



Point Blue Conservation Science (formerly PRBO)
3820 Cypress Drive Suite 11
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Conservation Science for a healthy planet.

March 30, 2020

Robert Pauline
Permits, Conservation, and Education Division
National Marine Fisheries Service (NMFS)
Office of Protected Resources
1315 East-West Highway
Silver Spring, MD 20910-3226

Dear Robert,

Please find enclosed a summary report of pinniped takes from the Incidental Harassment Authorization (IHA) issued to Point Blue Conservation Science (formerly PRBO), Oikonos Ecosystem Knowledge, and Point Reyes National Seashore for the period of January 1, 2019 to December 31, 2019. This IHA supports central California seabird research and related operations on Southeast Farallon Island, Año Nuevo Island, and Point Reyes National Seashore.

Marine mammal species that were impacted by these activities include the California stocks of northern elephant seal (*Mirounga angustirostris*), harbor seal (*Phoca vitulina richardii*), Steller sea lion (*Eumetopias jubatus*), and California sea lion (*Zalophus californianus*). Año Nuevo Island and Point Reyes National Seashore reported less than requested take, and no stampede takes were reported at any site. Southeast Farallon Island had more than the allotted take for Steller Sea Lion and Northern Fur Seals. There were an unusually high number of Steller hauled out high on the marine terrace on one day in May which resulted the extra incidental take. There was also one Northern Fur Seal that was hauled out in an unusual location and incidentally flushed.

Table 1 summarizes total take numbers for Southeast Farallon Island; Table 2 and 3 show similar results for Año Nuevo Island and Point Reyes National Seashore. Table 4 shows the total take for all sites covered by this IHA as well as the authorized take for comparison. Additional directed take to prevent damage to critical infrastructure and ensure human safety was conducted in accordance with sections 101(a)(4) or 109(h) of the MMPA, but those numbers are not reported here.

Appendices 1 lists all take for Southeast Farallon Island, by date, location, species, type and number of takes, and activity during which the take was recorded. Appendix 2 and 3 are similar summaries for Año Nuevo Island and Point Reyes National Seashore. Point Reyes did not conduct seabird surveys during 2019 and therefore did not report any takes during the current permit.

Thank you for reviewing this report, we look forward to hearing from you.

Sincerely,



Point Blue Conservation Science (*formerly PRBO*)
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A handwritten signature in black ink, appearing to read "Pete Warzybok", is positioned above the typed name.

Pete Warzybok
Senior Marine Ecologist/Farallon Program Leader
Point Blue Conservation Science
pwarzybok@pointblue.org

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Table 1. Summary of total IHA take numbers by species from Point Blue on Southeast Farallon Island 1/1/2019 to 12/31/2019.

Species	Total Takes
Northern Elephant Seal (ES)	8
Harbor Seal (HS)	82
Steller Sea Lion (SSL)	50
California Sea Lion (CSL)	9,795
Northern Fur Seal (NFS)	1

Table 2. Summary of total IHA take numbers by species from Oikonos on Año Nuevo Island 1/1/2019 to 12/31/2019.

Species	Total Takes
Northern Elephant Seal (ES)	71
Harbor Seal (HS)	0
Steller Sea Lion (SSL)	0
California Sea Lion (CSL)	552

Table 3. Summary of total IHA take numbers by species from National Parks Service at Point Reyes National Seashore 1/1/2019 to 12/31/2019.

Species	Total Takes
Northern Elephant Seal (ES)	0
Harbor Seal (HS)	0
Steller Sea Lion (SSL)	0
California Sea Lion (CSL)	0

Table 4. Grand totals for all permitted take allowed under this Incidental Harassment Authorization from 1/1/2019 to 12/31/2019.

Species	Total Takes	Authorized Take
Northern Elephant Seal (ES)	79	239
Harbor Seal (HS)	82	304
Steller Sea Lion (SSL)	50	43
California Sea Lion (CSL)	10,408	32,623
Northern Fur Seal (NFS)	1	0



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Appendix 1. All Point Blue IHA take by date, species, location, type of take, and activity from Southeast Farallon Island 1/1/2019 to 12/31/2019.

Date	Species	Location	Level 3 take (flushed)	Level 2 take (move > 1m)	Activity
1/2/2019	CSL	Pinniped Colony	13		Daily Operations
1/2/2019	CSL	Garbage Gulch	5	2	Daily Operations
1/2/2019	CSL	Pinniped Colony	20		Daily Operations
1/5/2019	CSL	Pinniped Colony	5		Daily Operations
1/5/2019	CSL	Pinniped Colony	3		Daily Operations
1/7/2019	CSL	Garbage Gulch	3		Daily Operations
1/7/2019	CSL	Pinniped Colony		2	Daily Operations
1/8/2019	CSL	Pinniped Colony	7		Daily Operations
1/12/2019	CSL	Pinniped Colony		14	Daily Operations
1/13/2019	CSL	Pinniped Colony	4		Daily Operations
1/17/2019	CSL	Pinniped Colony	10		Daily Operations
1/21/2019	CSL	North Landing	20		Daily Operations
1/23/2019	CSL	Pinniped Colony		5	Daily Operations
1/25/2019	CSL	Garbage Gulch	1		Daily Operations
1/29/2019	CSL	North Landing		1	Daily Operations
1/30/2019	CSL	Pinniped Colony	1		Daily Operations
1/30/2019	CSL	Pinniped Colony	3		Daily Operations
2/5/2019	CSL	North Landing		13	Daily Operations
2/7/2019	CSL	Pinniped Colony	2		Daily Operations
2/8/2019	CSL	Pinniped Colony		5	Daily Operations
2/10/2019	CSL	Pinniped Colony	2		Daily Operations
2/11/2019	CSL	Pinniped Colony		2	Daily Operations
2/18/2019	CSL	North Landing	10		Daily Operations
2/19/2019	CSL	Garbage Gulch	16		Daily Operations
2/21/2019	CSL	Pinniped Colony		10	Daily Operations
2/21/2019	CSL	Garbage Gulch	3	5	Daily Operations
2/21/2019	CSL	Pinniped Colony	2		Daily Operations
2/21/2019	CSL	Pinniped Colony	20	30	Daily Operations
2/23/2019	CSL	East Landing	7		Daily Operations
2/23/2019	CSL	Pinniped Colony		60	Daily Operations
2/24/2019	CSL	Pinniped Colony	1		Daily Operations
2/24/2019	CSL	Garbage Gulch	7		Daily Operations



