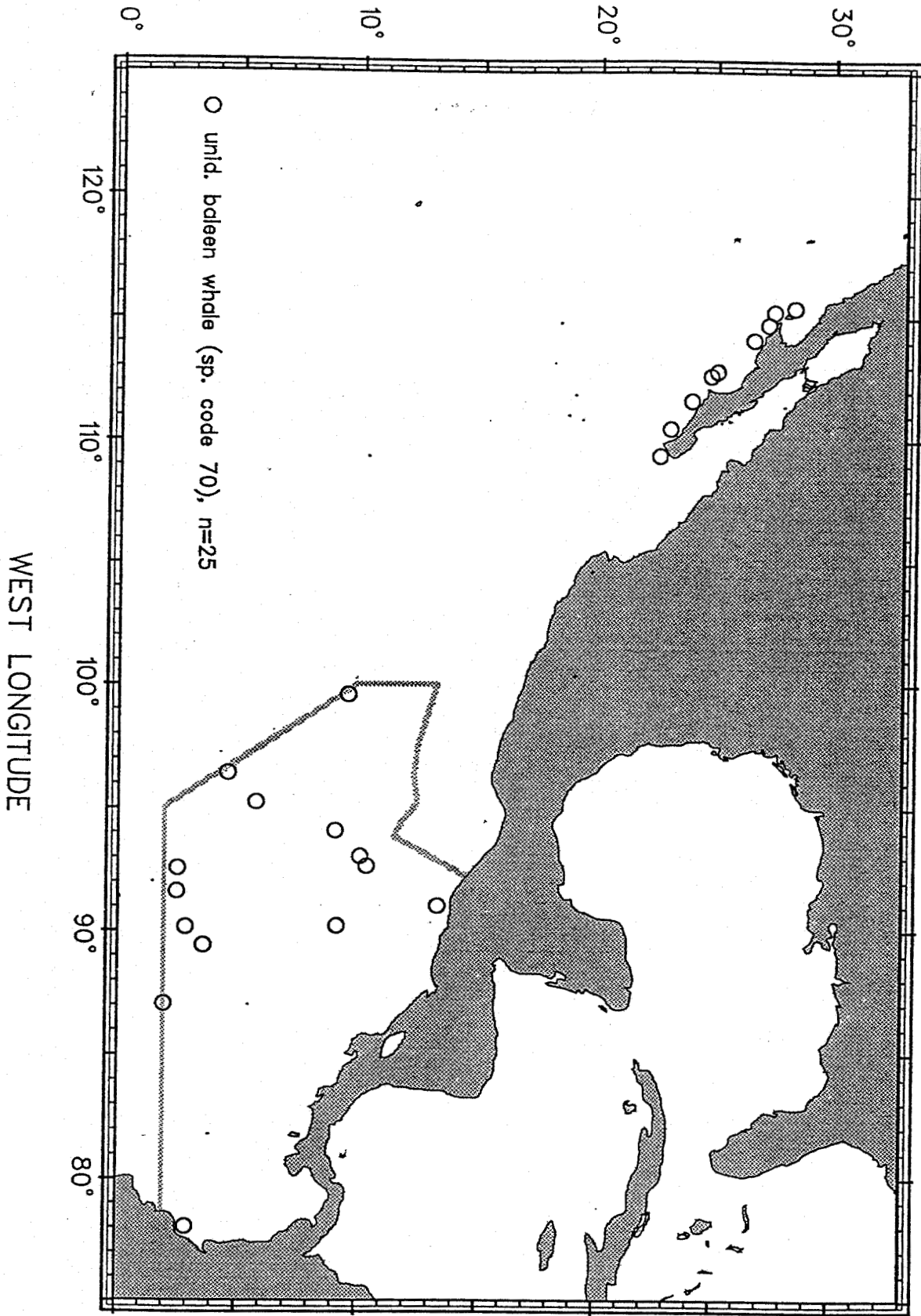


Figure 27. PODS 92 Unidentified baleen whale sightings.

V = viewing conditions

Beaufort	1	see Table 1
Swell Ht	2	numeric value, in feet
SwellDir	3	relative to North
W. Temp	4	degrees centigrade

N = navigation

Course	1	ship heading relative to North
Speed	2	ship speed, in knots

W = weather

Rain/Fog	1	1=no rain or fog, 2=fog, 3=rain, 4=rain and fog, 5=haze, but not rain or fog
Horz Sun	2	see Figure 1
Vert Sun	3	see Figure 1
Wind Dir	4	relative to North
Visbilty	5	nautical miles of visibility

t = turtle sighting

Obs ID	1	Observer code (see Table 10) for observer who made sighting
Spp	2	LO = olive ridleys, CC = loggerheads CM = green turtle, DC = leatherbacks EI = Hawksbill, UNK = Unknown
Bearing	3	relative bearing from ship to animals
DistNMI	4	nautical miles to sighting, in tenths
#Turtles	5	numeric value
AssocJFR	6	J=jellyfish, F=floating object, R=red tide

C = Comment

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