

# WINTER WATERFOWL SURVEY

## MEXICO WEST COAST AND BAJA CALIFORNIA



by

Ed Mallek and Jim Wortham  
U.S. Fish and Wildlife Service

January 2008

**WINTER WATERFOWL SURVEY  
MEXICO WEST COAST AND BAJA CALIFORNIA  
JANUARY 2008**

by

Ed Mallek and Jim Wortham  
U.S. Fish and Wildlife Service

**Introduction**

The survey aircraft arrived at Imperial, California on 11 January. We initiated the survey on 14 January and terminated the survey at Imperial, California on 21 January. Areas surveyed this year were the mainland west coast from the mouth of the Colorado River to Pabellon, and the west coast of Baja California from Bahia Magdalena through Bahia San Quintin. This survey is a continuation of the annual winter waterfowl survey which is conducted in the United States and Canada. Major survey emphasis was placed only on Pacific brant wintering areas during the periods 1966-1976, 1983-1984, 1986-1987, 1989-1990, 1992-1993, 1995-1996, 1998-1999, 2001-2002, 2004-2005, and in 2007-2008. All major coastal waterfowl wintering areas were surveyed (wintering duck surveys as well as Pacific brant) every fifth year prior to 1977, every year from 1977 through 1982, and every third year beginning in 1985.

Ed Mallek, Waterfowl Management, Fairbanks, Alaska served as pilot/observer; and Jim Wortham, Chief-Waterfowl Population Surveys/DMBM, Laurel, Maryland was the primary observer. We were disappointed that a representative of the Mexican government was unable to join us on the survey. As usual, whenever possible, the greatest numbers of waterfowl were placed on the observer's side of the aircraft. The specially modified Alaskan deHavilland beaver aircraft on amphibious floats (N754) was used this year, making its twenty-first trip to Mexico and it has increased both the safety and the quality of the surveys. The following itinerary outlines the daily flights during the survey.

<b>Date</b>	<b>Route and Area Surveyed</b>
14 January	Imperial, California to Guaymas, Sonora

Surveyed the Colorado River Delta, Santa Clara Slough near the mouth of the Colorado River, Bahia del Adair, Bahia de San Jorge, Bahia Dulce, Canel del Infiernillo, Bahia Kunkaak, Bahia Kino, and Bahia Tastiota.

Flight time: 5 hours

15 January Guaymas to Los Mochis, Sinaloa

Surveyed Peon, Potam, Punta Aguaia, Estero de Lobos, Isla Tobari, Bahia de Santa Barbara, Estero de Agiabampo.

Flight time: 4.3 hours

16 January Los Mochis

Surveyed Bahia San Esteban, Isla Santa Maria, Bahia de Topolobampo, Bahia de Ohuira, and Bahia de Navichiste.

Flight time: 3.4 hours

17 January Los Mochis

Surveyed Bahia de Santa Maria.

Flight time: 4.5 hours

18 January Los Mochis to Loreto, B.C.S.

Cross country flight

Flight time: 3.6 hours

19 January Loreto

Surveyed Boca de Santa Domingo, Boca de Soledad, Bahia Magdalena, and Bahia de las Almejas.

Flight time: 4.3 hours

20 January Loreto

Surveyed Laguna San Ignacio, Bahia Ballenas, and Laguan de Liebre.

Flight time: 3.9 hours

21 January Loreto to Imperial, California

Surveyed Laguna Ojo de Liebre, Laguna Santo Domingo, and Bahia San Quintin.

Flight time: 7.6 hours

A total of 36.6 survey related hours was flown in Mexico in eight days.

Weather conditions during the survey were normal with generally clear skies, visibility unlimited, and winds were calm to 20 knots.

### **Habitat Conditions**

Overall, habitat conditions on the mainland side of the survey area were found to be generally dry this year. The Colorado River Delta was mostly dry this year but nearby Santa Clara Slough had some water in it.

Cattails continue to encroach on the Marshes at Bahia de Santa Maria and Pabellon. Agricultural, maricultural, and salt extraction activities continue to increase in number and size on the west coast mainland of Mexico.

On the west side of the Baja Peninsula, coastal waterfowl habitat appeared little changed, although agricultural operations appear to continue to increase inland.

### **Waterfowl Populations**

#### **Ducks**

Duck populations were not surveyed in western Mexico this year.