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2/26/2019	CSL	Pinniped Colony	2	6	Daily Operations
2/26/2019	CSL	North Landing	2		Daily Operations
2/27/2019	CSL	Pinniped Colony		1	Daily Operations
3/1/2019	CSL	Pinniped Colony		5	Daily Operations
3/2/2019	CSL	North Landing	10	10	Daily Operations
3/2/2019	CSL	Pinniped Colony	1		Daily Operations
3/3/2019	CSL	Pinniped Colony	16		Daily Operations
3/5/2019	CSL	Pinniped Colony		2	Daily Operations
3/6/2019	CSL	Pinniped Colony	4		Daily Operations
3/8/2019	CSL	North Landing		2	Daily Operations
3/9/2019	CSL	Pinniped Colony	2		Daily Operations
3/10/2019	CSL	Pinniped Colony	1		Daily Operations
3/11/2019	CSL	Pinniped Colony	6		Daily Operations
3/12/2019	CSL	Pinniped Colony	6		Daily Operations
3/12/2019	CSL	Pinniped Colony	1		Daily Operations
3/12/2019	CSL	Pinniped Colony		5	Daily Operations
3/13/2019	CSL	Pinniped Colony		35	Daily Operations
3/13/2019	CSL	Pinniped Colony	15		Daily Operations
3/13/2019	CSL	Pinniped Colony	1		Daily Operations
3/14/2019	CSL	Pinniped Colony	8	25	Daily Operations
3/17/2019	CSL	Pinniped Colony	17		Daily Operations
3/17/2019	CSL	Pinniped Colony		3	Daily Operations
3/19/2019	CSL	Pinniped Colony	12		Daily Operations
3/20/2019	CSL	Pinniped Colony	18		Daily Operations
3/22/2019	CSL	Pinniped Colony	1		Daily Operations
3/23/2019	CSL	Pinniped Colony		1	Daily Operations
3/23/2019	CSL	Pinniped Colony	15	10	Daily Operations
3/24/2019	CSL	Pinniped Colony	27		Daily Operations
3/25/2019	CSL	Pinniped Colony	25		Daily Operations
3/25/2019	CSL	Pinniped Colony	16		Daily Operations
3/26/2019	CSL	Pinniped Colony	25		Daily Operations
3/26/2019	CSL	Pinniped Colony	12		Daily Operations
3/27/2019	CSL	North Landing	5		Daily Operations
3/27/2019	CSL	Pinniped Colony		1	Daily Operations
3/28/2019	CSL	North Landing	20		Daily Operations
3/29/2019	CSL	Pinniped Colony	17		Daily Operations
3/30/2019	CSL	Pinniped Colony		10	Daily Operations



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3/30/2019	CSL	Pinniped Colony	1		Daily Operations
3/30/2019	CSL	Pinniped Colony	2		Daily Operations
3/31/2019	CSL	Pinniped Colony	12		Daily Operations
4/1/2019	CSL	Pinniped Colony		20	Daily Operations
4/2/2019	CSL	Pinniped Colony	6		Daily Operations
4/2/2019	CSL	East Landing	3		Daily Operations
4/2/2019	CSL	Pinniped Colony	10		Daily Operations
4/5/2019	CSL	Pinniped Colony	8		Daily Operations
4/7/2019	CSL	Garbage Gulch	1		Daily Operations
4/7/2019	CSL	Pinniped Colony	1		Daily Operations
4/11/2019	CSL	North Landing	8		Daily Operations
4/11/2019	CSL	Pinniped Colony	1		Daily Operations
4/12/2019	CSL	Pinniped Colony	1		Daily Operations
4/13/2019	CSL	Pinniped Colony	3		Daily Operations
4/13/2019	CSL	Garbage Gulch	3		Daily Operations
4/16/2019	CSL	Pinniped Colony	1		Daily Operations
4/18/2019	CSL	Pinniped Colony	1		Daily Operations
5/7/2019	CSL	Garbage Gulch	4		Daily Operations
5/9/2019	CSL	Pinniped Colony		3	Daily Operations
5/16/2019	CSL	Pinniped Colony	15	20	Daily Operations
5/16/2019	CSL	Pinniped Colony	1		Daily Operations
5/17/2019	CSL	Garbage Gulch	10		Daily Operations
5/19/2019	CSL	Pinniped Colony		2	Daily Operations
5/19/2019	CSL	Pinniped Colony	3		Daily Operations
5/22/2019	CSL	Garbage Gulch	1		Daily Operations
5/24/2019	CSL	East Landing	1		Daily Operations
5/25/2019	CSL	Pinniped Colony		2	Daily Operations
5/25/2019	CSL	East Landing	1		Daily Operations
5/27/2019	CSL	Garbage Gulch	15		Daily Operations
5/27/2019	CSL	North Landing		2	Daily Operations
5/28/2019	CSL	Pinniped Colony		1	Daily Operations
5/28/2019	CSL	Pinniped Colony		2	Daily Operations
5/28/2019	CSL	North Landing	5		Daily Operations
5/30/2019	CSL	Pinniped Colony		30	Daily Operations
5/31/2019	CSL	Pinniped Colony	2		Daily Operations
6/1/2019	CSL	Garbage Gulch	30		Daily Operations
6/2/2019	CSL	East Landing	20	20	Daily Operations



