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DEPARTMENT OF COMMERCE

National Oceanic and Atmospheric Administration

RIN 0648-XD110

Takes of Marine Mammals Incidental to Specified Activities; Taking Marine Mammals Incidental to Russian River Estuary Management Activities

AGENCY: National Marine Fisheries Service (NMFS), National Oceanic and Atmospheric Administration (NOAA), Commerce.

ACTION: Notice; proposed incidental harassment authorization; request for comments.

SUMMARY: NMFS has received a request from the Sonoma County Water Agency (SCWA) for authorization to take marine mammals incidental to Russian River estuary management activities. Pursuant to the Marine Mammal Protection Act (MMPA), NMFS is requesting comments on its proposal to issue an incidental harassment authorization (IHA) to SCWA to incidentally take marine mammals, by Level B harassment only, during the specified activity.

DATES: Comments and information must be received no later than [insert date 30 days after date of publication in the FEDERAL REGISTER].

ADDRESSES: Comments on the application should be addressed to Jolie Harrison, Supervisor, Incidental Take Program, Permits and Conservation Division, Office of Protected Resources, National Marine Fisheries Service. Physical comments should be sent to 1315 East-West Highway, Silver Spring, MD 20910 and electronic comments should be sent to ITP.Laws@noaa.gov.

Instructions: NMFS is not responsible for comments sent by any other method, to any other address or individual, or received after the end of the comment period. Comments received

electronically, including all attachments, must not exceed a 25-megabyte file size. Attachments to electronic comments will be accepted in Microsoft Word or Excel or Adobe PDF file formats only. All comments received are a part of the public record and will generally be posted to the Internet at <http://www.nmfs.noaa.gov/pr/permits/incidental.htm> without change. All personal identifying information (e.g., name, address) voluntarily submitted by the commenter may be publicly accessible. Do not submit confidential business information or otherwise sensitive or protected information.

FOR FURTHER INFORMATION CONTACT: Ben Laws, Office of Protected Resources, NMFS, (301) 427-8401.

SUPPLEMENTARY INFORMATION:

Availability

An electronic copy of SCWA's application and supporting documents, as well as a list of the references cited in this document, may be obtained by visiting the Internet at:

<http://www.nmfs.noaa.gov/pr/permits/incidental.htm>. In case of problems accessing these documents, please call the contact listed above (see FOR FURTHER INFORMATION CONTACT).

National Environmental Policy Act (NEPA)

NMFS has prepared an Environmental Assessment (EA; 2010) and associated Finding of No Significant Impact (FONSI) in accordance with NEPA and the regulations published by the Council on Environmental Quality. These documents are posted at the aforementioned Internet address. Information in SCWA's application, NMFS' EA (2010), and this notice collectively provide the environmental information related to proposed issuance of this IHA for public review and comment. We will review all comments submitted in response to this notice as we

complete the NEPA process, including a decision of whether to reaffirm the existing FONSI, prior to a final decision on the incidental take authorization request.

Background

Sections 101(a)(5)(A) and (D) of the MMPA (16 U.S.C. 1361 et seq.) direct the Secretary of Commerce to allow, upon request by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified area, the incidental, but not intentional, taking of small numbers of marine mammals, providing that certain findings are made and the necessary prescriptions are established.

The incidental taking of small numbers of marine mammals may be allowed only if NMFS (through authority delegated by the Secretary) finds that the total taking by the specified activity during the specified time period will (i) have a negligible impact on the species or stock(s) and (ii) not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses (where relevant). Further, the permissible methods of taking and requirements pertaining to the mitigation, monitoring and reporting of such taking must be set forth, either in specific regulations or in an authorization.

The allowance of such incidental taking under section 101(a)(5)(A), by harassment, serious injury, death or a combination thereof, requires that regulations be established. Subsequently, a Letter of Authorization may be issued pursuant to the prescriptions established in such regulations, providing that the level of taking will be consistent with the findings made for the total taking allowable under the specific regulations. Under section 101(a)(5)(D), NMFS may authorize such incidental taking by harassment only, for periods of not more than 1 year, pursuant to requirements and conditions contained within an IHA. The establishment of

prescriptions through either specific regulations or an authorization requires notice and opportunity for public comment.

NMFS has defined “negligible impact” in 50 CFR 216.103 as “...an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival.” Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines “harassment” as: “...any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild; or (ii) has the potential to disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.” The former is termed Level A harassment and the latter is termed Level B harassment.

Summary of Request

On January 17, 2014, we received an adequate and complete request from SCWA for authorization of the taking of marine mammals incidental to Russian River estuary management activities in Sonoma County, California. SCWA proposes to manage the naturally-formed barrier beach at the mouth of the Russian River in order to minimize potential for flooding adjacent to the estuary and to enhance habitat for juvenile salmonids, as well as to conduct biological and physical monitoring of the barrier beach and estuary. Flood control-related breaching of barrier beach at the mouth of the river may include artificial breaches, as well as construction and maintenance of a lagoon outlet channel. The latter activity, an alternative management technique conducted to mitigate impacts of flood control on rearing habitat for Endangered Species Act (ESA)-listed salmonids, occurs only from May 15 through October 15 (hereafter, the “lagoon

management period”). Artificial breaching and monitoring activities may occur at any time during the one-year period of validity of the proposed IHA.

Breaching of naturally-formed barrier beach at the mouth of the Russian River requires the use of heavy equipment (e.g., bulldozer, excavator) and increased human presence, and monitoring in the estuary requires the use of small boats. As a result, pinnipeds hauled out on the beach or at peripheral haul-outs in the estuary may exhibit behavioral responses that indicate incidental take by Level B harassment under the MMPA. Species known from the haul-out at the mouth of the Russian River or from peripheral haul-outs, and therefore anticipated to be taken incidental to the specified activity, include the harbor seal (*Phoca vitulina richardii*), California sea lion (*Zalophus californianus californianus*), and northern elephant seal (*Mirounga angustirostris*).

This would be the fifth such IHA, if issued. SCWA was first issued an IHA, valid for a period of one year, effective on April 1, 2010 (75 FR 17382), and was subsequently issued one-year IHAs for incidental take associated with the same activities, effective on April 21, 2011 (76 FR 23306), April 21, 2012 (77 FR 24471), and April 21, 2013 (78 FR 23746).

Description of the Specified Activity

Overview

The proposed action involves management of the estuary to prevent flooding while preventing adverse modification to critical habitat for ESA-listed salmonids. Requirements related to the ESA are described in further detail below. During the lagoon management period, this involves construction and maintenance of a lagoon outlet channel that would facilitate formation of a perched lagoon. A perched lagoon, which is an estuary closed to tidal influence in which water surface elevation is above mean high tide, would reduce flooding while maintaining

beneficial conditions for juvenile salmonids. Additional breaches of barrier beach may be conducted for the sole purpose of reducing flood risk. SCWA's proposed activity was described in detail in our notice of proposed authorization prior to the 2011 IHA (76 FR 14924; March 18, 2011); please see that document for a detailed description of SCWA's estuary management activities. Aside from the additional elements of a jetty study, described below, and minor additions to SCWA's biological and physical estuary monitoring measures, the specified activity remains the same as that described in the 2011 document.

Dates and Duration

The specified activity may occur at any time during the one-year timeframe (April 21, 2014, through April 20, 2015) of the proposed IHA, although construction and maintenance of a lagoon outlet channel would occur only during the lagoon management period. In addition, there are certain restrictions placed on SCWA during the harbor seal pupping season. These, as well as periodicity and frequency of the specified activities, are described in further detail below.

Specific Geographic Region

The estuary is located about 97 km (60 mi) northwest of San Francisco in Sonoma County, near Jenner, California (see Figure 1 of SCWA's application). The Russian River watershed encompasses 3,847 km² (1,485 mi²) in Sonoma, Mendocino, and Lake Counties. The mouth of the Russian River is located at Goat Rock State Beach (see Figure 2 of SCWA's application); the estuary extends from the mouth upstream approximately 10 to 11 km (6-7 mi) between Austin Creek and the community of Duncans Mills (Heckel and McIver, 1994).

Detailed Description of Activities

Within the Russian River watershed, the U.S. Army Corps of Engineers (Corps), SCWA and the Mendocino County Russian River Flood Control and Water Conservation Improvement

District (District) operate and maintain federal facilities and conduct activities in addition to the estuary management, including flood control, water diversion and storage, instream flow releases, hydroelectric power generation, channel maintenance, and fish hatchery production. The Corps, SCWA, and the District conducted these activities for many years before salmonid species in the Russian River were protected under the ESA. Upon determination that these actions were likely to affect ESA-listed salmonids, as well as designated critical habitat for these species, formal consultation under section 7 of the ESA was initiated. In 2008, NMFS issued a Biological Opinion (BiOp) for Water Supply, Flood Control Operations, and Channel Maintenance conducted by the Corps, SCWA, and the District in the Russian River watershed (NMFS, 2008). This BiOp found that the activities – including SCWA’s estuary management activities – authorized by the Corps and undertaken by SCWA and the District, if continued in a manner similar to recent historic practices, were likely to jeopardize the continued existence of ESA-listed salmonids and were likely to adversely modify critical habitat.

If a project is found to jeopardize a species or adversely modify its critical habitat, NMFS must develop and recommend a non-jeopardizing Reasonable and Prudent Alternative (RPA) to the proposed project, in coordination with the federal action agency and any applicant. A component of the RPA described in the 2008 BiOp requires SCWA to collaborate with NMFS and modify their estuary water level management in order to reduce marine influence (i.e., high salinity and tidal inflow) and promote a higher water surface elevation in the estuary in order to enhance the quality of rearing habitat for juvenile salmonids. A program of potential incremental steps prescribed to reach that goal includes adaptive management of the outlet channel. SCWA is also required to monitor the response of water quality, invertebrate production, and salmonids in and near the estuary to water surface elevation management in the estuary-lagoon system.

The analysis contained in the BiOp found that maintenance of lagoon conditions was necessary only for the lagoon management period. See NMFS' BiOp (2008) for details of that analysis. As a result of that determination, there are three components to SCWA's estuary management activities: (1) lagoon outlet channel management, during the lagoon management period only, required to accomplish the dual purposes of flood risk abatement and maintenance of juvenile salmonid habitat; (2) traditional artificial breaching, with the sole goal of flood risk abatement; and (3) physical and biological monitoring. The latter activity, physical and biological monitoring, will remain the same as in past years but with the addition of a new monitoring activity. For 2014, acoustic telemetry of tagged steelhead will be added to the fisheries monitoring activities. As is the case for other monitoring activities in the estuary, this activity will involve at least two crew members in a small motorized boat travelling throughout the estuary. Therefore, as for other such activities in the estuary, the potential exists for disturbance of pinnipeds hauled-out at peripheral haul-outs. Please see the previously referenced Federal Register notice (76 FR 14924; March 18, 2011) for detailed discussion of lagoon outlet channel management, artificial breaching, and other physical and biological monitoring activities.