#### **Brant**

A complete survey of the traditional brant wintering areas in Mexico was accomplished this year and the data are presented in Table 1 by survey unit for the years 1998-2008. The total number of brant recorded in 2008 was 103,299. The 2008 count was

30% above the 2007 count and was 10% above the previous ten year mean (1998-2007). Mainland brant numbers increased 45% from the previous ten year mean (19,443 in 2008 versus 13,420 in 98-07) with Tiburon (7,738,+53%), Obregon (7,239, +33%), Agiabampo (761, +129%), Topolbampo (266, -58%), and Santa Maria (3,439, +75%). Brant recorded on Baja increased 4% from the previous ten year mean (83,856 in 2008 versus 80,615 in 98-07) with Magdalena (11,306, +128%), San Ignacio (18,836, -4%), Scammon's (33,194, +12%), and San Quitin (20,520, -22%).

The relative distribution and numbers of brant in 2008 are shown in Appendix I.

### **Brant Population Comparisons and Trends**

Table 2 presents a comparison of the 2007 and 2008 Pacific brant wintering estimates (Alaska, west coast of the U.S., and Mexico) and the previous fall population estimates at Izembek Lagoon (Pacific brant staging area in southwest Alaska). Data previously reported for 2005 and 2006 (in the 2005 and 2006 reports) did not include western high arctic brant in the winter totals as was reported in all previous reports. Those data (2005 and 2006) have been corrected in all related figures in this report.

There now are 28 years of comparative estimates of the fall staging population of brant at Izembek National Wildlife Refuge. Figure 1 compares these estimates to those obtained on the wintering grounds along the west coast (primarily in Mexico but also in Washington, Oregon, California, and Izembek NWR). In spite of the technical limitations of obtaining all of these estimates, both the fall and the winter surveys have tracked the populations of Pacific brant in generally a similar fashion.

Since 1965 in excess of 70% of brant enumerated during the winter surveys in Mexico, Washington, Oregon, California, and Alaska have been tallied in Mexico. Although in recent years (since 2001) a larger proportion of the population has wintered in Alaska and the northwest U.S. than previously. A plot of population estimates in Mexico (with the omission of an obvious outlier) reveals a significant downward trend (Figure 2). A plot of annual productivity data (percent juvenile) collected at Izembek Lagoon in the fall previous to the winter survey shows a slight downward trend (Figure 3). Figure 4, the AHY component in Mexico, may best illustrate the recent status of brant wintering in Mexico.

Table 1. Total Brant by Survey Unit for the West Coast and Baja California, Mexico 1998-2008.

Survey Area	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	Previous 10-Year Average	Percent Change From 2007	From Avg.
Tiburon	5,190	8,140	4,780	6,415	2,730	3,388	5,040	6,867	3,662	4,403	7,738	5,062	76	53
Obregon	4,500	3,495	8,805	3,415	6,080	3,067	6,450	4,472	7,207	6,767	7,239	5,426	7	33
Agiabampo	1,400	240	775	115	40	77	110	220	224	120	761	332	534	129
Topolobampo	420	660	835	1,520	380	628	370	260	145	1,057	266	628	-75	-58
Santa Maria	2,790	3,260	1,225	1,545	1,825	905	1,300	2,249	3,016	1,585	3,439	1,970	117	75
Pabellon	0	0	0	0	0	29	0	0	0	0	0	3	0	-100
Mainland														
Subtotal	14,300	15,795	16,420	13,010	11,055	8,094	13,270	14,068	14,254	13,932	19,443	13,420	40	45
Magdalena														
San Ignacio	1,135	1,870	4,045	4,000	3,705	4,808	4,520	7,065	10,341	8,061	11,306	4,955	40	128
San Quintin	7,615	21,460	16,720	20,790	28,950	26,212	19,700	15,272	25,781	14,094	18,836	19,659	34	-4
Scammon's	17,760	36,485	42,570	33,670	32,970	23,028	27,675	20,938	31,181	30,054	33,194	29,633	10	12
San Quintin	71,295	25,150	28,685	20,390	28,370	20,084	19,790	16,685	20,180	13,041	20,520	26,367	57	-22
Baja														
Subtotal	97,805	84,965	92,020	78,850	93,995	74,132	71,685	59,960	87,483	65,250	83,856	80,615	29	4
TOTAL BRANT	112,105	100,760	108,440	91,860	105,050	82,226	84,955	74,028	101,737	79,182	103,299	94,034	30	10

Table 2. Comparison of brant survey estimates, numbers are in thousands.