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6/2/2019	CSL	North Landing		1	Daily Operations
6/3/2019	CSL	Pinniped Colony		13	Daily Operations
6/5/2019	CSL	East Landing		24	Daily Operations
6/5/2019	CSL	Pinniped Colony		10	Daily Operations
6/6/2019	CSL	Pinniped Colony		2	Daily Operations
6/7/2019	CSL	Pinniped Colony	5		Daily Operations
6/7/2019	CSL	North Landing		2	Daily Operations
6/8/2019	CSL	Pinniped Colony		4	Daily Operations
6/8/2019	CSL	North Landing		1	Daily Operations
6/8/2019	CSL	Pinniped Colony		1	Daily Operations
6/9/2019	CSL	Pinniped Colony		2	Daily Operations
6/9/2019	CSL	North Landing		1	Daily Operations
6/10/2019	CSL	East Landing	3		Daily Operations
6/10/2019	CSL	Pinniped Colony		1	Daily Operations
6/12/2019	CSL	Pinniped Colony		2	Daily Operations
6/13/2019	CSL	Pinniped Colony		30	Daily Operations
6/15/2019	CSL	Pinniped Colony	1		Daily Operations
6/15/2019	CSL	Pinniped Colony		12	Daily Operations
6/16/2019	CSL	Pinniped Colony		39	Daily Operations
6/16/2019	CSL	Pinniped Colony		50	Daily Operations
6/17/2019	CSL	North Landing		5	Daily Operations
6/18/2019	CSL	Pinniped Colony	1	1	Daily Operations
6/18/2019	CSL	East Landing	6		Daily Operations
6/19/2019	CSL	East Landing	9	1	Daily Operations
6/20/2019	CSL	East Landing		3	Daily Operations
6/20/2019	CSL	Pinniped Colony		1	Daily Operations
6/21/2019	CSL	Pinniped Colony		6	Daily Operations
6/23/2019	CSL	Pinniped Colony	3		Daily Operations
6/23/2019	CSL	East Landing		1	Daily Operations
6/25/2019	CSL	Pinniped Colony		1	Daily Operations
6/25/2019	CSL	East Landing		2	Daily Operations
6/26/2019	CSL	Garbage Gulch	9	1	Daily Operations
6/26/2019	CSL	Pinniped Colony	1	9	Daily Operations
6/26/2019	CSL	Pinniped Colony	1	1	Daily Operations
6/27/2019	CSL	Pinniped Colony	1	1	Daily Operations
6/27/2019	CSL	Pinniped Colony		4	Daily Operations
6/28/2019	CSL	Garbage Gulch	12		Daily Operations



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6/28/2019	CSL	Pinniped Colony		6	Daily Operations
6/28/2019	CSL	Pinniped Colony		2	Daily Operations
6/30/2019	CSL	Pinniped Colony	12		Daily Operations
6/30/2019	CSL	Pinniped Colony		1	Daily Operations
7/1/2019	CSL	Garbage Gulch	1		Daily Operations
7/1/2019	CSL	Garbage Gulch	4		Daily Operations
7/1/2019	CSL	Pinniped Colony		18	Daily Operations
7/1/2019	CSL	Pinniped Colony		1	Daily Operations
7/1/2019	CSL	Pinniped Colony	20		Daily Operations
7/2/2019	CSL	Pinniped Colony		4	Daily Operations
7/3/2019	CSL	Pinniped Colony		1	Daily Operations
7/3/2019	CSL	Pinniped Colony		6	Daily Operations
7/3/2019	CSL	Pinniped Colony	2	1	Daily Operations
7/4/2019	CSL	Pinniped Colony	4	18	Daily Operations
7/4/2019	CSL	East Landing		15	Daily Operations
7/4/2019	CSL	Pinniped Colony		10	Daily Operations
7/5/2019	CSL	Pinniped Colony	20		Daily Operations
7/6/2019	CSL	Pinniped Colony		1	Daily Operations
7/6/2019	CSL	Garbage Gulch	27		Daily Operations
7/7/2019	CSL	Pinniped Colony	2	5	Daily Operations
7/7/2019	CSL	Pinniped Colony	15		Daily Operations
7/7/2019	CSL	Pinniped Colony		1	Daily Operations
7/8/2019	CSL	Pinniped Colony		4	Daily Operations
7/8/2019	CSL	Garbage Gulch	5		Daily Operations
7/8/2019	CSL	Pinniped Colony		5	Daily Operations
7/9/2019	CSL	Pinniped Colony		3	Daily Operations
7/10/2019	CSL	Pinniped Colony		4	Daily Operations
7/11/2019	CSL	Pinniped Colony		40	Daily Operations
7/11/2019	CSL	Garbage Gulch	40		Daily Operations
7/11/2019	CSL	Pinniped Colony		3	Daily Operations
7/12/2019	CSL	Pinniped Colony		30	Daily Operations
7/12/2019	CSL	Pinniped Colony	6		Daily Operations
7/13/2019	CSL	Pinniped Colony		29	Daily Operations
7/14/2019	CSL	Garbage Gulch	20		Daily Operations
7/14/2019	CSL	Pinniped Colony		15	Daily Operations
7/15/2019	CSL	Pinniped Colony	15	5	Daily Operations
7/15/2019	CSL	Pinniped Colony	10	20	Daily Operations