NMFS' BiOp determined that salmonid estuarine habitat may be improved by managing the Russian River estuary as a perched, freshwater lagoon and, therefore, stipulates as a RPA to existing conditions that the estuary be managed to achieve such conditions between May 15th and October 15th. In recognition of the complexity and uncertainty inherent in attempting to manage conditions in a dynamic beach environment, the BiOp stipulates that the estuarine water surface elevation RPA be managed adaptively, meaning that it should be planned, implemented, and then iteratively refined based on experience gained from implementation. The first phase of

adaptive management, which has been implemented since 2010, is limited to outlet channel management (ESA PWA, 2012). The second phase requires study of and consideration of alternatives to a historical, dilapidated jetty present at Goat Rock State Beach (e.g., complete removal, partial removal).

Jetty Study – In addition to the previously described activities, SCWA proposes to conduct new monitoring work at the mouth of the Russian River during the period of this proposed IHA. This additional activity comprises a plan to study the effects of the jetty on the formation and maintenance of the Russian River estuary, as required under RPA 2 of the 2008 BiOp. Through several phases from 1929-1948, the jetty and associated seawall, roadway, and

railroad were constructed, reinforced and then abandoned by various entities. The plan for study of the jetty is described in greater detail in SCWA's "Feasibility of Alternatives to the Goat Rock State Beach Jetty for Managing Lagoon Water Surface Elevations – A Study Plan" (ESA PWA, 2011). The jetty study was planned for 2012 and 2013 (and considered under the previous IHA) but did not occur, and is now planned for 2014.

The jetty, which is embedded in the barrier beach, may significantly affect some of the physical processes which determine lagoon water surface elevations. The proposed study would analyze the effects of the jetty on beach permeability and sand storage and transport. These physical processes are affected by the jetty, and, in turn, may affect seasonal water surface elevations and flood risk. Evaluating and quantifying these linkages will inform the development

and evaluation of management alternatives for the jetty. The study would involve delineation of two study transects perpendicular to the beach barrier (see Figure 5 of SCWA's application) and installation of six monitoring wells to study water seepage rates. Additionally, in order to better understand the characteristics of the barrier beach substrate and the location and composition of buried portions of the jetty and associated structures, geophysical surveys would be conducted along the barrier beach. For a detailed description of the jetty study, please see our notice of proposed authorization prior to the 2013 IHA (78 FR 14985; March 8, 2013).

Description of Marine Mammals in the Area of the Specified Activity

Harbor seals are the most common species inhabiting the haul-out at the mouth of the Russian River (Jenner haul-out) and fine-scale local abundance data for harbor seals have been recorded extensively since 1972. California sea lions and northern elephant seals have also been observed infrequently in the project area. In addition to the primary Jenner haul-out, there are eight peripheral haul-outs nearby (see Figure 4 of SCWA's application). These include North Jenner and Odin Cove to the north; Pocked Rock, Kabemali, and Rock Point to the south; and Penny Logs, Patty's Rock, and Chalanchawi upstream within the estuary.

This section briefly summarizes the range, population status, threats and human-caused mortality, and range-wide as well as local abundance of these species. We have reviewed SCWA's detailed species descriptions, including life history information, for accuracy and completeness and refer the reader to Sections 3 and 4 of SCWA's application instead of reprinting the information here. The following information is summarized largely from NMFS Stock Assessment Reports, which may be accessed at <http://www.nmfs.noaa.gov/pr/sars/species.htm>.

Harbor Seals

Harbor seals inhabit coastal and estuarine waters and shoreline areas of the northern hemisphere from temperate to polar regions. The eastern North Pacific subspecies is found from Baja California north to the Aleutian Islands and into the Bering Sea. Multiple lines of evidence support the existence of geographic structure among harbor seal populations from California to Alaska (Carretta et al., 2012). However, because stock boundaries are difficult to meaningfully draw from a biological perspective, three separate harbor seal stocks are recognized for management purposes along the west coast of the continental U.S.: (1) inland waters of Washington, (2) outer coast of Oregon and Washington, and (3) California (Carretta et al., 2012). Multiple stocks are recognized in Alaska. Placement of a stock boundary at the California-Oregon border is not based on biology but is considered a political and jurisdictional convenience (Carretta et al., 2012). In addition, harbor seals may occur in Mexican waters, but these animals are not considered part of the California stock. Only the California stock is expected to be found in the project area.

California harbor seals are not protected under the ESA or listed as depleted under the MMPA, and are not considered a strategic stock under the MMPA because annual human-caused mortality (31) is significantly less than the calculated potential biological removal (PBR; 1,600). The population appears to be stabilizing at what may be its carrying capacity and the fishery mortality is declining.

The best abundance estimate of the California stock of harbor seals is 30,196 (CV = 0.157) and the minimum population size of this stock is 26,667 individuals (Carretta et al., 2012). The entire population cannot be counted because some individuals are always away from haul-out sites. In addition, complete pup counts are not possible as for other species of pinniped because pups are precocious and enter the water almost immediately after birth. Therefore, the

best abundance estimate is estimated by counting the number of seals ashore during the peak haul-out period (May to July) and by multiplying this count by a correction factor equal to the inverse of the estimated fraction of seals on land (Carretta et al., 2012). The current abundance estimate, as well as the minimum population size, is based off of haul-out counts from 2009.

Counts of harbor seals in California increased from 1981 to 2004, with a calculated annual net productivity rate of 9.2 percent for the period 1983-1994 (Carretta et al., 2012). However, maximum net productivity rates cannot be estimated because measurements were not made when the stock size was very small, and the default maximum net productivity rate for pinnipeds (12 percent per year) is considered appropriate for harbor seals (Carretta et al., 2012).

Prior to state and federal protection and especially during the nineteenth century, harbor seals along the west coast of North America were greatly reduced by commercial hunting, with only a few hundred individuals surviving in a few isolated areas along the California coast (Carretta et al., 2012). However, in the last half of this century, the population has increased dramatically. Data from 2004-09 indicate that 18 (CV = 0.73) California harbor seals are killed annually in commercial fisheries. In addition, California stranding database records for 2005-09 show an annual average of 12 such events, which is likely an underestimate because most carcasses are not recovered. Two Unusual Mortality Events (UME) of harbor seals in California occurred in 1997 and 2000 with the causes considered to be infectious disease (see <http://www.nmfs.noaa.gov/pr/health/mmume/>; accessed January 30, 2014). All west coast harbor seals that have been tested for morbilliviruses were found to be seronegative, indicating that this disease is not endemic in the population and that this population is extremely susceptible to an epidemic of this disease (Ham-Lammé et al., 1999).

Harbor seal pupping normally occurs at the Russian River from March until late June, and sometimes into early July. The Jenner haul-out is the largest in Sonoma County. A substantial amount of monitoring effort has been conducted at the Jenner haul-out and surrounding areas. Concerned local residents formed the Stewards' Seal Watch Public Education Program in 1985 to educate beach visitors and monitor seal populations. State Parks Volunteer Docents continue this effort towards safeguarding local harbor seal habitat. On weekends during the pupping and molting season (approximately March-August), volunteers conduct public outreach and record the numbers of visitors and seals on the beach, other marine mammals observed, and the number of boats and kayaks present.

Ongoing monthly seal counts at the Jenner haul-out were begun by J. Mortenson in January 1987, with additional nearby haul-outs added to the counts thereafter. In addition, local resident E. Twohy began daily observations of seals and people at the Jenner haul-out in November 1989. These datasets note whether the mouth at the Jenner haul-out was opened or closed at each observation, as well as various other daily and annual patterns of haul-out usage (Mortenson and Twohy, 1994). Recently, SCWA began regular baseline monitoring of the haul-out as a component of its estuary management activity. Table 1 shows average daily numbers of seals observed at the mouth of the Russian River from 1993-2005 and from 2009-13.

Table 1. Average daily number of seals observed at Russian River mouth for each month, 1993-2005; 2009-13

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1993	140	219	269	210	203	238	197	34	8	38	78	163
1994	138	221	243	213	208	212	246	98	26	31	101	162
1995	133	270	254	261	222	182	216	74	37	24	38	148
1996	144	175	261	247	157	104	142	65	17	29	76	139
1997	154	177	209	188	154	119	186	58	20	29	30	112
1998	119	151	192	93	170	213	232	53	33	21	93	147
1999	161	170	215	210	202	128	216	98	57	20	74	123
2000	151	185	240	180	158	245	256	63	46	50	86	127
2001	155	189	161	168	135	212	275	75	64	20	127	185
2002	117	12	20	154	134	213	215	89	43	26	73	126
2003	-	1	26	161	164	222	282	100	43	51	109	116
2004	2	5	39	180	202	318	307	35	40	47	68	61

2005	0	7	42	222	220	233	320	145	-	-	-	-
Mean, 1993-2005	118	137	167	191	179	203	238	76	36	32	79	134
2009	-	-	-	-	-	-	219	117	17	22	96	80
2010	66	84	129	136	109	136	267	111	59	25	89	26
2011	116	92	162	124	128	145	219	98	31	53	92	48
2012	108	74	115	169	164	166	156	128	100	71	137	51
2013	51	108	158	112	162	139	411	175	77	58	34	94
Mean, 2011-13	95	88	145	135	151	151	243	137	67	61	94	64

Data from 1993-2005 adapted from Mortenson and Twohy (1994) and E. Twohy (unpublished data). Data from 2009-13 collected by SCWA.

Months represented by dash indicate periods where data were missing or incomplete.

The number of seals present at the Jenner haul-out generally declines during bar-closed conditions (Mortenson, 1996). SCWA’s pinniped monitoring efforts from 1996 to 2000 focused on artificial breaching activities and their effects on the Jenner haul-out. Seal counts and disturbances were recorded from one to two days prior to breaching, the day of breaching, and the day after breaching (MSC, 1997, 1998, 1999, 2000; SCWA and MSC, 2001). In each year, the trend observed was that harbor seal numbers generally declined during a beach closure and increased the day following an artificial breaching event. Heckel and McIver (1994) speculated that the loss of easy access to the haul-out and ready escape to the sea during bar-closed conditions may account for the lower numbers. Table 2 shows average daily seal counts recorded during SCWA monitoring of breaching events from 1996-2000 and 2009-13, representing bar-closed conditions, when seal numbers decline.

Table 2. Average number of harbor seals observed at the mouth of the Russian River during breaching events (i.e., bar-closed conditions) by month.