		2008		2007	
<b>WINTER</b>	Total	Juvenile <sup>a</sup>	AHY <sup>b</sup>	Total	
Mexico	103.3	29.1	74.2	79.2	
WA,OR,CA	25.0	7.1	17.9	20.8	
Alaska	28.3	8.0	20.3	40.0	
Total	156.6	44.2	112.4	140.0	
w/o WHA <sup>c</sup>	147.4	41.5	105.9	133.9	
		2007		2006	
<b>FALL</b>	Total	Juvenile <sup>a</sup>	AHY <sup>b</sup>	Total	
Izembek	154.6			128.0	
	122.1			127.7	
	130.4			124.2	
Average	138.5 <sup>d</sup>	39.1	99.4	126.6	

a Based on 28.2% juvenile measured from ground observations at Izembek Lagoon in the fall of 2007.

b AHY = after hatch year bird

c WHA = western high arctic brant

d average corrected for missing segments

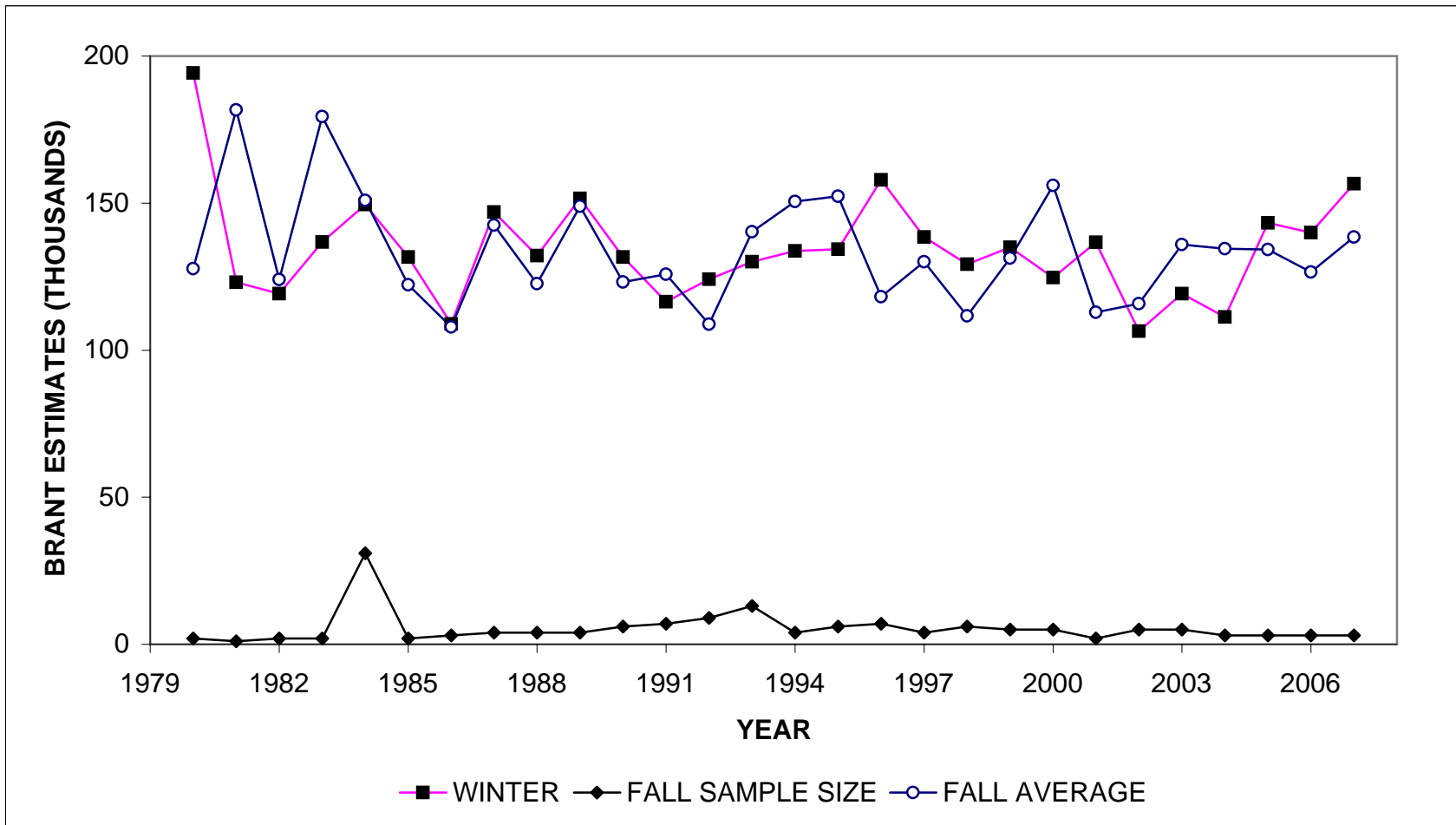


Figure 1. Average fall estimates of brant at Izembek Lagoon and adjacent habitats since 1980. Sample sizes for fall averages are illustrated at the bottom. Winter estimates were made three to four months after the respective fall surveys (in the next calendar year) in the coastal areas from Mexico to Alaska.