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7/16/2019	CSL	Pinniped Colony		150	Daily Operations
7/16/2019	CSL	Garbage Gulch	15		Daily Operations
7/17/2019	CSL	Garbage Gulch	1		Daily Operations
7/17/2019	CSL	Pinniped Colony	10	5	Daily Operations
7/17/2019	CSL	Pinniped Colony	10	35	Daily Operations
7/18/2019	CSL	East Landing		7	Daily Operations
7/18/2019	CSL	Pinniped Colony	10	2	Daily Operations
7/18/2019	CSL	Pinniped Colony	22		Daily Operations
7/19/2019	CSL	North Landing		50	Daily Operations
7/19/2019	CSL	Pinniped Colony	5	32	Daily Operations
7/19/2019	CSL	Pinniped Colony		150	Daily Operations
7/20/2019	CSL	Pinniped Colony	81		Daily Operations
7/20/2019	CSL	Pinniped Colony		16	Daily Operations
7/20/2019	CSL	Garbage Gulch	15		Daily Operations
7/21/2019	CSL	Pinniped Colony		30	Daily Operations
7/21/2019	CSL	Pinniped Colony	15		Daily Operations
7/22/2019	CSL	Pinniped Colony		50	Daily Operations
7/23/2019	CSL	Sea Lion Cove		200	Daily Operations
7/23/2019	CSL	Pinniped Colony		50	Daily Operations
7/24/2019	CSL	Pinniped Colony	20	10	Daily Operations
7/25/2019	CSL	Pinniped Colony		10	Daily Operations
7/26/2019	CSL	Pinniped Colony		30	Daily Operations
7/26/2019	CSL	Pinniped Colony	18		Daily Operations
7/26/2019	CSL	Pinniped Colony		1	Daily Operations
7/26/2019	CSL	Pinniped Colony		15	Daily Operations
7/26/2019	CSL	Garbage Gulch	10		Daily Operations
7/27/2019	CSL	Sea Lion Cove		200	Daily Operations
7/27/2019	CSL	Pinniped Colony	6		Daily Operations
7/28/2019	CSL	Pinniped Colony		1	Daily Operations
7/28/2019	CSL	Pinniped Colony		50	Daily Operations
7/28/2019	CSL	Pinniped Colony		7	Daily Operations
7/29/2019	CSL	Garbage Gulch	15		Daily Operations
7/29/2019	CSL	Pinniped Colony		20	Daily Operations
7/30/2019	CSL	Pinniped Colony	33	20	Daily Operations
7/30/2019	CSL	Pinniped Colony		11	Daily Operations
7/31/2019	CSL	Pinniped Colony		3	Daily Operations
7/31/2019	CSL	Pinniped Colony		50	Daily Operations



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7/31/2019	CSL	Garbage Gulch	45		Daily Operations
7/1/1937	CSL	Pinniped Colony		4	Daily Operations
8/1/2019	CSL	East Landing	1		Daily Operations
8/2/2019	CSL	Pinniped Colony		11	Daily Operations
8/2/2019	CSL	North Landing		1	Daily Operations
8/2/2019	CSL	Pinniped Colony		50	Daily Operations
8/2/2019	CSL	Pinniped Colony	35		Daily Operations
8/2/2019	CSL	Pinniped Colony		20	Daily Operations
8/2/2019	CSL	Pinniped Colony		8	Daily Operations
8/3/2019	CSL	Pinniped Colony		65	Daily Operations
8/4/2019	CSL	Pinniped Colony		75	Daily Operations
8/4/2019	CSL	Pinniped Colony	30	10	Daily Operations
8/4/2019	CSL	Garbage Gulch	25		Daily Operations
8/5/2019	CSL	Sea Lion Cove		60	Daily Operations
8/5/2019	CSL	Pinniped Colony		120	Daily Operations
8/5/2019	CSL	Pinniped Colony	40	15	Daily Operations
8/5/2019	CSL	Pinniped Colony		20	Daily Operations
8/5/2019	CSL	Garbage Gulch	30		Daily Operations
8/9/2019	CSL	Pinniped Colony		60	Daily Operations
8/6/2019	CSL	North Landing		10	Daily Operations
8/7/2019	CSL	Pinniped Colony		65	Daily Operations
8/7/2019	CSL	Garbage Gulch	30		Daily Operations
8/7/2019	CSL	Pinniped Colony		12	Daily Operations
8/8/2019	CSL	Pinniped Colony	20	2	Daily Operations
8/8/2019	CSL	Pinniped Colony		5	Daily Operations
8/9/2019	CSL	Pinniped Colony		5	Daily Operations
8/9/2019	CSL	North Landing		3	Daily Operations
8/9/2019	CSL	Pinniped Colony	30		Daily Operations
8/10/2019	CSL	North Landing	1	1	Daily Operations
8/10/2019	CSL	Pinniped Colony		3	Daily Operations
8/10/2019	CSL	Garbage Gulch	42		Daily Operations
8/11/2019	CSL	Sea Lion Cove		12	Daily Operations
8/12/2019	CSL	Pinniped Colony		10	Daily Operations
8/13/2019	CSL	North Landing		12	Daily Operations
8/13/2019	CSL	Pinniped Colony		100	Daily Operations
8/13/2019	CSL	Garbage Gulch	35		Daily Operations
8/13/2019	CSL	Pinniped Colony		12	Daily Operations