Year	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
1996-2000	-	-	-	173	103	100	75	17	5	22	11	-
2009-13	32	134	224	80	53	102	104	-	17	25	53	34

Dashes represent months when no estuary management events occurred.

Mortenson (1996) observed that pups were first seen at the Jenner haul-out in late March, with maximum counts in May. In this study, pups were not counted separately from other age classes at the haul-out after August due to the difficulty in discriminating pups from small yearlings. From 1989 to 1991, Hanson (1993) observed that pupping began at the Jenner haul-out in mid-April, with a maximum number of pups observed during the first two weeks of May. This corresponds with the peaks observed at Point Reyes, where the first viable pups are born in March and the peak is the last week of April to early May (SCWA, 2014). Based on this information, pupping season at the Jenner haul-out is conservatively defined here as March 15 to June 30.

California Sea Lions

California sea lions range from the Gulf of California north to the Gulf of Alaska, with breeding areas located in the Gulf of California, western Baja California, and southern California. Five genetically distinct geographic populations have been identified: (1) Pacific Temperate, (2) Pacific Subtropical, (3) Southern Gulf of California, (4) Central Gulf of California and (5) Northern Gulf of California (Schramm *et al.*, 2009). Rookeries for the Pacific Temperate population are found within U.S. waters and just south of the U.S.-Mexico border, and animals belonging to this population may be found from the Gulf of Alaska to Mexican waters off Baja California. Animals belonging to other populations (e.g., Pacific Subtropical) may range into U.S. waters during non-breeding periods. For management purposes, a stock of California sea lions comprising those animals at rookeries within the U.S. is defined (i.e., the U.S. stock of California sea lions) (Carretta *et al.*, 2012). Pup production at the Coronado Islands rookery in Mexican waters is considered an insignificant contribution to the overall size of the Pacific Temperate population (Lowry and Maravilla-Chavez, 2005).

California sea lions are not protected under the ESA or listed as depleted under the MMPA. Total annual human-caused mortality (at least 431) is substantially less than the PBR (estimated at 9,200 per year); therefore, California sea lions are not considered a strategic stock under the MMPA. There are indications that the California sea lion may have reached or is approaching carrying capacity, although more data are needed to confirm that leveling in growth persists (Carretta et al., 2012).

The best abundance estimate of the U.S. stock of California sea lions is 296,750 and the minimum population size of this stock is 153,337 individuals (Carretta et al., 2012). The entire population cannot be counted because all age and sex classes are never ashore at the same time; therefore, the best abundance estimate is determined from the number of births and the proportion of pups in the population, with censuses conducted in July after all pups have been born. Specifically, the pup count for rookeries in southern California from 2008 was adjusted for pre-census mortality and then multiplied by the inverse of the fraction of newborn pups in the population (Carretta et al., 2012). The minimum population size was determined from counts of all age and sex classes that were ashore at all the major rookeries and haul-out sites in southern and central California during the 2007 breeding season, including all California sea lions counted during the July 2007 census at the Channel Islands in southern California and at haul-out sites located between Point Conception and Point Reyes, California (Carretta et al., 2012). An additional unknown number of California sea lions are at sea or hauled out at locations that were not censused and are not accounted for in the minimum population size.

Trends in pup counts from 1975 through 2008 have been assessed for four rookeries in southern California and for haul-outs in central and northern California. During this time period counts of pups increased at an annual rate of 5.4 percent, excluding six El Nino years when pup

production declined dramatically before quickly rebounding (Carretta et al., 2012). The maximum population growth rate was 9.2 percent when pup counts from the El Niño years were removed. However, the apparent growth rate from the population trajectory underestimates the intrinsic growth rate because it does not consider human-caused mortality occurring during the time series; the default maximum net productivity rate for pinnipeds (12 percent per year) is considered appropriate for California sea lions (Carretta et al., 2012).

Historic exploitation of California sea lions include harvest for food by Native Americans in pre-historic times and for oil and hides in the mid-1800s, as well as exploitation for a variety of reasons more recently (Carretta et al., 2012). There are few historical records to document the effects of such exploitation on sea lion abundance (Lowry et al., 1992). Data from 2003-09 indicate that a minimum of 337 (CV = 0.56) California sea lions are killed annually in commercial fisheries. In addition, a summary of stranding database records for 2005-09 shows an annual average of 65 such events, which is likely a gross underestimate because most carcasses are not recovered. California sea lions may also be removed because of predation on endangered salmonids (17 per year, 2008-10) or incidentally captured during scientific research (3 per year, 2005-09) (Carretta et al., 2012). Sea lion mortality has also been linked to the algal-produced neurotoxin domoic acid (Scholin et al., 2000). There is currently a UME declaration in effect for California sea lions. Future mortality may be expected to occur, due to the sporadic occurrence of such harmful algal blooms. Beginning in January 2013, elevated strandings of California sea lion pups have been observed in Southern California, with live sea lion strandings nearly three times higher than the historical average. The causes of this UME are under investigation (<http://www.nmfs.noaa.gov/pr/health/mmume/californiasealions2013.htm>; accessed January 29, 2014).

Solitary California sea lions have occasionally been observed at or in the vicinity of the Russian River estuary (MSC, 1999, 2000), in all months of the year except June. Male California sea lions are occasionally observed hauled out at or near the Russian River mouth in most years: once in August 2009, January and December 2011, January 2012, and December 2013. Other individuals were observed in the surf at the mouth of the river or swimming inside the estuary. Juvenile sea lions were observed during the summer of 2009 at the Patty's Rock haul-out, and some sea lions were observed during monitoring of peripheral haul-outs in October 2009. The occurrence of individual California sea lions in the action area may occur year-round, but is infrequent and sporadic.

Northern Elephant Seals

Northern elephant seals gather at breeding areas, located primarily on offshore islands of Baja California and California, from approximately December to March before dispersing for feeding. Males feed near the eastern Aleutian Islands and in the Gulf of Alaska, while females feed at sea south of 45°N (Stewart and Huber, 1993; Le Boeuf et al., 1993). Adults then return to land between March and August to molt, with males returning later than females, before dispersing again to their respective feeding areas between molting and the winter breeding season. Populations of northern elephant seals in the U.S. and Mexico are derived from a few tens or hundreds of individuals surviving in Mexico after being nearly hunted to extinction (Stewart et al., 1994). Given the recent derivation of most rookeries, no genetic differentiation would be expected. Although movement and genetic exchange continues between rookeries, most elephant seals return to their natal rookeries when they start breeding (Huber et al., 1991). The California breeding population is now demographically isolated from the Baja California population and is considered to be a separate stock.

Northern elephant seals are not protected under the ESA or listed as depleted under the MMPA. Total annual human-caused mortality (at least 10.4) is substantially less than the PBR (estimated at 4,382 per year); therefore, northern elephant seals are not considered a strategic stock under the MMPA. Modeling of pup counts indicates that the population has reached its Maximum Net Productivity Level, but has not yet reached carrying capacity (Carretta et al., 2007).

The best abundance estimate of the California breeding population of northern elephant seals is 124,000 and the minimum population size of this stock is 74,913 individuals (Carretta et al., 2007). The entire population cannot be counted because all age and sex classes are never ashore at the same time; therefore, the best abundance estimate is determined by counting the number of pups produced and multiplying by the inverse of the expected ratio of pups to total animals (McCann, 1985). Specifically, the estimated number of pups born in California in 2005 (35,549) was used to extrapolate via a multiplier of 3.5 suggested by Boveng (1988) and Barlow et al. (1993) for a rapidly growing population. The minimum population size was estimated by doubling the observed pup count (to account for the pups and their mothers) and adding 3,815 males and juveniles counted at the Channel Islands and central California sites in 2005 (Carretta et al., 2007). An additional unknown number of northern elephant seals are at sea or hauled out at locations that were not censused and are not accounted for in the minimum population size.

Trends in pup counts from 1958 through 2005 show that northern elephant seal colonies are continuing to grow in California, but appear to be stable or slowly decreasing in Mexico (Stewart et al., 1994; Carretta et al., 2007). Although growth rates as high as 16 percent per year have been documented for elephant seal rookeries in the U.S. from 1959 to 1981 (Cooper and Stewart, 1983), much of this growth was supported by immigration from Mexico. The highest

growth rate measured for the whole U.S./Mexico population was 8.3 percent between 1965 and 1977. A generalized logistic growth model indicates that the maximum population growth rate is 11.7 percent (Carretta et al., 2007).

Data from 2000-05 indicate that a minimum of 8.8 (CV = 0.4) northern elephant seals are killed annually in commercial fisheries, including hook-and-line, gillnet, and trawl fisheries. In addition, drift gillnet fisheries exist along the entire Pacific coast of Baja California and may take animals from this population, although few quantitative data and no species-specific information are available (Carretta et al., 2007). A summary of stranding database records for 2000-04 shows an annual average of 1.6 non-fishery related mortalities, which is likely a gross underestimate because most carcasses are not recovered.

Censuses of pinnipeds at the mouth of the Russian River have been taken at least semi-monthly since 1987. Elephant seals were noted from 1987-95, with one or two elephant seals typically counted during May censuses, and occasional records during the fall and winter (Mortenson and Follis, 1997). A single, tagged northern elephant seal sub-adult was present at the Jenner haul-out from 2002-07. This individual seal, which was observed harassing harbor seals also present at the haul-out, was generally present during molt and again from late December through March. A single juvenile elephant seal was observed at the Jenner haul-out in June 2009 and, most recently, a sub-adult seal was observed in August 2013. The occurrence of individual northern elephant seals in the action area has generally been infrequent and sporadic in the past 10 years.

Potential Effects of the Specified Activity on Marine Mammals

A significant body of monitoring data exists for pinnipeds at the mouth of the Russian River. In addition, pinnipeds have co-existed with regular estuary management activity for

decades, as well as with regular human use activity at the beach, and are likely habituated to human presence and activity. Nevertheless, SCWA's estuary management activities have the potential to disturb pinnipeds present on the beach or at peripheral haul-outs in the estuary. During breaching operations, past monitoring has revealed that some or all of the seals present typically move or flush from the beach in response to the presence of crew and equipment, though some may remain hauled-out. No stampeding of seals – a potentially dangerous occurrence in which large numbers of animals succumb to mass panic and rush away from a stimulus – has been documented since SCWA developed protocols to prevent such events in 1999. While it is likely impossible to conduct required estuary management activities without provoking some response in hauled-out animals, precautionary mitigation measures, described later in this document, ensure that animals are gradually apprised of human approach. Under these conditions, seals typically exhibit a continuum of responses, beginning with alert movements (e.g., raising the head), which may then escalate to movement away from the stimulus and possible flushing into the water. Flushed seals typically re-occupy the haul-out within minutes to hours of the stimulus. In addition, eight other haul-outs exist nearby that may accommodate flushed seals.