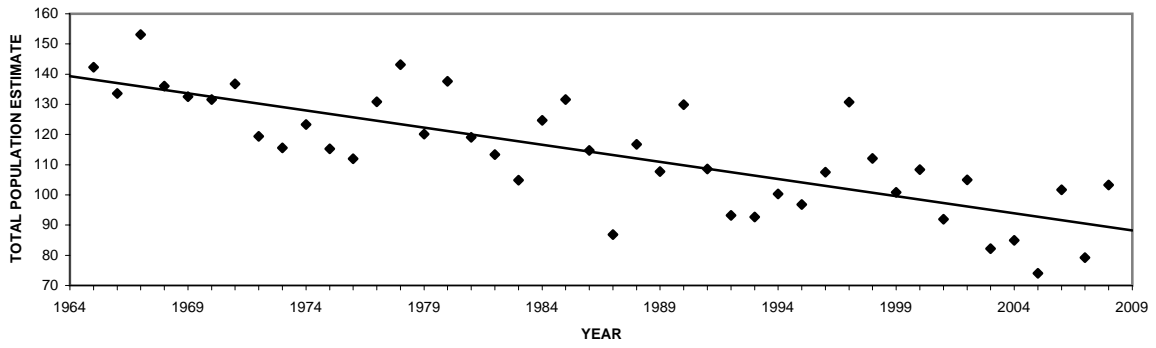


Figure 2. Mexico - Total population estimates in thousands,  $p < 0.01$ .

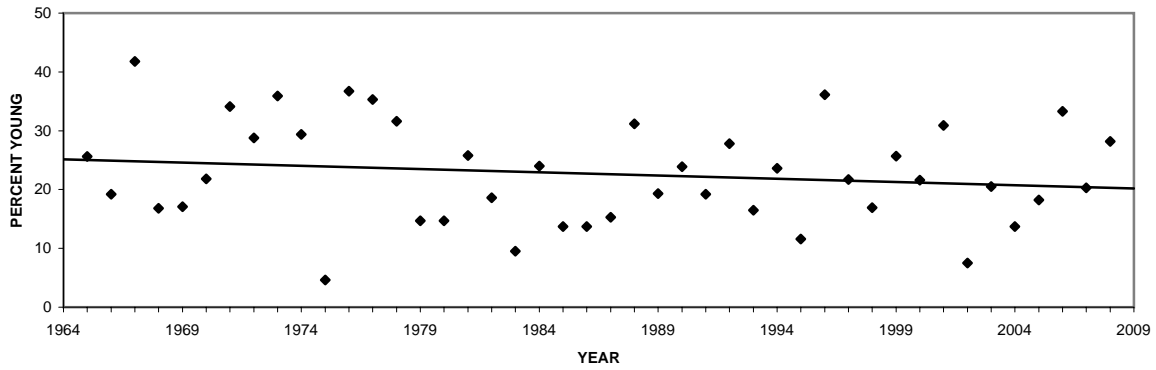


Figure 3. Izembek Lagoon - Percent juvenile in fall.

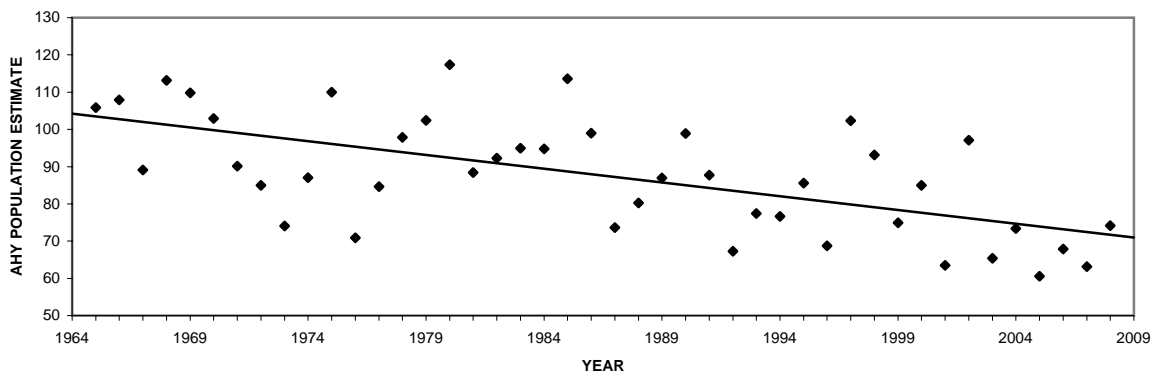


Figure 4. Mexico After Hatching Year Component - Total population estimate in thousands, minus juveniles (as measured at Izembek Lagoon in the previous fall).