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8/15/2019	CSL	Garbage Gulch	50		Daily Operations
8/17/2019	CSL	Pinniped Colony		25	Daily Operations
8/17/2019	CSL	Pinniped Colony	20	30	Daily Operations
8/20/2019	CSL	Garbage Gulch	40		Daily Operations
8/20/2019	CSL	Pinniped Colony		85	Daily Operations
8/20/2019	CSL	Pinniped Colony		15	Daily Operations
8/20/2019	CSL	Pinniped Colony		4	Daily Operations
8/21/2019	CSL	Pinniped Colony		100	Daily Operations
8/21/2019	CSL	Pinniped Colony		80	Daily Operations
8/21/2019	CSL	Pinniped Colony		40	Daily Operations
8/22/2019	CSL	Pinniped Colony		50	Daily Operations
8/22/2019	CSL	Pinniped Colony		1	Daily Operations
8/23/2019	CSL	Pinniped Colony		30	Daily Operations
8/23/2019	CSL	Sea Lion Cove		100	Daily Operations
8/23/2019	CSL	Pinniped Colony		50	Daily Operations
8/25/2019	CSL	Pinniped Colony		15	Daily Operations
8/25/2019	CSL	Garbage Gulch	7	40	Daily Operations
8/25/2019	CSL	Pinniped Colony		40	Daily Operations
8/25/2019	CSL	Pinniped Colony		12	Daily Operations
8/26/2019	CSL	Pinniped Colony		12	Daily Operations
8/26/2019	CSL	Pinniped Colony		60	Daily Operations
8/26/2019	CSL	Pinniped Colony		17	Daily Operations
8/27/2019	CSL	Pinniped Colony		15	Daily Operations
8/28/2019	CSL	Garbage Gulch	10	10	Daily Operations
8/28/2019	CSL	Pinniped Colony		30	Daily Operations
8/29/2019	CSL	Pinniped Colony		3	Daily Operations
8/29/2019	CSL	Pinniped Colony		3	Daily Operations
8/30/2019	CSL	Pinniped Colony		10	Daily Operations
8/31/2019	CSL	Pinniped Colony		2	Daily Operations
8/31/2019	CSL	East Landing		6	Daily Operations
8/31/2019	CSL	Pinniped Colony		10	Daily Operations
8/31/2019	CSL	Pinniped Colony		2	Daily Operations
9/1/2019	CSL	Pinniped Colony		300	Daily Operations
9/1/2019	CSL	Pinniped Colony	35		Daily Operations
9/1/2019	CSL	Pinniped Colony		80	Daily Operations
9/2/2019	CSL	Pinniped Colony		50	Daily Operations
9/2/2019	CSL	Pinniped Colony		2	Daily Operations



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9/4/2019	CSL	Pinniped Colony		150	Daily Operations
9/4/2019	CSL	Pinniped Colony	2		Daily Operations
9/5/2019	CSL	Pinniped Colony		75	Daily Operations
9/6/2019	CSL	Pinniped Colony	1		Daily Operations
9/6/2019	CSL	Pinniped Colony		50	Daily Operations
9/7/2019	CSL	Pinniped Colony		30	Daily Operations
9/7/2019	CSL	Pinniped Colony	5		Daily Operations
9/8/2019	CSL	Pinniped Colony		1	Daily Operations
9/8/2019	CSL	Pinniped Colony		10	Daily Operations
9/8/2019	CSL	Pinniped Colony		60	Daily Operations
9/10/2019	CSL	North Landing		27	Daily Operations
9/10/2019	CSL	Pinniped Colony	1		Daily Operations
9/10/2019	CSL	Pinniped Colony		15	Daily Operations
9/16/2019	CSL	Pinniped Colony		6	Daily Operations
9/16/2019	CSL	Pinniped Colony		50	Daily Operations
9/17/2019	CSL	Pinniped Colony		60	Daily Operations
9/17/2019	CSL	Pinniped Colony	5		Daily Operations
9/20/2019	CSL	Garbage Gulch	10		Daily Operations
9/21/2019	CSL	Pinniped Colony		20	Daily Operations
9/21/2019	CSL	Pinniped Colony	8		Daily Operations
9/21/2019	CSL	Pinniped Colony		35	Daily Operations
9/22/2019	CSL	Pinniped Colony	10		Daily Operations
9/22/2019	CSL	Pinniped Colony		400	Daily Operations
9/23/2019	CSL	Pinniped Colony		200	Daily Operations
9/23/2019	CSL	Pinniped Colony	50		Daily Operations
9/24/2019	CSL	Pinniped Colony	10		Daily Operations
9/24/2019	CSL	Pinniped Colony	15		Daily Operations
9/26/2019	CSL	Pinniped Colony		100	Daily Operations
9/26/2019	CSL	Garbage Gulch	10		Daily Operations
9/27/2019	CSL	Garbage Gulch	15		Daily Operations
9/29/2019	CSL	Pinniped Colony	10	7	Daily Operations
9/29/2019	CSL	Pinniped Colony	4		Daily Operations
9/30/2019	CSL	North Landing	40	70	Daily Operations
9/30/2019	CSL	Sea Lion Cove		15	Daily Operations
10/1/2019	CSL	Pinniped Colony		150	Daily Operations
10/1/2019	CSL	Pinniped Colony	3	15	Daily Operations
10/2/2019	CSL	Pinniped Colony		30	Daily Operations



