

Population Monitoring of Elephants Seals at Año Nuevo, 2011

R. Condit

Table 1: Estimates of breeding elephant seal female and pup populations, Año Nuevo rookery, 2011. Number of pups born estimated as $0.975 \times$ female number. Based on tags observed on weaners, 40 had moved from North Point to Main Point before these counts were taken.

Area	Breeding females	Pups born	Pups weaned
Main point	1268	1236	1195
North point	321	313	242
Island	524	511	441
Total	2113	2060	1878

Table 2: Mean body mass in kg for elephant seals, Año Nuevo rookery, 2011. Sample size in parentheses. No correction for time since weaning date.

Age	Females	Males	Sex unknown
Weaner	107.8 (145)	112.6 (140)	133.0 (1)
Pup	47.5 (11)	52.9 (14)	(0)
Adult	458.9 (52)	(0)	(0)

Table 3: Age and origin of breeding females whose tags were read, Año Nuevo rookery, 2011. The row *known* for Año Nuevo is the sum of the previous rows of known age. The following row is the number of observed females that had been tagged at Año Nuevo as adults, so age is not known. Age of most foreign-tagged females is not available to us.

Origin	Age	Main Point	North Point	Island	Total
Año Nuevo	3	2	0	0	2
	4	27	8	2	37
	5	13	4	1	18
	6	12	3	0	15
	7	6	2	0	8
	8	8	4	1	13
	9	12	0	0	12
	10	3	0	0	3
	11	4	6	0	10
	12	4	3	0	7
	13	7	1	0	8
	14	1	1	0	2
	15	1	2	0	3
	16	4	0	0	4
	17	3	0	0	3
	21	0	0	1	0
Año Nuevo	known	107	35	4	146
	unknown	24	8	2	34
San Miguel		5	3	3	11
Point Reyes		7	1	2	10
Gorda		2	2	0	4
Piedras Blancas		8	4	0	12
San Nicolas		2	0	0	2
MM Center		1	2	0	3

Table 4: Elephant seal tagging, Año Nuevo colony, 2011. A total of 1104 Roto tags (green) were deployed on 718 animals. This included 617 weaners/pups plus 63 older animals tagged for the first time, as well as 38 animals re-tagged (already tagged in earlier years). In addition, 84 tags were voided and 48 were unaccounted for (observed but never recorded as original).

A total of 34 PIT tags were also deployed on 18 animals, of which 0 were pups or weaners. PIT tags were always deployed with Roto tags.

The table below covers young-of-the-year by sex and number of tags. The column Total includes a few animals given 3 Roto tags, and the row Total includes a few with sex unknown. Those with PIT tags also had Roto tags and are included in the Total column.

Sex	Single green tag	Double green tag	Total	Also given PIT tag
Female	127	4	331	0
Male	115	2	201	0
Total	255	7	617	0

Table 5: Accounting of tags used on elephant seals at Año Nuevo rookery by UC Santa Cruz and Sonoma State researchers, 2011. Checked out: tags distributed to researchers. Not used: tags still on hand at end of season. Deployed: tags recorded in database on seals. Voided: tags recorded in database as void. Not deployed by observed: tags not recorded in database, but observed on animals (ideally, this would be zero). Unaccounted for: all tags in none of the previous categories (also should be zero).

Tag fate	Count
checked out	1270
deployed	983
voided	57
not used	219
not deployed but observed	48
unaccounted for	-37

Table 6: Number of individual sightings and individual animals identified each year since 2003

Year	Breeding		Non-breeding	
	Sightings	Animals	Sightings	Animals
2003	2926	186	21	1
2004	3779	207	144	32
2005	4926	270	1782	235
2006	4229	286	707	216
2007	2693	187	572	127
2008	1914	200	1271	287
2009	3064	208	835	207
2010	4932	242	2065	346
2011	7240	263	2139	347