## **Bald Eagles**

Three bald eagle nests were located on Isla Creciente, south of Bahia Magdalena during the 1983 survey. Since then these sites as well as other "new" sites have been checked opportunistically. This year we found two nests with incubating adults and one empty nest with an adult near by. Table 3 summarizes bald eagle nest observations in this area for the last twenty five years. Additionally, we observed 1 adult bald eagle on Santa Clara slough near the Colorado River Delta.

## **Discussion**

Survey coverage and intensity for brant was similar to past years and data collected are comparable to historical records. The total estimate for brant on the wintering grounds in Mexico this year (103,299) was 10% above the previous ten year mean (1998-2007 range = 74,028 to 112,105). The brant estimate for the west coast of Mexico for 2008 (19,443) exceeded the previous ten year mean (1998-2007 range = 8,094 to 16,420) by 45%. The brant estimate for the Baja Peninsula for 2008 (83,856) was similar to the previous ten year mean (4%, 80,615).

The current three year mean for Pacific Brant (not including Western High Arctic Brant) is 138,387. This mean is higher than previous three year means (1988-2007 three year mean range 104,834 to 135,331) and may indicate an increasing trend in the population.

A Telonics telemetry receiver-scanner is an integral part of the special survey aircraft used. We monitored frequencies for scoters this year and did locate one "missing" bird on the west coast of the Baja Peninsula. These data are listed in Table 4.

## **Recommendations**

Continue the formal survey design for only brant wintering areas in years between the expanded Mexico Mid-Winter Surveys.

Continue to standardize observers to the extent possible to enhance the comparability of the data.

Consider developing an additional survey design for inland wintering ducks and modify the coastal design for ducks in years when all waterfowl are surveyed.

Continue to monitor radio telemetry frequencies throughout the survey trip from Alaska.

Continue to use the specially modified Alaskan de Havilland beaver survey aircraft to enhance the safety and quality of surveys.

Continue to fly direct from Imperial, California and clear customs at Guaymas, Sonora.

Date submitted: March 24, 2008

Submitted by: Ed Mallek

Table 3. Bald Eagle Nest Observations - Bahia Magdalena, Baja California, Mexico during brant survey 1983-2008.

Year	Nest Location Lat.-Long.	Occupied Territory (No. of Adults)	Incubating Adult	Eggs or Young
1983	N24°22'-W111°39' (1)	1	yes	?
	N24°22'-W111°39' (2)	0	unoccupied	
	N24°22'-W111°33'	2	yes	2 eggs
1984	N24°22'-W111°39' (1)	1	yes	?
	N24°22'-W111°39' (2)	0	unoccupied	
	N24°22'-W111°33'	1	yes	?
1985	N24°22'-W111°39' (1)	1	no	?
	N24°22'-W111°39' (2)	0	nest not located	
	N24°22'-W111°33'	0	nest not located	
1986	N24°22'-W111°39' (1)	1	no	1 yg
	N24°22'-W111°39' (2)	0	unoccupied	
	N24°22'-W111°33'	0	nest not located	
	N25°04'-W112°09'	1	no	1 yg
	N25°15'-W112°06'	0	remnant nest	
	N24°22'-W111°43'	2	yes	2 eggs
1987	N24°22'-W111°39' (1)	1	yes	?
	N24°22'-W111°39' (2)	0	unoccupied	
	N24°22'-W111°33'	0	nest not located	
	N25°04'-W112°09'	1	yes	?
	N25°15'-W112°06'	0	nest not located	
	N24°22'-W111°43'	0	nest destroyed	
1988	N24°22'-W111°39' (1)	2	no	0
	N24°22'-W111°39' (2)	0	unoccupied	
	N24°22'-W111°33'	1	nest not located	
	N25°04'-W112°09'	2	no	2 yg
	N25°15'-W112°06'	0	nest destroyed	
1989	N24°22'-W111°39' (1)	0	no	0
	N24°22'-W111°39' (2)	0	nest not located	
	N24°22'-W111°33'	1	remnant nest	
	N25°04'-W112°09'	2	?	1yg/1egg
	N25°15'-W112°06'	0	3 nests located	

Table 3. (continued)