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10/3/2019	CSL	Pinniped Colony	5		Daily Operations
10/3/2019	CSL	Pinniped Colony		50	Daily Operations
10/3/2019	CSL	Pinniped Colony	2		Daily Operations
10/6/2019	CSL	Pinniped Colony		1	Daily Operations
10/8/2019	CSL	Pinniped Colony		20	Daily Operations
10/8/2019	CSL	Pinniped Colony		6	Daily Operations
10/9/2019	CSL	Pinniped Colony		122	Daily Operations
10/9/2019	CSL	Pinniped Colony		100	Daily Operations
10/9/2019	CSL	Pinniped Colony		20	Daily Operations
10/10/2019	CSL	Pinniped Colony	10		Daily Operations
10/11/2019	CSL	Pinniped Colony		11	Daily Operations
10/12/2019	CSL	Pinniped Colony	2	1	Daily Operations
10/12/2019	CSL	Pinniped Colony		20	Daily Operations
10/12/2019	CSL	Pinniped Colony		15	Daily Operations
10/14/2019	CSL	Garbage Gulch	40		Daily Operations
10/14/2019	CSL	Pinniped Colony	6		Daily Operations
10/14/2019	CSL	Pinniped Colony	8	7	Daily Operations
10/15/2019	CSL	Garbage Gulch	5		Daily Operations
10/18/2019	CSL	Pinniped Colony		30	Daily Operations
10/18/2019	CSL	Pinniped Colony	1		Daily Operations
10/19/2019	CSL	Garbage Gulch		60	Daily Operations
10/19/2019	CSL	Pinniped Colony	1		Daily Operations
10/19/2019	CSL	Pinniped Colony	1		Daily Operations
10/20/2019	CSL	Garbage Gulch	10		Daily Operations
10/20/2019	CSL	North Landing		30	Daily Operations
10/21/2019	CSL	Sea Lion Cove	10		Daily Operations
10/21/2019	CSL	Pinniped Colony	10		Daily Operations
10/22/2019	CSL	Pinniped Colony		15	Daily Operations
10/23/2019	CSL	Garbage Gulch	10		Daily Operations
10/23/2019	CSL	Pinniped Colony		15	Daily Operations
10/23/2019	CSL	Pinniped Colony		20	Daily Operations
10/23/2019	CSL	North Landing		15	Daily Operations
10/23/2019	CSL	Pinniped Colony		100	Daily Operations
10/24/2019	CSL	Pinniped Colony	8	20	Daily Operations
10/25/2019	CSL	Garbage Gulch	6		Daily Operations
10/25/2019	CSL	Pinniped Colony		5	Daily Operations
10/26/2019	CSL	Pinniped Colony		100	Daily Operations



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10/26/2019	CSL	Garbage Gulch		10	Daily Operations
10/26/2019	CSL	Pinniped Colony	15	15	Daily Operations
10/28/2019	CSL	Pinniped Colony	5	10	Daily Operations
10/29/2019	CSL	Garbage Gulch	7		Daily Operations
10/29/2019	CSL	Pinniped Colony		30	Daily Operations
10/29/2019	CSL	Pinniped Colony	5	10	Daily Operations
10/30/2019	CSL	Sea Lion Cove		8	Daily Operations
10/31/2019	CSL	Garbage Gulch	5		Daily Operations
11/1/2019	CSL	Pinniped Colony	5	10	Daily Operations
11/2/2019	CSL	Garbage Gulch	6	16	Daily Operations
11/3/2019	CSL	Pinniped Colony		30	Daily Operations
11/4/2019	CSL	Garbage Gulch	15		Daily Operations
11/4/2019	CSL	Pinniped Colony	3		Daily Operations
11/4/2019	CSL	Pinniped Colony		50	Daily Operations
11/5/2019	CSL	Pinniped Colony		50	Daily Operations
11/5/2019	CSL	Pinniped Colony		3	Daily Operations
11/5/2019	CSL	Pinniped Colony		3	Daily Operations
11/5/2019	CSL	Garbage Gulch	3		Daily Operations
11/5/2019	CSL	Pinniped Colony		20	Daily Operations
11/6/2019	CSL	Garbage Gulch	3		Daily Operations
11/6/2019	CSL	Pinniped Colony		200	Daily Operations
11/6/2019	CSL	Pinniped Colony	10	15	Daily Operations
11/6/2019	CSL	Pinniped Colony	3		Daily Operations
11/7/2019	CSL	Garbage Gulch	12		Daily Operations
11/7/2019	CSL	Pinniped Colony	5		Daily Operations
11/7/2019	CSL	Pinniped Colony	5		Daily Operations
11/8/2019	CSL	Garbage Gulch	5		Daily Operations
11/8/2019	CSL	Pinniped Colony	1	1	Daily Operations
11/9/2019	CSL	Pinniped Colony		15	Daily Operations
11/9/2019	CSL	Pinniped Colony		15	Daily Operations
11/10/2019	CSL	Pinniped Colony	3	12	Daily Operations
11/10/2019	CSL	Pinniped Colony	10		Daily Operations
11/11/2019	CSL	Garbage Gulch	35		Daily Operations
11/11/2019	CSL	Pinniped Colony	8		Daily Operations
11/13/2019	CSL	Pinniped Colony	20		Daily Operations
11/13/2019	CSL	East Landing	6		Daily Operations
11/13/2019	CSL	North Landing	1		Daily Operations