In the absence of appropriate mitigation measures, it is possible that pinnipeds could be subject to injury, serious injury, or mortality, likely through stampeding or abandonment of pups. However, based on a significant body of site-specific data, harbor seals are unlikely to sustain any harassment that may be considered biologically significant. Individual animals would, at most, flush into the water in response to maintenance activities but may also simply become alert or move across the beach away from equipment and crews. During 2013, SCWA observed that harbor seals are less likely to flush from the beach when the primary aggregation of seals is north

of the breaching activity (please refer to Figure 2 of SCWA's application), meaning that personnel and equipment are not required to pass the seals. Four artificial breaching events were implemented in 2013, with two of these events occurring north of the primary aggregation and two to the south (at approximately 800 and 150 ft distance) (SCWA, 2014). In both of the former cases, all seals present eventually flushed to the water, but when breaching activity remained to the south of the haul-out, only 11 and 53 percent of seals, respectively, were flushed.

California sea lions and northern elephant seals have been observed as less sensitive to stimulus than harbor seals during monitoring at numerous other sites. For example, monitoring of pinniped disturbance as a result of abalone research in the Channel Islands showed that while harbor seals flushed at a rate of 69 percent, California sea lions flushed at a rate of only 21 percent. The rate for elephant seals declined to 0.1 percent (VanBlaricom, 2010). In the event that either of these species is present during management activities, they would be expected to display a minimal reaction to maintenance activities – less than that expected of harbor seals.

Although the Jenner haul-out is not known as a primary pupping beach, pups have been observed during the pupping season; therefore, we have evaluated the potential for injury, serious injury, or mortality to pups. There is a lack of published data regarding pupping at the mouth of the Russian River, but SCWA monitors have observed pups on the beach. No births were observed during recent monitoring, but may be inferred based on signs indicating pupping (e.g., blood spots on the sand, birds consuming possible placental remains). Pup injury or mortality would be most likely to occur in the event of extended separation of a mother and pup, or trampling in a stampede. As discussed previously, no stampedes have been recorded since development of appropriate protocols in 1999. Any California sea lions or northern elephant

seals present would be independent juveniles or adults; therefore, analysis of impacts on pups is not relevant for those species.

Similarly, the period of mother-pup bonding, critical time needed to ensure pup survival and maximize pup health, is not expected to be impacted by estuary management activities. Harbor seal pups are extremely precocious, swimming and diving immediately after birth and throughout the lactation period, unlike most other phocids which normally enter the sea only after weaning (Lawson and Renouf, 1985; Cottrell *et al.*, 2002; Burns *et al.*, 2005). Lawson and Renouf (1987) investigated harbor seal mother-pup bonding in response to natural and anthropogenic disturbance. In summary, they found that the most critical bonding time is within minutes after birth. As described previously, the peak of pupping season is typically concluded by mid-May, when the lagoon management period begins. As such, it is expected that mother-pup bonding would likely be concluded as well. The number of management events during the months of March and April has been relatively low in the past, and the breaching activities occur in a single day over several hours. In addition, mitigation measures described later in this document further reduce the likelihood of any impacts to pups, whether through injury or mortality or interruption of mother-pup bonding.

In summary, and based on extensive monitoring data, we believe that impacts to hauled-out pinnipeds during estuary management activities would be behavioral harassment of limited duration (i.e., less than one day) and limited intensity (i.e., temporary flushing at most). Stampeding, and therefore injury or mortality, is not expected – nor been documented – in the years since appropriate protocols were established (see “Mitigation” for more details). Further, the continued, and increasingly heavy (Figure 4; SCWA, 2014), use of the haul-out despite decades of breaching events indicates that abandonment of the haul-out is unlikely.

Anticipated Effects on Habitat

The purposes of the estuary management activities are to improve summer rearing habitat for juvenile salmonids in the Russian River estuary and/or to minimize potential flood risk to properties adjacent to the estuary. These activities would result in temporary physical alteration of the Jenner haul-out, but are essential to conserving and recovering endangered salmonid species, as prescribed by the BiOp. These salmonids are themselves prey for pinnipeds. In addition, with barrier beach closure, seal usage of the beach haul-out declines, and the three nearby river haul-outs may not be available for usage due to rising water surface elevations. Breaching of the barrier beach, subsequent to the temporary habitat disturbance, likely increases suitability and availability of habitat for pinnipeds. Biological and water quality monitoring would not physically alter pinniped habitat. Please see the previously referenced Federal Register notice (76 FR 14924; March 18, 2011) for a more detailed discussion of anticipated effects on habitat.

During SCWA's pinniped monitoring associated with artificial breaching activities from 1996 to 2000, the number of harbor seals hauled out declined when the barrier beach closed and then increased the day following an artificial breaching event (MSC, 1997, 1998, 1999, and 2000; SCWA and MSC, 2001). This response to barrier beach closure followed by artificial breaching has remained consistent in recent years and is anticipated to continue. However, it is possible that the number of pinnipeds using the haul-out could decline during the extended lagoon management period, when SCWA would seek to maintain a shallow outlet channel rather than the deeper channel associated with artificial breaching. Collection of baseline information during the lagoon management period is included in the monitoring requirements described later in this document. SCWA's previous monitoring, as well as Twohy's daily counts of seals at the

sandbar (Table 1) indicate that the number of seals at the haul-out declines from August to October, so management of the lagoon outlet channel (and managing the sandbar as a summer lagoon) would have little effect on haul-out use during the latter portion of the lagoon management period. The early portion of the lagoon management period coincides with the pupping season. Past monitoring during this period, which represents some of the longest beach closures in the late spring and early summer months, shows that the number of pinnipeds at the haul-out tends to fluctuate, rather than showing the more straightforward declines and increases associated with closures and openings seen at other times of year (MSC, 1998). This may indicate that seal haul-out usage during the pupping season is less dependent on bar status. As such, the number of seals hauled out from May through July would be expected to fluctuate, but is unlikely to respond dramatically to the absence of artificial breaching events. Regardless, any impacts to habitat resulting from SCWA's management of the estuary during the lagoon management period are not in relation to natural conditions, but rather in relation to conditions resulting from SCWA's discontinued approach of artificial breaching during this period.

In summary, there will be temporary physical alteration of the beach. However, natural opening and closure of the beach results in the same impacts to habitat; therefore, seals are likely adapted to this cycle. In addition, the increase in rearing habitat quality has the goal of increasing salmonid abundance, ultimately providing more food for seals present within the action area. Thus, any impacts to marine mammal habitat are not expected to cause significant or long-term consequences for individual marine mammals or their populations.

Proposed Mitigation

In order to issue an IHA under Section 101(a)(5)(D) of the MMPA, NMFS must set forth the permissible methods of taking pursuant to such activity, and other means of effecting the

least practicable impact on such species or stock and its habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance, and on the availability of such species or stock for taking for certain subsistence uses.

SCWA has proposed to continue the following mitigation measures, as implemented during the previous IHA, designed to minimize impact to affected species and stocks:

- SCWA crews would cautiously approach the haul-out ahead of heavy equipment to minimize the potential for sudden flushes, which may result in a stampede – a particular concern during pupping season.
- SCWA staff would avoid walking or driving equipment through the seal haul-out.
- Crews on foot would make an effort to be seen by seals from a distance, if possible, rather than appearing suddenly, again preventing sudden flushes.
- During breaching events, all monitoring would be conducted from the overlook on the bluff along Highway 1 adjacent to the haul-out in order to minimize potential for harassment.
- A water level management event may not occur for more than 2 consecutive days unless flooding threats cannot be controlled.

In addition, SCWA proposes to continue mitigation measures specific to pupping season (March 15-June 30), as implemented in the previous IHAs:

- SCWA will maintain a 1 week no-work period between water level management events (unless flooding is an immediate threat) to allow for an adequate disturbance recovery period. During the no-work period, equipment must be removed from the beach.
- If a pup less than 1 week old is on the beach where heavy machinery would be used or on the path used to access the work location, the management action will be delayed until

the pup has left the site or the latest day possible to prevent flooding while still maintaining suitable fish rearing habitat. In the event that a pup remains present on the beach in the presence of flood risk, SCWA would consult with NMFS to determine the appropriate course of action. SCWA will coordinate with the locally established seal monitoring program (Stewards' Seal Watch) to determine if pups less than 1 week old are on the beach prior to a breaching event.

- Physical and biological monitoring will not be conducted if a pup less than 1 week old is present at the monitoring site or on a path to the site.

For all activities, personnel on the beach would include up to two equipment operators, three safety team members on the beach (one on each side of the channel observing the equipment operators, and one at the barrier to warn beach visitors away from the activities), and one safety team member at the overlook on Highway 1 above the beach. Occasionally, there would be two or more additional people (SCWA staff or regulatory agency staff) on the beach to observe the activities. SCWA staff would be followed by the equipment, which would then be followed by an SCWA vehicle (typically a small pickup truck, the vehicle would be parked at the previously posted signs and barriers on the south side of the excavation location). Equipment would be driven slowly on the beach and care would be taken to minimize the number of shut-downs and start-ups when the equipment is on the beach. All work would be completed as efficiently as possible, with the smallest amount of heavy equipment possible, to minimize disturbance of seals at the haul-out. Boats operating near river haul-outs during monitoring would be kept within posted speed limits and driven as far from the haul-outs as safely possible to minimize flushing seals.

We have carefully evaluated SCWA's proposed mitigation measures and considered their effectiveness in past implementation to preliminarily determine whether they are likely to effect

the least practicable impact on the affected marine mammal species and stocks and their habitat. Our evaluation of potential measures included consideration of the following factors in relation to one another: (1) the manner in which, and the degree to which, the successful implementation of the measure is expected to minimize adverse impacts to marine mammals, (2) the proven or likely efficacy of the specific measure to minimize adverse impacts as planned; and (3) the practicability of the measure for applicant implementation.

Any mitigation measure(s) we prescribe should be able to accomplish, have a reasonable likelihood of accomplishing (based on current science), or contribute to the accomplishment of one or more of the general goals listed below:

- Avoidance or minimization of injury or death of marine mammals wherever possible (goals 2, 3, and 4 may contribute to this goal).
- A reduction in the number (total number or number at biologically important time or location) of individual marine mammals exposed to stimuli expected to result in incidental take (this goal may contribute to 1, above, or to reducing takes by behavioral harassment only).
- A reduction in the number (total number or number at biologically important time or location) of times any individual marine mammal would be exposed to stimuli expected to result in incidental take (this goal may contribute to 1, above, or to reducing takes by behavioral harassment only).
- A reduction in the intensity of exposure to stimuli expected to result in incidental take (this goal may contribute to 1, above, or to reducing the severity of behavioral harassment only).
- Avoidance or minimization of adverse effects to marine mammal habitat, paying particular attention to the prey base, blockage or limitation of passage to or from biologically

important areas, permanent destruction of habitat, or temporary disturbance of habitat during a biologically important time.