Year	Nest Location Lat.-Long.	Occupied Territory (No. of Adults)	Incubating Adult	Eggs or Young
1990	N24°22'-W111°39' (1)	2	no	
	N24°22'-W111°39' (2)	0	nest not located	
	N24°22'-W111°33'	0	nest not located	
	N25°04'-W112°09'	2	no	2 yg
	N25°15'-W112°06'	0	nests not located	
1991	N24°22'-W111°39' (1)	0	unoccupied	
	N24°22'-W111°39' (2)	0	nest destroyed	
	N24°22'-W111°37'	2	yes	2 eggs
	N24°22'-W111°33'	1	nest not located	
	N25°04'-W112°09'	2	yes	2 yg
	N25°15'-W112°06'	0	nests destroyed	
1992	N24°22'-W111°39'	0	unoccupied	
	N24°22'-W111°37'	0	nest not located	
	N25°04'-W112°09' (1)	0	unoccupied	
	N25°04'-W112°09' (2)	1	no	
1993	N24°22'-W111°39'	1	yes	?
	N24°46'-W111°57'	1	yes/cactus nest	
	N25°03'-W112°08'	2	yes	2 eggs
1994	N24°22'-W111°39'	1	yes	?
	N24°22'-W111°37'	0	found/old looking	
	N24°46'-W111°57'	0	unoccupied/cactus nest	
	N25°03'-W112°08'	2	yes	2eggs
	N24°41'-W111°53'	0	unoccupied/new cactus nest	
	N24°31'-W111°47'	2	yes/new mangrove nest	
1995	N24°22'-W111°39'	2	yes	?
	N24°22'-W111°37'	0	nest not located	
	N24°46'-W111°57'	2	occupied/cactus nest	
	N25°03'-W112°08'	1	yes/1 immature nearby	
	N24°41'-W111°53'	0	nest not located	
	N24°31'-W111°47'	0	unoccupied	

Table 3. (continued)

Year	Nest Location Lat.-Long.	Occupied Territory (No. of Adults)	Incubating Adult	Eggs or Young
1996	N24°22'-W111°39'	1	yes	?
	N24°22'-W111°37'	0	unoccupied	
	N24°46'-W111°57'	2	occupied/cactus	2 eggs
	N25°03'-W112°08'	2	yes	2 yg
	N24°41'-W111°53'	0	nest not located	
	N24°31'-W111°47'	1	yes	?
1997	N24°22'-W111°39'	0	unoccupied	
	N24°22'-W111°37'	0	unoccupied	
	N24°46'-W111°57'	0	nest not located	
	N25°03'-W112°08'	0	unoccupied	
	N24°48'-W112°02'	0	unoccupied/new cactus nest	
	N24°31'-W111°47'	2	yes	1 egg
1998	N24°22'-W111°39'	2	yes	?
	N24°22'-W111°37'	0	empty	
	N24°46'-W111°57'	0	empty/cactus nest	
	N25°03'-W112°08'	0	nest not located	
	N24°48'-W112°02'	0	empty/cactus nest	
	N24°31'-W111°47'	0	empty	
	N24°21'-W111°43'	0	empty	
1999	N24°22'-W111°39'	1	yes	?
	N24°22'-W111°37'	0	nest not located	
	N24°46'-W111°57'	1	yes/cactus nest	?
	N25°03'-W112°08'	0	nest not located	
	N24°48'-W112°02'	0	nest not located	
	N24°31'-W111°47'	1	yes	?
	N24°21'-W111°43'	0	empty	
2000	N24°22'-W111°39'	1	yes	?
	N24°22'-W111°37'	0	nest not located	
	N24°46'-W111°57'	0	empty/cactus nest	
	N25°03'-W112°08'	0	nest not located	
	N24°48'-W112°02'	0	nest not located	
	N24°31'-W111°47'	2	no	
	N24°21'-W111°43'	0	empty	

Table 3. (continued)

Year	Nest Location Lat.-Long.	Occupied Territory (No. of Adults)	Incubating Adult	Eggs or Young
2001	N24°22'-W111°39'	1	yes	?
	N24°22'-W111°37'	0	empty	
	N24°46'-W111°57'	1	yes/cactus nest	?
	N25°03'-W112°08'	0	nest not located	
	N24°21'-W111°29'	2	empty/new nest	
	N24°31'-W111°47'	1	yes	?
	N24°21'-W111°43'	0	empty	
	N24°21'-W111°29'	1	immature	
2002	N24°22'-W111°39'	2	yes	2 eggs
	N24°22'-W111°37'	0	empty	
	N24°46'-W111°57'	1	yes/cactus nest	?
	N25°03'-W112°08'	0	nest not located	
	N24°21'-W111°29'	0	nest not located	
	N24°31'-W111°47'	1	yes	?
	N24°21'-W111°43'	0	empty	
2003	N24°22'-W111°39'	1	yes	?
	N24°22'-W111°37'	0	nest not located	
	N24°46'-W111°57'	0	empty/cactus nest	
	N25°03'-W112°08'	0	nest not located	
	N24°21'-W111°29'	1	2 nests/bottom active	
	N24°31'-W111°47'	0	empty	
	N24°21'-W111°43'	0	empty	
2004	N24°22'-W111°39'	1	yes	1 egg
	N24°22'-W111°37'	0	no eagles sighted	1 egg
	N24°46'-W111°57'	0	empty/cactus nest	
	N25°03'-W112°08'	0	nest not located	
	N24°21'-W111°29'	1	2 nests/both empty	
	N24°31'-W111°47'	1	yes	?
	N24°21'-W111°43'	0	empty	
2005	N24°22'-W111°39'	1	yes	?
	N24°22'-W111°37'	0	no eagles sighted	
	N24°46'-W111°57'	1	cactus nest	1 yg
	N24°21'-W111°29'	2	2 nests/1 active	2 eggs
	N24°31'-W111°47'	1	yes	?
	N24°21'-W111°43'	0	nest gone	