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11/13/2019	CSL	Garbage Gulch	4		Daily Operations
11/14/2019	CSL	Pinniped Colony		1	Daily Operations
11/15/2019	CSL	Pinniped Colony		30	Daily Operations
11/18/2019	CSL	Garbage Gulch	5		Daily Operations
11/19/2019	CSL	Pinniped Colony		20	Daily Operations
11/22/2019	CSL	Pinniped Colony		30	Daily Operations
11/22/2019	CSL	Pinniped Colony		20	Daily Operations
11/23/2019	CSL	Pinniped Colony		20	Daily Operations
11/23/2019	CSL	Pinniped Colony		10	Daily Operations
11/24/2019	CSL	Sea Lion Cove		2	Daily Operations
11/24/2019	CSL	Pinniped Colony		20	Daily Operations
11/25/2019	CSL	Pinniped Colony		15	Daily Operations
11/26/2019	CSL	Pinniped Colony		50	Daily Operations
11/27/2019	CSL	Pinniped Colony		20	Daily Operations
11/29/2019	CSL	Sea Lion Cove	2		Daily Operations
11/30/2019	CSL	Sea Lion Cove		50	Daily Operations
11/30/2019	CSL	Pinniped Colony		20	Daily Operations
12/3/2019	CSL	Sea Lion Cove	10	20	Daily Operations
12/4/2019	CSL	Pinniped Colony	10	10	Daily Operations
12/5/2019	CSL	Sea Lion Cove	8		Daily Operations
12/5/2019	CSL	Pinniped Colony	10		Daily Operations
12/8/2019	CSL	Pinniped Colony	40		Daily Operations
12/8/2019	CSL	Pinniped Colony	14		Daily Operations
12/11/2019	CSL	Pinniped Colony	20		Daily Operations
12/12/2019	CSL	Pinniped Colony	2		Daily Operations
12/14/2019	CSL	Garbage Gulch	8		Daily Operations
12/14/2019	CSL	Pinniped Colony	3		Daily Operations
12/15/2019	CSL	Pinniped Colony	2		Daily Operations
12/15/2019	CSL	Pinniped Colony		2	Daily Operations
12/16/2019	CSL	Pinniped Colony		1	Daily Operations
12/16/2019	CSL	Pinniped Colony		2	Daily Operations
12/18/2019	CSL	Pinniped Colony	8		Daily Operations
12/19/2019	CSL	North Landing	30	20	Daily Operations
12/21/2019	CSL	Pinniped Colony		2	Daily Operations
12/24/2019	CSL	Pinniped Colony	2		Daily Operations
12/29/2019	CSL	Pinniped Colony	1		Daily Operations
1/21/2019	SSL	North Landing	5		Daily Operations



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2/16/2019	SSL	Pinniped Colony	3		Daily Operations
2/24/2019	SSL	North Landing	1		Daily Operations
2/26/2019	SSL	North Landing	1		Daily Operations
3/3/2019	SSL	Pinniped Colony	1		Daily Operations
3/6/2019	SSL	Pinniped Colony	1		Daily Operations
3/13/2019	SSL	Pinniped Colony		5	Daily Operations
3/19/2019	SSL	Pinniped Colony	6		Daily Operations
3/26/2019	SSL	Pinniped Colony		3	Daily Operations
3/30/2019	SSL	Pinniped Colony	3		Daily Operations
4/3/2019	SSL	Pinniped Colony	1		Daily Operations
4/5/2019	SSL	Pinniped Colony	10		Daily Operations
4/16/2019	SSL	Pinniped Colony	3		Daily Operations
5/14/2019	SSL	Pinniped Colony	2	10	Daily Operations
5/29/2019	SSL	North Landing	1		Daily Operations
6/3/2019	SSL	Pinniped Colony		2	Daily Operations
9/24/2019	SSL	North Landing	3		Daily Operations
5/9/2019	NES	Garbage Gulch	1		Daily Operations
8/25/2019	NES	Garbage Gulch	1		Daily Operations
10/25/2019	NES	Garbage Gulch	5		Daily Operations
11/27/2019	NES	Pinniped Colony		1	Daily Operations
1/8/2019	HS	Pinniped Colony	1		Daily Operations
1/9/2019	HS	Pinniped Colony	6		Daily Operations
1/25/2019	HS	Garbage Gulch	1		Daily Operations
1/30/2019	HS	Pinniped Colony	1		Daily Operations
2/9/2019	HS	Pinniped Colony	1		Daily Operations
2/28/2019	HS	Pinniped Colony	2		Daily Operations
2/28/2019	HS	Pinniped Colony	1		Daily Operations
3/1/2019	HS	Pinniped Colony		1	Daily Operations
3/2/2019	HS	Pinniped Colony		2	Daily Operations
3/2/2019	HS	Pinniped Colony	1	2	Daily Operations
3/3/2019	HS	Pinniped Colony	1		Daily Operations
3/3/2019	HS	Pinniped Colony		1	Daily Operations
3/6/2019	HS	Pinniped Colony	1		Daily Operations
3/7/2019	HS	Pinniped Colony	1		Daily Operations
3/11/2019	HS	Pinniped Colony	1		Daily Operations
3/19/2019	HS	Garbage Gulch	1		Daily Operations
3/24/2019	HS	Pinniped Colony	1		Daily Operations