- For monitoring directly related to mitigation, an increase in the probability of detecting marine mammals, thus allowing for more effective implementation of the mitigation.

Based on our evaluation of SCWA's proposed measures and on SCWA's record of management at the mouth of the Russian River including information from monitoring of SCWA's implementation of the mitigation measures as prescribed under the previous IHAs, we have preliminarily determined that the proposed mitigation measures provide the means of effecting the least practicable impact on marine mammal species or stocks and their habitat, paying particular attention to rookeries, mating grounds, and areas of similar significance.

Proposed Monitoring and Reporting

In order to issue an IHA for an activity, Section 101(a)(5)(D) of the MMPA states that NMFS must set forth "requirements pertaining to the monitoring and reporting of such taking". The MMPA implementing regulations at 50 CFR 216.104 (a)(13) indicate that requests for incidental take authorizations must include the suggested means of accomplishing the necessary monitoring and reporting that will result in increased knowledge of the species and of the level of taking or impacts on populations of marine mammals that are expected to be present in the proposed action area.

Any monitoring requirement we prescribe should accomplish one or more of the following general goals:

1. An increase in the probability of detecting marine mammals, both within defined zones of effect (thus allowing for more effective implementation of the mitigation) and in general to generate more data to contribute to the analyses mentioned below;

2. An increase in our understanding of how many marine mammals are likely to be exposed to stimuli that we associate with specific adverse effects, such as behavioral harassment or hearing threshold shifts;

3. An increase in our understanding of how marine mammals respond to stimuli expected to result in incidental take and how anticipated adverse effects on individuals may impact the population, stock, or species (specifically through effects on annual rates of recruitment or survival) through any of the following methods:

- Behavioral observations in the presence of stimuli compared to observations in the absence of stimuli (need to be able to accurately predict pertinent information, e.g., received level, distance from source);

- Physiological measurements in the presence of stimuli compared to observations in the absence of stimuli (need to be able to accurately predict pertinent information, e.g., received level, distance from source);

- Distribution and/or abundance comparisons in times or areas with concentrated stimuli versus times or areas without stimuli;

4. An increased knowledge of the affected species; or

5. An increase in our understanding of the effectiveness of certain mitigation and monitoring measures.

SCWA submitted a marine mammal monitoring plan as part of the IHA application. It can be found on the Internet at <http://www.nmfs.noaa.gov/pr/permits/incidental.htm>. The plan, which has been successfully implemented by SCWA under previous IHAs, may be modified or supplemented based on comments or new information received from the public during the public comment period. The purpose of this monitoring plan, which is carried out collaboratively with

the Stewards of the Coasts and Redwoods (Stewards) organization, is to detect the response of pinnipeds to estuary management activities at the Russian River estuary. SCWA has designed the plan both to satisfy the requirements of the IHA, and to address the following questions of interest:

1. Under what conditions do pinnipeds haul out at the Russian River estuary mouth at Jenner?
2. How do seals at the Jenner haul-out respond to activities associated with the construction and maintenance of the lagoon outlet channel and artificial breaching activities?
3. Does the number of seals at the Jenner haul-out significantly differ from historic averages with formation of a summer (May 15 to October 15) lagoon in the Russian River estuary?
4. Are seals at the Jenner haul-out displaced to nearby river and coastal haul-outs when the mouth remains closed in the summer?

Proposed Monitoring Measures

In summary, past monitoring includes the following, which is proposed to continue should an IHA be issued:

Baseline Monitoring – Seals at the Jenner haul-out are counted twice monthly for the term of the IHA. This baseline information will provide SCWA with details that may help to plan estuary management activities in the future to minimize pinniped interaction. This census begins at local dawn and continues for 8 hours. All seals hauled out on the beach are counted every 30 minutes from the overlook on the bluff along Highway 1 adjacent to the haul-out using spotting scopes. Monitoring may conclude for the day if weather conditions affect visibility (e.g., heavy fog in the afternoon). Counts are scheduled for 2 days out of each month, with the

intention of capturing a low and high tide each in the morning and afternoon. Depending on how the sandbar is formed, seals may haul out in multiple groups at the mouth. At each 30-minute count, the observer indicates where groups of seals are hauled out on the sandbar and provides a total count for each group. If possible, adults and pups are counted separately.

In addition to the census data, disturbances of the haul-out are recorded. The method for recording disturbances follows those in Mortenson (1996). Disturbances would be recorded on a three-point scale that represents an increasing seal response to the disturbance (Table 3). The time, source, and duration of the disturbance, as well as an estimated distance between the source and haul-out, are recorded. It should be noted that only responses falling into Mortenson’s Levels 2 and 3 will be considered as harassment under the MMPA, under the terms of this proposed IHA.

Table 3. Seal response to disturbance

Level	Type of response	Definition
1	Alert	Seal head orientation in response to disturbance. This may include turning head towards the disturbance, craning head and neck while holding the body rigid in a u-shaped position, or <u>changing from a lying to a sitting position.</u>
2	Movement	Movements away from the source of disturbance, ranging from short withdrawals over short distances to hurried retreats many meters in length.
3	Flight	All retreats (flushes) to the water, another group of seals, or over the beach.

Weather conditions are recorded at the beginning of each census. These include temperature, percent cloud cover, and wind speed (Beaufort scale). Tide levels and estuary water surface elevations are correlated to the monitoring start and end times.

In an effort towards understanding possible relationships between use of the Jenner haul-out and nearby coastal and river haul-outs, several other haul-outs on the coast and in the Russian River estuary are monitored as well (see Figure 4 of SCWA’s application). The peripheral haul-outs are visited for 10-minute counts twice during each baseline monitoring day.

All pinnipeds hauled out were counted from the same vantage point(s) at each haul-out using a high-powered spotting scope or binoculars.

Estuary Management Event Monitoring, Lagoon Outlet Channel – Should the mouth close during the lagoon management period, SCWA would construct a lagoon outlet channel as required by the BiOp. Activities associated with the initial construction of the outlet channel, as well as the maintenance of the channel that may be required, would be monitored for disturbances to the seals at the Jenner haul-out.

A 1-day pre-event channel survey would be made within 1 to 3 days prior to constructing the outlet channel. The haul-out would be monitored on the day the outlet channel is constructed and daily for up to the maximum 2 days allowed for channel excavation activities. Monitoring would also occur on each day that the outlet channel is maintained using heavy equipment for the duration of the lagoon management period. Monitoring of outlet channel construction and maintenance would correspond with that described under the “Baseline” section previously, with the exception that management activity monitoring duration is defined by event duration, rather than being set at 8 hours. On the day of the management event, pinniped monitoring begins at least 1 hour prior to the crew and equipment accessing the beach work area and continues through the duration of the event, until at least 1 hour after the crew and equipment leave the beach.

In an attempt to understand whether seals from the Jenner haul-out are displaced to coastal and river haul-outs nearby when management events occur, other nearby haul-outs are monitored concurrently with monitoring of outlet channel construction and maintenance activities. This provides an opportunity to qualitatively assess whether these haul-outs are being used by seals displaced from the Jenner haul-out during lagoon outlet channel excavation and

maintenance. This monitoring would not provide definitive results regarding displacement to nearby coastal and river haul-outs, as individual seals are not marked or photo-identified, but is useful in tracking general trends in haul-out use during lagoon outlet channel excavation and maintenance. As volunteers are required to monitor these peripheral haul-outs, haul-out locations may need to be prioritized if there are not enough volunteers available. In that case, priority would be assigned to the nearest haul-outs (North Jenner and Odin Cove), followed by the Russian River estuary haul-outs, and finally the more distant coastal haul-outs.

Estuary Management Event Monitoring, Artificial Breaching Events – In accordance with the Russian River BiOp, SCWA may artificially breach the barrier beach outside of the summer lagoon management period, and may conduct a maximum of two such breaching events during the lagoon management period, when estuary water surface elevations rise above seven feet. In that case, NMFS may be consulted regarding potential scheduling of an artificial breaching event to open the barrier beach and reduce flooding risk.

Pinniped response to artificial breaching will be monitored at each such event during the term of the IHA. Methods would follow the census and disturbance monitoring protocols described in the “Baseline” section, which were also used for the 1996 to 2000 monitoring events (MSC, 1997, 1998, 1999, 2000; SCWA and MSC, 2001). The exception, as for lagoon management events, is that duration of monitoring is dependent upon duration of the event. On the day of the management event, pinniped monitoring begins at least 1 hour prior to the crew and equipment accessing the beach work area and continues through the duration of the event, until at least 1 hour after the crew and equipment leave the beach.

For all counts, the following information would be recorded in 30-minute intervals: (1) pinniped counts, by species; (2) behavior; (3) time, source and duration of any disturbance; (4)

estimated distances between source of disturbance and pinnipeds; (5) weather conditions (e.g., temperature, wind); and (5) tide levels and estuary water surface elevation.

Monitoring During Pupping Season – The pupping season is defined as March 15 to June 30. Baseline, lagoon outlet channel, and artificial breaching monitoring during the pupping season will include records of neonate (pups less than 1 week old) observations. Characteristics of a neonate pup include: body weight less than 15 kg; thin for their body length; an umbilicus or natal pelage present; wrinkled skin; and awkward or jerky movements on land. SCWA will coordinate with the Seal Watch monitoring program to determine if pups less than 1 week old are on the beach prior to a water level management event.

If, during monitoring, observers sight any pup that might be abandoned, SCWA would contact the NMFS stranding response network immediately and also report the incident to NMFS' West Coast Regional Office and Office of Protected Resources within 48 hours. Observers will not approach or move the pup. Potential indications that a pup may be abandoned are no observed contact with adult seals, no movement of the pup, and the pup's attempts to nurse are rebuffed.