Table 3. (continued)

Year	Nest Location Lat.-Long.	Occupied Territory (No. of Adults)	Incubating Adult	Eggs or Young
2006	N24°22'-W111°39'	1	yes	?
	N24°22'-W111°37'	0	empty/1 immature nearby	
	N24°46'-W111°57'	0	empty/cactus nest	
	N25°03'-W112°08'	0	nest not located	
	N24°21'-W111°29'	0	2 nests/not located	
	N24°31'-W111°47'	1	yes	1+egg
	N24°21'-W111°43'	0	remnant	
2007	N24°22'-W111°39'	1	yes	?
	N24°22'-W111°37'	1	empty/1 adult nearby	
	N24°46'-W111°57'	0	not located/cactus nest	
	N25°03'-W112°08'	0	nest not located	
	N24°21'-W111°29'	1	empty/1 adult nearby	
	N24°31'-W111°47'	1	yes	?
	N24°21'-W111°43'	0	nest not located	
2008	N24°22'-W111°39'	1	empty/1 adult nearby	
	N24°22'-W111°37'	0	nest not located	
	N24°46'-W111°57'	0	not located/cactus nest	
	N25°03'-W112°08'	0	nest not located	
	N24°21'-W111°29'	2	yes	?
	N24°31'-W111°47'	1	yes	?
	N24°21'-W111°43'	0	nest not located	



Table 4. Radio-telemetry monitoring results on the west coast of North America in January 2008.

---

Date	Species	Frequency	Pulse Rate	Location
1/21	Scoter	165.150	Normal	N30 <sup>0</sup> 27' W116 <sup>0</sup> 00'

Route of Flight:

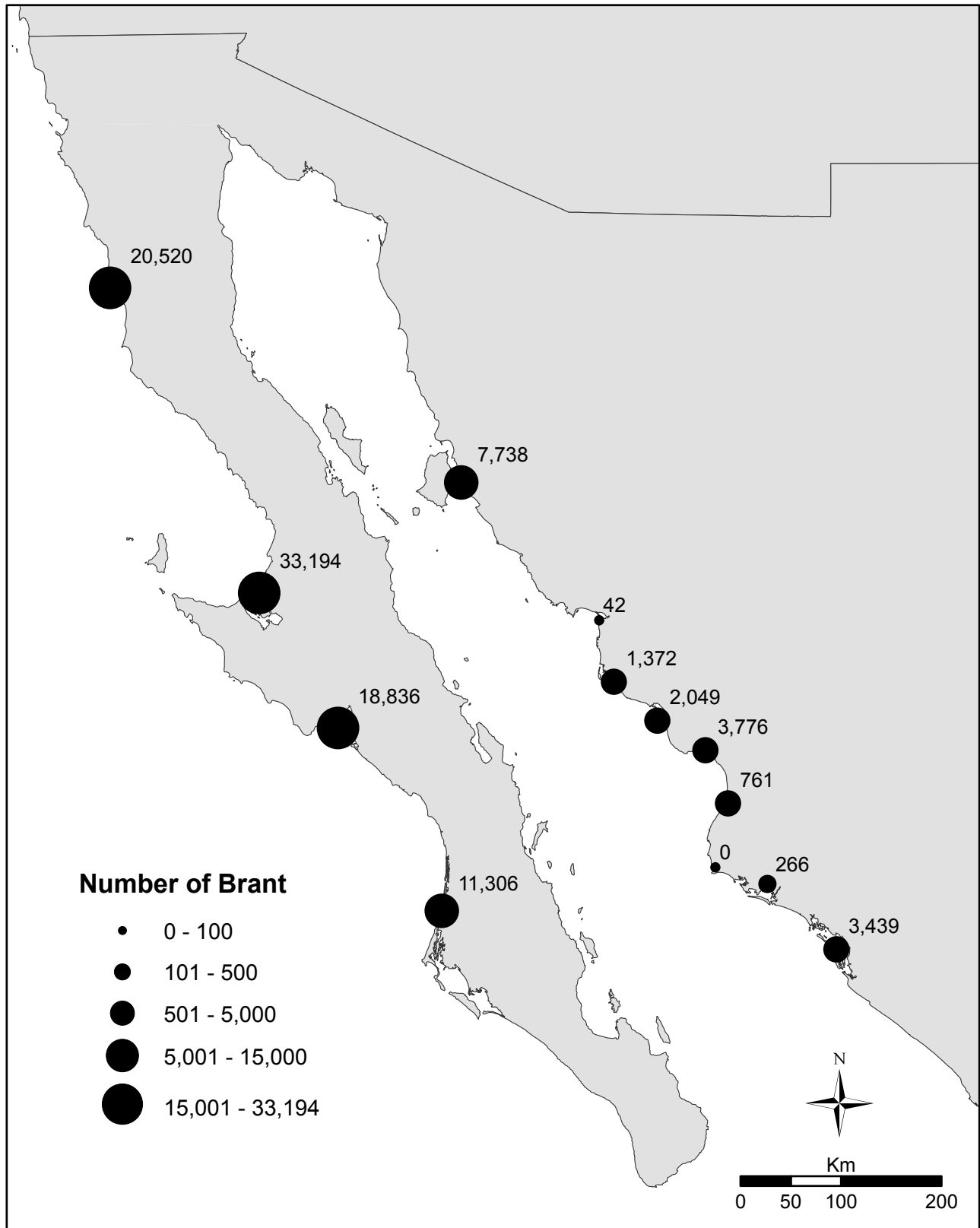
11/12-13	Juneau, AK to Ketchikan, AK to Victoria, B.C.			
1/9-11	Victoria, B.C. to Port Angeles, WA to North Bend, OR to Columbia, CA to Imperial, CA.			
1/14-21	Imperial, CA to brant survey area in Mexico (dates and locations previously described in this report) to Imperial, CA.			
1/22	Imperial, CA to Imperial, CA survey lower Colorado River mouth wetland-Santa Clara Slough.			
1/23-2/8	Imperial, CA to Elko, NV to Boise, ID to Victoria, B.C. to Port Hardy, B.C. to Ketchikan, AK to Juneau, AK (delays due to mechanical and weather).			