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3/25/2019	HS	Pinniped Colony		1	Daily Operations
3/27/2019	HS	Pinniped Colony		1	Daily Operations
3/28/2019	HS	Pinniped Colony		1	Daily Operations
3/29/2019	HS	Pinniped Colony	1		Daily Operations
3/29/2019	HS	Garbage Gulch	1		Daily Operations
4/9/2019	HS	Garbage Gulch	1		Daily Operations
4/12/2019	HS	Pinniped Colony	2		Daily Operations
4/14/2019	HS	Pinniped Colony	1		Daily Operations
4/20/2019	HS	Pinniped Colony	1		Daily Operations
4/20/2019	HS	North Landing	2		Daily Operations
6/2/2019	HS	Pinniped Colony		2	Daily Operations
6/5/2019	HS	Pinniped Colony		1	Daily Operations
7/14/2019	HS	Garbage Gulch	2		Daily Operations
7/20/2019	HS	East Landing	6		Daily Operations
7/21/2019	HS	Pinniped Colony	2		Daily Operations
8/2/2019	HS	Pinniped Colony	1		Daily Operations
9/11/2019	HS	Pinniped Colony	1		Daily Operations
10/7/2019	HS	Pinniped Colony	1		Daily Operations
10/9/2019	HS	Pinniped Colony	1		Daily Operations
10/19/2019	HS	Pinniped Colony	4		Daily Operations
10/23/2019	HS	Pinniped Colony	1		Daily Operations
10/24/2019	HS	Pinniped Colony	2		Daily Operations
11/2/2019	HS	Pinniped Colony	1		Daily Operations
11/2/2019	HS	Pinniped Colony	1		Daily Operations
11/6/2019	HS	Pinniped Colony	1		Daily Operations
11/7/2019	HS	Pinniped Colony	2		Daily Operations
11/13/2019	HS	Pinniped Colony	1		Daily Operations
11/14/2019	HS	Pinniped Colony	2		Daily Operations
12/3/2019	HS	Pinniped Colony	6		Daily Operations
12/25/2019	HS	Pinniped Colony		1	Daily Operations
12/26/2020	HS	Garbage Gulch	1		Daily Operations
12/27/2020	HS	Pinniped Colony		1	Daily Operations
12/29/2019	HS	Pinniped Colony	1		Daily Operations
12/30/2019	HS	Pinniped Colony	1		Daily Operations
12/30/2019	HS	Pinniped Colony	1		Daily Operations
1/14/2019	NFS	Pinniped Colony	1		Daily Operations

Appendix 2. All Oikonos take by date, species, location, type of take, and activity from Año Nuevo Island 1/1/2019 to 12/31/2019.

Date	Species	Location	Level 3 take (flushed)	Level 2 take (Moved >1 m)	Activity
3/18/2019	CSL	Landing cove	15	0	seabird monitoring
3/29/2019	ES	Landing cove	5	0	seabird monitoring
3/29/2019	ES	Mainland Beach	3	0	seabird monitoring
4/4/2019	CSL	Landing cove	45	0	seabird monitoring
4/4/2019	ES	Landing cove	5	0	seabird monitoring
4/18/2019	ES	Landing cove	2	0	seabird monitoring
4/25/2019	ES	Landing Cove	4	0	seabird monitoring
4/25/2019	ES	Mainland Beach	0	2	seabird monitoring
4/25/2019	CSL	Main beach	75	0	seabird monitoring
5/2/2019	ES	Mainland Beach	0	5	seabird monitoring
5/2/2019	ES	Landing cove	12	0	seabird monitoring
5/2/2019	CSL	North Terrace	35	0	seabird monitoring
5/9/2019	CSL	Landing cove	17	0	seabird monitoring
5/9/2019	ES	Landing cove	10	0	seabird monitoring
5/24/2019	ES	Landing cove	3	0	seabird monitoring
5/30/2019	CSL	Landing cove	5	0	seabird monitoring
5/31/2019	CSL	Landing cove	10	0	seabird monitoring
6/6/2019	CSL	landing cove	20	0	seabird monitoring
6/13/2019	CSL	Landing cove	20	0	seabird monitoring
6/13/2019	ES	Landing cove	5	0	seabird monitoring
6/19/2019	CSL	Landing cove	10	0	seabird monitoring
6/26/2019	CSL	Landing cove	20	0	seabird monitoring
6/26/2019	ES	Landing cove	5	0	seabird monitoring
7/3/2019	CSL	Landing cove	5	0	seabird monitoring
7/10/2019	ES	Landing cove	5	0	seabird monitoring
7/11/2019	CSL	Landing cove	10	0	seabird monitoring
7/11/2019	CSL	Main beach	50	0	seabird monitoring
7/17/2019	CSL	Main beach	25	0	seabird monitoring
7/17/2019	ES	Landing cove	1	0	seabird monitoring
7/24/2019	ES	Landing cove	2	0	seabird monitoring
7/24/2019	CSL	Landing cove	20	0	seabird monitoring



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8/1/2019	CSL	Landing Cove	15	0	seabird monitoring
8/1/2019	NES	Landing Cove	1	0	seabird monitoring
8/7/2019	CSL	Main beach	100	0	seabird monitoring
8/14/2019	CSL	Main beach	25	0	seabird monitoring
8/29/2019	CSL	Landing cove	5	0	seabird monitoring
9/5/2019	CSL	Landing Cove	10	0	seabird monitoring
10/4/2019	CSL	Landing Cove	5	0	seabird monitoring
10/10/2019	CSL	Landing Cove	5	0	seabird monitoring
10/11/2019	CSL	Landing Cove	5	0	seabird monitoring
10/11/2019	NES	Landing Cove	1	0	seabird monitoring

Appendix 3. All National Parks Service IHA take by date, species, location, type of take, and activity from Point Reyes National Seashore 1/1/2019 to 12/31/2019.

Date	Species	Location	Level 3 take (flushed)	Level 2 take (move >1 m)	Activity
No takes during 2019			0	0	Seabird Survey