Staffing – Monitoring is conducted by qualified individuals, which may include professional biologists employed by NMFS or SCWA or volunteers trained by the Stewards' Seal Watch program (Stewards). All volunteer monitors are required to attend classroom-style training and field site visits to the haul-outs. Training covers the MMPA and conditions of the IHA, SCWA's pinniped monitoring protocols, pinniped species identification, age class identification (including a specific discussion regarding neonates), recording of count and disturbance observations (including completion of datasheets), and use of equipment. Pinniped identification includes the harbor seal, California sea lion, and northern elephant seal, as well as

other pinniped species with potential to occur in the area. Generally, SCWA staff and volunteers collect baseline data on Jenner haul-out use during the twice-monthly monitoring events. A schedule for this monitoring would be established with Stewards once volunteers are available for the monitoring effort. SCWA staff monitors lagoon outlet channel excavation and maintenance activities and artificial breaching events at the Jenner haul-out, with assistance from Stewards volunteers as available. Stewards volunteers monitor the coastal and river haul-out locations during lagoon outlet channel excavation and maintenance activities.

Training on the MMPA, pinniped identification, and the conditions of the IHA is held for staff and contractors assigned to estuary management activities. The training includes equipment operators, safety crew members, and surveyors. In addition, prior to beginning each water surface elevation management event, the biologist monitoring the event participates in the onsite safety meeting to discuss the location(s) of pinnipeds at the Jenner haul-out that day and methods of avoiding and minimizing disturbances to the haul-out as outlined in the IHA.

Reporting

SCWA is required to submit a report on all activities and marine mammal monitoring results to the Office of Protected Resources, NMFS, and the West Coast Regional Administrator, NMFS, 90 days prior to the expiration of the IHA if a renewal is sought, or within 90 days of the expiration of the IHA otherwise. This annual report will also be distributed to California State Parks and Stewards, and would be available to the public on SCWA's website. This report will contain the following information:

- The number of pinnipeds taken, by species and age class (if possible);
- Behavior prior to and during water level management events;
- Start and end time of activity;

- Estimated distances between source and pinnipeds when disturbance occurs;
- Weather conditions (e.g., temperature, wind, etc.);
- Haul-out reoccupation time of any pinnipeds based on post-activity monitoring;
- Tide levels and estuary water surface elevation; and
- Pinniped census from bi-monthly and nearby haul-out monitoring.

The annual report includes descriptions of monitoring methodology, tabulation of estuary management events, summary of monitoring results, and discussion of problems noted and proposed remedial measures.

Summary of Previous Monitoring

SCWA complied with the mitigation and monitoring required under all previous authorizations. In accordance with the 2013 IHA, SCWA submitted a Report of Activities and Monitoring Results, covering the period of January 1 through December 31, 2013. Previous monitoring reports (available at <http://www.nmfs.noaa.gov/pr/permits/incidental.htm>) provided additional analysis of monitoring results from 2009-12. A barrier beach was formed eleven times during 2013, but SCWA was required to implement artificial breaching for only five of these closure events (note that the fifth such event occurred on January 2, 2014, following bar closure on December 24, 2013, and is not discussed in SCWA's current 2013 monitoring report). The Russian River outlet was closed to the ocean for a total of 104 days in 2013, including extended closures totaling 56 days during the lagoon management period. However, these closures all culminated in natural breaches and no outlet channel management events were required. In January 2012, the barrier beach was artificially breached after two days of breaching activity. There were also several periods over the course of the year where the barrier beach closed or became naturally perched and then subsequently breached naturally (SCWA, 2013). In 2011, no

water level management activities occurred (SCWA, 2012). In 2010, one lagoon management event and two artificial breaching events occurred (SCWA, 2011). Pinniped monitoring occurred no more than 3 days before, the day of, and the day after each water level management activity. In addition, SCWA conducted biological and physical monitoring as described previously. During the course of these activities, SCWA did not exceed the take levels authorized under the relevant IHAs.

Baseline Monitoring

Baseline monitoring was performed to gather additional information about the population of harbor seals utilizing the Jenner haul-out including population trends, patterns in seasonal abundance and the influence of barrier beach condition on harbor seal abundance. The effect of tide cycle and time of day on the abundance of seals at the Jenner haul-out was explored in detail in a previous report (SCWA, 2012); data collected in 2013 did not change the interpretation of these findings. Baseline monitoring at the mouth of the Russian River was conducted concurrently with monitoring of the peripheral haul-outs, and was scheduled for 2 days out of each month with the intention of capturing a low and high tide each in the morning and afternoon. A total of 22 baseline surveys were conducted in 2013. Figure 3 of SCWA's 2013 report shows the mean number of harbor seals during twice-monthly baseline monitoring events from 2009-13.

Peak seal abundance, as determined by the single greatest count of harbor seals at the Jenner haul-out, was on July 11 (476 seals), and overall mean seal abundance at Jenner was greatest in July (mean = 411 ± 7.6 s.e.). This is greater than any previously reported monthly averages by more than 100 seals (Figure 3 of SCWA's report). However, this peak in abundance

during the summer molting period is typical of past years' observations. Also similar to previous years, seal abundance declined in the fall.

No distressed or abandoned pups were reported in 2013. Pup production at the Jenner haul-out was 28.8 percent of total seals as calculated from the peak pup count recorded on April 26 and the number of adult harbor seals present at the same time. This level of production is more typical of past years as compared to 2012, where 13.8 percent of seals were pups at the time of the peak pup count. The average of pups observed (when pups were present) during April and May have been similar between years, ranging from 12.9-15.4 for 2011-13. Comparison of count data between the Jenner and peripheral haul-outs did not show any obvious correlations (e.g., the number of seals occupying peripheral haul-outs compared to the Jenner haul-out did not necessarily increase or decrease as a result of disturbance caused by beach visitors). Please review SCWA's report for a more detailed discussion.

Water Level Management Activity Monitoring

Eight pre-breaching, four each breaching and post-breaching, and two pre-lagoon outlet surveys were conducted in 2013. As mentioned previously and evidenced by this survey activity, only four artificial breaching events and no outlet channel events actually occurred (natural breaches occurred prior to water level management activity in other cases). Artificial breaching events occurred on February 21, October 15, November 7, and December 5. No injuries or mortalities were observed during 2013, and harbor seal reactions ranged from merely alerting to crew presence to flushing from the beach. No California sea lions or northern elephant seals were observed during water level management activities or during biological and physical monitoring of the beach and estuary.

Total observed incidences of marine mammal take, by Level B harassment only, from water level management activity and biological and physical monitoring, was 1,351 harbor seals (detailed in Table 4). No California sea lions or northern elephant seals were observed during water level management activities or during biological and physical monitoring of the beach and estuary. While the observed take was significantly lower than the level authorized, it is possible that incidental take in future years could approach the level authorized. Actual take is dependent largely upon the number of water level management events that occur, which is unpredictable. Take of species other than harbor seals depends upon whether those species, which do not consistently utilize the Jenner haul-out, are present. The authorized take, though much higher than the actual take, was justified based on conservative estimated scenarios for animal presence and necessity of water level management. No significant departure from the method of estimation is used for the proposed IHA (see “Estimated Take by Incidental Harassment”) for the same activities in 2014.

Table 4. Observed incidental harassment (Level B harassment only) of harbor seals during Russian River estuary management activities, 2013

Date	Event Type	Observed take	
		Age class ^a	Number
Feb 21	Artificial breaching	Adult	22
May 15	Water quality sampling	Adult	1
May 30	Beach topographic survey	Adult, pup	80 + 2
Jun 13	Beach topographic survey	Adult	156
Jul 16	Beach topographic survey	Adult	295
Aug 8	Beach topographic survey	Adult	107
Sep 5	Beach topographic survey	Adult	40
Oct 15	Artificial breaching	Adult	45
Nov 7	Artificial breaching	Adult	64
Nov 12	Beach topographic survey	Adult	325
Nov 13	Water quality sampling	Adult	10
Dec 4	Pre-breaching survey	Adult	25
Dec 5	Artificial breaching	Adult	61
Dec 12	Beach topographic survey	Adult	118

Total	1,351
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^a Pups are counted separately through June, after which all seals are counted as adults as it becomes more difficult to accurately age individuals.

It should be noted that one of the primary reasons for the increase in observed incidences of incidental take in 2013 (1,351) compared with prior years (208 in 2012, 42 in 2011, 290 in 2010) was a change in protocol for the beach topographic surveys (although realized level of activity would be expected to remain a primary determinant in future years). Due to the frequent and prolonged river mouth closures in 2013 – including closures of 25 days in June/July and 21 days in September/October – there was an increased need to gather complete information about the topography and sand elevation of the beach to best inform water level management activities. This necessitated the survey crew to access the entire beach, including any area where seals were hauled out. Therefore, beginning on May 30, 2013, the methods for conducting the monthly topographic surveys of the barrier beach were changed. Previously, monitors at a distance would inform survey crews via radio if harbor seals became alert to their presence. Survey crews would then retreat or avoid certain areas as necessary to avoid behavioral harassment of the seals. According to the revised protocol, and provided that no neonates or nursing pups were on the haul-out, the survey crew would continue their approach. The survey crews would proceed in a manner that allowed for the seals to gradually vacate the beach before the survey proceeded, thereby reducing the intensity of behavioral reactions as much as possible, but the numbers of incidences of behavioral harassment nevertheless increased. SCWA expects that this revised protocol would remain in place for the coming year.

SCWA continued to investigate the relative disturbance caused by their activities versus that caused by other sources (see Figure 6 of SCWA’s monitoring report as well as SCWA, 2013). The data recorded during 2013 do not differ from the findings reported in SCWA (2013).

Harbor seals are most frequently disturbed by people on foot, with an increase in frequency of people present during bar-closed conditions (see Figure 5 of SCWA's monitoring report).

Kayakers are the next most frequent source of disturbance overall, also with an increase during bar-closed conditions. For any disturbance event it is often only a fraction of the total haul-out that responds. Some sources of disturbance, though rare, have a larger disturbing effect when they occur. For example, disturbances from dogs occur less frequently, but these incidents often disturb over half of the seals hauled out.

Conclusions

The following section provides a summary of information available in SCWA's monitoring report. The primary purpose of SCWA's Pinniped monitoring plan is to detect the response of pinnipeds to estuary management activities at the Russian River estuary. However, as described previously, the questions listed below are also of specific interest. The limited data available thus far precludes drawing definitive conclusions regarding the key questions in SCWA's monitoring plan, but we discuss preliminary conclusions and available evidence below.