Table 5. Latitude-Longitude positions of survey units for Mexico West Coast and Baja California.

Survey Unit	Starting Position	Ending Position
<b>Mainland - West Coast</b>		
1.Mexicali to Tiburon <sup>a</sup>	N32°10' -W115°00'	N29°17' -W112°20'
2.Tiburon to Guaymas <sup>a</sup>	N29°17' -W112°20'	N28°00' -W111°11'
3.Guaymas to Estero de Lobos <sup>b</sup>	N27°55' -W110°50'	N27°30' -W110°35'
4.Estero de Lobos <sup>b</sup>	N27°30' -W110°35'	N27°05' -W110°05'
5.Isla Tobarib <sup>b</sup>	N27°05' -W110°05'	N26°40' -W109°40'
6.Bahia de Santa Barbara <sup>b</sup>	N26°40' -W109°40'	N26°30' -W109°16'
7.Agiabampo	N26°30' -W109°16'	N26°00' -W109°20'
8.Bahia de San Esteban <sup>c</sup>	N25°50' -W109°25'	N25°40' -W109°17'
9.Topolobampo <sup>c</sup>	N25°40' -W109°17'	N25°20' -W108°35'
10.Bahia de Santa Maria	N25°18' -W108°27'	N24°45' -W107°55'
11.Pabellon	N24°40' -W108°00'	N24°20' -W107°25'
12.El Dorado to Dimas	N24°20' -W107°25'	N23°57' -W107°00'
13.Caimanero	N23°06' -W106°13'	N22°52' -W106°00'
14.Marismas Nacional	N22°52' -W106°00'	N21°50' -W105°25'
15.Cuyutlan	N20°05' -W105°34'	N18°56' -W104°02'
<b>Baja de California</b>		
16.Bahia de Magdalena	N25°44' -W112°05'	N24°18' -W111°22'
17.Bahia San Ignacio	N26°25' -W112°46'	N26°50' -W113°30'
18.Scammon's Lagoon	N27°30' -W113°52'	N28°15' -W114°08'
19.San Quintin	N30°23' -W115°55'	N30°30' -W116°00'

Note: In Tables 2 and 3

- <sup>a</sup> Units 1 and 2 = Tiburon
- <sup>b</sup> Units 3 - 6 = Obregon
- <sup>c</sup> Units 8 and 9 = Topolobampo



Appendix 1. Relative abundance of Pacific brant among survey units of the Mexico West Coast and Baja California survey, January 2008.