1. Under what conditions do pinnipeds haul out at the Russian River estuary mouth at Jenner?

A summary of baseline pinniped monitoring provided in SCWA (2012) concluded that time of year, tidal state, and time of day all influenced harbor seal abundance at the Jenner haul-out. Baseline data collected from 2009-13 indicate that the highest numbers of pinnipeds are observed at the Jenner haul-out in July (during the molting season; see Figure 3 of SCWA's monitoring report), as would be expected on the basis of harbor seal biological and physiological requirements (Herder, 1986; Allen *et al.*, 1989; Stewart and Yochem, 1994; Hanan, 1996; Gemmer, 2002). Although multiple factors likely influence harbor seal presence at the haul-out,

SCWA believes that barrier beach condition (i.e., open or closed) may be significant. Daily average abundance of seals was lower during bar-closed conditions compared to bar-open conditions. This effect is likely due to a combination of factors, including increased human disturbance, reduced access to the ocean from the estuary side of the barrier beach, and the increased disturbance from wave action when seals utilize the ocean side of the barrier beach. In addition, when the barrier beach is open the river mouth channel provides a natural barrier between visitors accessing Goat Rock State Beach from the main parking area to the south. The increase in disturbances due to kayakers during bar-closed conditions may also be due to the lack of river outflow to the ocean, allowing for kayakers to paddle much closer to the seal haul-out.

Overall, seals appear to utilize the Jenner haul-out throughout the tidal cycle. Seal abundance is significantly lower during the highest of tides when the haul-out is subject to an increase in wave overwash. Time of day had some effect on seal abundance at the Jenner haul-out, as abundance was greater in the afternoon hours compared to the morning hours. More analysis exploring the relationship of ambient temperature, incidence of disturbance, and season on time of day effects would help to explain why these variations in seal abundance occur. It is likely that a combination of multiple factors (e.g., season, tides, wave heights, level of beach disturbance) influence when the haul-out is most utilized.

2. How do seals at the Jenner haul-out respond to activities associated with the construction and maintenance of the lagoon outlet channel and artificial breaching activities?

SCWA has, thus far, implemented the lagoon outlet channel only one time (July 8, 2010). The response of harbor seals at the Jenner haul-out to the outlet channel implementation activities was similar to responses observed during past artificial breaching events (MSC, 1997, 1998, 1999, 2000; SCWA and MSC, 2001). The harbor seals typically alert to the sound of

equipment on the beach and leave the haul-out as the crew and equipment approach. Individuals then haul out on the beach while equipment is operating, leaving the beach again when equipment and staff depart, and typically begin to return to the haul-out within 30 minutes of the work ending. Because the barrier beach reformed soon after outlet channel implementation and subsequently breached on its own following the 2010 event, maintenance of the outlet channel was not necessary and monitoring of the continued response of pinnipeds at the Jenner haul-out to maintenance of the outlet channel and management of the lagoon for the duration of the lagoon management period has not yet been possible. As noted previously, when breaching activities were conducted south of the haul-out location seals often remained on the beach during all or some of the breaching activity. This indicates that seals are less disturbed by activities when equipment and crew do not pass directly past their haul-out.

3. Does the number of seals at the Jenner haul-out significantly differ from historic averages with formation of a summer lagoon in the Russian River estuary?

The duration of closures in recent years has not generally been dissimilar from the duration of closures that have been previously observed at the estuary, and lagoon outlet channel implementation has occurred only once, meaning that there has been a lack of opportunity to study harbor seal response to extended lagoon conditions. A barrier beach has formed during the lagoon management period twelve times since SCWA began implementing the lagoon outlet channel adaptive management plan, with an average duration of nine days. However, the additional sustained river outlet closures observed in 2013 during the lagoon management period (maximum 25 days) provide some information regarding the abundance of seals during the formation of a summer lagoon. While seal abundance was lower overall during bar-closed conditions, there was also a record high in seal abundance recorded (both daily and monthly).

These observations may indicate that, while seal abundance exhibits a short-term decline following bar closure, the number of seals utilizing the Jenner haul-out overall during such conditions is not affected. Coupling seal abundance data with human abundance data and disturbance observations leads SCWA to conclude that the increased frequency of disturbances during bar-closed conditions is the underlying cause for the short-term decline in seal abundance. Short-term fluctuations in abundance aside, it appears that the general trends of increased abundance during summer and decreased abundance during fall, which coincide with the annual molt and likely foraging dispersal, respectively, are not affected.

4. Are seals at the Jenner haul-out displaced to nearby river and coastal haul-outs when the mouth remains closed in the summer?

Initial comparisons of peripheral (river and coastal) haul-out count data to the Jenner haul-out counts have been inconclusive (see Table 4 and Figure 7 of SCWA's monitoring report), and further information from estuary management activities is needed. Given the inconclusive nature of data recorded thus far, it would be useful to be able to track the movements of individual seals. Therefore, SCWA has begun a pilot photo-identification study as a means to observe individual seals over time. SCWA has determined that current observation locations allow capture of the detailed images of seals necessary to identify individuals based on spot patterns, and will continue this pilot over the coming year by evaluating photographs for matches.

Estimated Take by Incidental Harassment

Except with respect to certain activities not pertinent here, section 3(18) of the MMPA defines "harassment" as: "...any act of pursuit, torment, or annoyance which (i) has the potential to injure a marine mammal or marine mammal stock in the wild; or (ii) has the potential to

disturb a marine mammal or marine mammal stock in the wild by causing disruption of behavioral patterns, including, but not limited to, migration, breathing, nursing, breeding, feeding, or sheltering.” The former is termed Level A harassment and the latter is termed Level B harassment.

SCWA has requested, and NMFS proposes, authorization to take harbor seals, California sea lions, and northern elephant seals, by Level B harassment only, incidental to estuary management activities. These activities, involving increased human presence and the use of heavy equipment and support vehicles, are expected to harass pinnipeds present at the haul-out through disturbance only. In addition, monitoring activities prescribed in the BiOp may harass additional animals at the Jenner haul-out and at the three haul-outs located in the estuary (Penny Logs, Patty’s Rock, and Chalanchawi). Estimates of the number of harbor seals, California sea lions, and northern elephant seals that may be harassed by the proposed activities is based upon the number of potential events associated with Russian River estuary management activities and the average number of individuals of each species that are present during conditions appropriate to the activity. As described previously in this document, monitoring effort at the mouth of the Russian River has shown that the number of seals utilizing the haul-out declines during bar-closed conditions. Tables 5 and 6 detail the total number of estimated takes.

Events associated with lagoon outlet channel management would occur only during the lagoon management period, and are split into two categories: (1) initial channel implementation, which would likely occur between May and September, and (2) maintenance and monitoring of the outlet channel, which would continue until October 15. In addition, it is possible that the initial outlet channel could close through natural processes, requiring additional channel implementation events. Based on past experience, SCWA estimates that a maximum of three

outlet channel implementation events could be required. Outlet channel implementation events would only occur when the bar is closed; therefore, it is appropriate to use data from bar-closed monitoring events in estimating take (Table 2). Construction of the outlet channel is designed to produce a perched outflow, resulting in conditions that more closely resemble bar-closed than bar-open with regard to pinniped haul-out usage. As such, bar-closed data is appropriate for estimating take during all lagoon management period maintenance and monitoring activity. As dates of outlet channel implementation cannot be known in advance, the highest daily average of seals per month – the July average for 2009-13 – is used in estimating take. For maintenance and monitoring activities associated with the lagoon outlet channel, which would occur on a weekly basis following implementation of the outlet channel, the average number of harbor seals for each month was used.

Artificial breaching activities would also occur during bar-closed conditions. Data collected specifically during bar-closed conditions may be used for estimating take associated with artificial breaching (Table 2). The number of estimated artificial breaching events is also informed by experience, and is equal to the annual average number of bar closures recorded for a given month from 1996-2013.

Previously, for monthly topographic surveys on the barrier beach, SCWA estimated that only 10 percent of seals hauled out would be likely to be disturbed by this activity, which involves two people walking along the barrier beach with a survey rod. During those surveys a pinniped monitor was positioned at the Highway 1 overlook and would notify the surveyors via radio when any seals on the haul-out begin to alert to their presence. This enabled the surveyors to retreat slowly away from the haul-out, typically resulting in no disturbance. However, protocol for this monitoring activity has been changed (i.e., surveyors will continue cautiously rather than

retreat when seals alert – this is necessary to collect required data) and the resulting incidences of take are now estimated as 100 percent of the seals expected to be encountered. The exception to this change is during the pupping season, when surveyors would continue to avoid seals to reduce harassment of pups and/or mothers with neonates. For the months of March-May, the assumption that only 10 percent of seals present would be harassed is retained. The number of seals expected to be encountered is based on the average monthly number of seals hauled out as recorded during baseline surveys conducted by SCWA in 2011-13 (Table 1).

For electromagnetic imaging profiles associated with the jetty study, the estimate of take was calculated similar to that of the topographic surveys described above. The field work for these profiles will be conducted in a similar manner to the topographic surveys with a monitor present. In addition, these imaging profiles will be conducted outside of the harbor seal pupping season, in an effort to reduce disturbance to nursing females and young pups. As noted previously, SCWA believes that, due to the nature of the activity and mitigation measures to be implemented, other components of the jetty study are unlikely to result in incidental take.

For biological and physical habitat monitoring activities in the estuary, it was assumed that pinnipeds may be encountered once per event and flush from a river haul-out. The potential for harassment associated with these events is limited to the three haul-outs located in the estuary. In past experience, SCWA typically sees no more than a single harbor seal at these haul-outs, which consist of scattered logs and rocks that often submerge at high tide.

Table 5. Estimated number of harbor seal takes resulting from Russian River estuary management activities

Number of animals expected to occur ^a	Number of events ^{b,c}	Potential total number of individual animals that may be taken
Lagoon Outlet Channel Management (May 15 to October 15)		
Implementation: 104 ^d	Implementation: 3	Implementation: 312

Maintenance and Monitoring: May: 53 June: 102 July: 104 Aug: 17 Sept: 17 Oct: 25	Maintenance: May: 1 June-Sept: 4/month Oct: 1	Maintenance: 1,038
	Monitoring: June-Sept: 2/month Oct: 1	Monitoring: 505
		Total: 1,855
Artificial Breaching		
Oct: 25	Oct: 2	Oct: 50
Nov: 53	Nov: 2	Nov: 106
Dec: 34	Dec: 2	Dec: 68
Jan: 32	Jan: 1	Jan: 32
Feb: 134	Feb: 1	Feb: 134
Mar: 224	Mar: 1	Mar: 224
Apr: 80	Apr: 1	Apr: 80
May: 53	May: 1	May: 53
	11 events maximum	Total: 747
Topographic and Geophysical Beach Surveys		
Jan: 95 Feb: 88 Mar: 145 Apr: 135 May: 151 Jun: 151 Jul: 243 Aug: 137 Sep: 67 Oct: 61 Nov: 94 Dec: 64	1 topographic survey/month; 100 percent of animals present Jun-Feb; 10 percent of animals present Mar-May 2 geophysical surveys/month, Sep-Dec; 1/month, Jul-Aug, Jan-Feb; 10 percent of animals present	Jan: 95 + 10 Feb: 88 + 9 Mar: 15 Apr: 14 May: 15 Jun: 151 Jul: 243 + 24 Aug: 137 + 14 Sep: 67 + 13 Oct: 61 + 12 Nov: 94 + 19 Dec: 64 + 13 Total: 1,044 + 114 = 1,158
Biological and Physical Habitat Monitoring in the Estuary		
1 ^e	121	121
Total		3,881

^a For Lagoon Outlet Channel Management and Artificial Breaching, average daily number of animals corresponds with data from Table 2. For Topographic and Geophysical Beach Surveys, average daily number of animals corresponds with 2011-13 data from Table 1.

^b For implementation of the lagoon outlet channel, an event is defined as a single, two-day episode. It is assumed that the same individual seals would be hauled out during a single event. For the remaining activities, an event is defined as a single day on which an activity occurs. Some events may include multiple activities.

^c Number of events for artificial breaching derived from historical data. The average number of events for each month was rounded up to the nearest whole number; estimated number of events for December was increased from one to two because multiple closures resulting from storm events have occurred in recent years during that month. These numbers likely represent an overestimate, as the average annual number of events is six.

^d Although implementation could occur at any time during the lagoon management period, the highest daily average per month from the lagoon management period was used.

^e Based on past experience, SCWA expects that no more than one seal may be present, and thus have the potential to be disturbed, at each of the three river haul-outs. Number of events includes addition of acoustic telemetry surveys.

Table 6. Estimated number of California sea lion and elephant seal takes resulting from Russian River estuary management activities

Species	Number of animals expected to occur ^a	Number of events ^a	Potential total number of individual animals that may be taken
Lagoon Outlet Channel Management (May 15 to October 15)			
California sea lion (potential to encounter once per event)	1	6	6
Northern elephant seal (potential to encounter once per event)	1	6	6
Artificial Breaching			
California sea lion (potential to encounter once per month, Oct-May)	1	8	8
Northern elephant seal (potential to encounter once per month, Oct-May)	1	8	8
Topographic and Geophysical Beach Surveys			
California sea lion (potential to encounter once per month year-round for topographical surveys; potential to encounter once per month Jul-Feb for geophysical surveys)	1	20	20
Northern elephant seal (potential to encounter once per month year-round for topographical surveys; potential to encounter once per month Jul-Feb for geophysical surveys)	1	20	20
Biological and Physical Habitat Monitoring in the Estuary			
California sea lion (potential to encounter once per month, Jul-Feb)	1	8	8
Northern elephant seal (potential to encounter once per month, Jul-Feb)	1	8	8
Total			
California sea lion			42
Elephant seal			42

^a SCWA expects that California sea lions and/or northern elephant seals could occur during any month of the year, but that any such occurrence would be infrequent and unlikely to occur more than once per month.

Analyses and Preliminary Determinations

Negligible Impact Analysis

NMFS has defined "negligible impact" in 50 CFR 216.103 as "...an impact resulting from the specified activity that cannot be reasonably expected to, and is not reasonably likely to, adversely affect the species or stock through effects on annual rates of recruitment or survival."

A negligible impact finding is based on the lack of likely adverse effects on annual rates of recruitment or survival (i.e., population-level effects). An estimate of the number of Level B harassment takes alone is not enough information on which to base an impact determination. In addition to considering estimates of the number of marine mammals that might be "taken"

through behavioral harassment, we consider other factors, such as the likely nature of any responses (e.g., intensity, duration), the context of any responses (e.g., critical reproductive time or location, migration), as well as the number and nature of estimated Level A harassment takes, the number of estimated mortalities, and effects on habitat.

Although SCWA's estuary management activities may disturb pinnipeds hauled out at the mouth of the Russian River, as well as those hauled out at several locations in the estuary during recurring monitoring activities, impacts are occurring to a small, localized group of animals. While these impacts can occur year-round, they occur sporadically and for limited duration (e.g., a maximum of 2 consecutive days for water level management events). Seals will likely become alert or, at most, flush into the water in reaction to the presence of crews and equipment on the beach. While disturbance may occur during a sensitive time (during the March 15-June 30 pupping season), mitigation measures have been specifically designed to further minimize harm during this period and eliminate the possibility of pup injury or mother-pup separation.

No injury, serious injury, or mortality is anticipated, nor is the proposed action likely to result in long-term impacts such as permanent abandonment of the haul-out. Injury, serious injury, or mortality to pinnipeds would likely result from startling animals inhabiting the haul-out into a stampede reaction, or from extended mother-pup separation as a result of such a stampede. Long-term impacts to pinniped usage of the haul-out could result from significantly increased presence of humans and equipment on the beach. To avoid these possibilities, we have worked with SCWA to develop the previously described mitigation measures. These are designed to reduce the possibility of startling pinnipeds, by gradually apprising them of the presence of humans and equipment on the beach, and to reduce the possibility of impacts to pups by

eliminating or altering management activities on the beach when pups are present and by setting limits on the frequency and duration of events during pupping season. During the past 15 years of flood control management, implementation of similar mitigation measures has resulted in no known stampede events and no known injury, serious injury, or mortality. Over the course of that time period, management events have generally been infrequent and of limited duration.

No pinniped stocks for which incidental take authorization is proposed are listed as threatened or endangered under the ESA or determined to be strategic or depleted under the MMPA. Recent data suggests that harbor seal populations have reached carrying capacity; populations of California sea lions and northern elephant seals in California are also considered healthy.

In summary, and based on extensive monitoring data, we believe that impacts to hauled-out pinnipeds during estuary management activities would be behavioral harassment of limited duration (i.e., less than one day) and limited intensity (i.e., temporary flushing at most). Stampinged, and therefore injury or mortality, is not expected – nor been documented – in the years since appropriate protocols were established (see “Mitigation” for more details). Further, the continued, and increasingly heavy (Figure 4; SCWA, 2014), use of the haul-out despite decades of breaching events indicates that abandonment of the haul-out is unlikely. Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the proposed monitoring and mitigation measures, we preliminarily find that the total marine mammal take from SCWA’s estuary management activities will have a negligible impact on the affected marine mammal species or stocks.

Small Numbers Analysis

The proposed number of animals taken for each species of pinnipeds can be considered small relative to the population size. There are an estimated 30,196 harbor seals in the California stock, 296,750 California sea lions, and 124,000 northern elephant seals in the California breeding population. Based on extensive monitoring effort specific to the affected haul-out and historical data on the frequency of the specified activity, we are proposing to authorize take, by Level B harassment only, of 3,881 harbor seals, 42 California sea lions, and 42 northern elephant seals, representing 12.9, 0.01, and 0.03 percent of the populations, respectively. However, this represents an overestimate of the number of individuals harassed over the duration of the proposed IHA, because these totals represent much smaller numbers of individuals that may be harassed multiple times. Based on the analysis contained herein of the likely effects of the specified activity on marine mammals and their habitat, and taking into consideration the implementation of the mitigation and monitoring measures, we preliminarily find that small numbers of marine mammals will be taken relative to the populations of the affected species or stocks.

Impact on Availability of Affected Species for Taking for Subsistence Uses

There are no relevant subsistence uses of marine mammals implicated by this action. Therefore, we have determined that the total taking of affected species or stocks would not have an unmitigable adverse impact on the availability of such species or stocks for taking for subsistence purposes.

Endangered Species Act (ESA)

No species listed under the ESA are expected to be affected by these activities. Therefore, we have determined that a section 7 consultation under the ESA is not required. As described elsewhere in this document, SCWA and the Corps consulted with NMFS under section

7 of the ESA regarding the potential effects of their operations and maintenance activities, including SCWA's estuary management program, on ESA-listed salmonids. As a result of this consultation, NMFS issued the Russian River Biological Opinion (NMFS, 2008), including Reasonable and Prudent Alternatives, which prescribes modifications to SCWA's estuary management activities. The effects of the proposed activities and authorized take would not cause additional effects for which section 7 consultation would be required.

National Environmental Policy Act (NEPA)

In compliance with the National Environmental Policy Act of 1969 (42 U.S.C. 4321 et seq.), as implemented by the regulations published by the Council on Environmental Quality (40 CFR parts 1500-1508), and NOAA Administrative Order 216-6, we prepared an Environmental Assessment (EA) to consider the direct, indirect and cumulative effects to the human environment resulting from issuance of the original IHA to SCWA for the specified activities and found that it would not result in any significant impacts to the human environment. We signed a Finding of No Significant Impact (FONSI) on March 30, 2010. We have reviewed SCWA's application for a renewed IHA for ongoing estuary management activities for 2014 and the 2013 monitoring report. Based on that review, we have determined that the proposed action follows closely the IHAs issued and implemented in 2010-13 and does not present any substantial changes, or significant new circumstances or information relevant to environmental concerns which would require a supplement to the 2010 EA or preparation of a new NEPA document. Therefore, we have preliminarily determined that a new or supplemental EA or Environmental Impact Statement is unnecessary, and will, after review of public comments determine whether or not to reaffirm its FONSI. The 2010 EA is available for review at <http://www.nmfs.noaa.gov/pr/permits/incidental.htm>.

Proposed Authorization

As a result of these preliminary determinations, we propose to issue an IHA to SCWA for conducting the described estuary management activities in Sonoma County, California, for one year from the date of issuance, provided the previously mentioned mitigation, monitoring, and reporting requirements are incorporated. The proposed IHA language is provided next.

This section contains a draft of the IHA itself. The wording contained in this section is proposed for inclusion in the IHA (if issued).

The Sonoma County Water Agency (SCWA), California, is hereby authorized under section 101(a)(5)(D) of the Marine Mammal Protection Act (MMPA; 16 U.S.C. 1371(a)(5)(D)) to harass marine mammals incidental to conducting estuary management activities in the Russian River, Sonoma County, California.

1. This Incidental Harassment Authorization (IHA) is valid from April 21, 2014 through April 20, 2015.
2. This IHA is valid only for activities associated with estuary management activities in the Russian River, Sonoma County, California, including:
 - (a) Lagoon outlet channel management;
 - (b) Artificial breaching of barrier beach;
 - (c) Geophysical surveys and other work associated with a jetty study; and
 - (d) Physical and biological monitoring of the beach and estuary as required.
3. General Conditions
 - (a) A copy of this IHA must be in the possession of SCWA, its designees, and work crew personnel operating under the authority of this IHA.

(b) SCWA is hereby authorized to incidentally take, by Level B harassment only, 3,881 harbor seals (Phoca vitulina richardii), 42 California sea lions (Zalophus californianus californianus), and 42 northern elephant seals (Mirounga angustirostris).

(c) The taking by injury (Level A harassment), serious injury, or death of any of the species listed in condition 3(b) of the Authorization or any taking of any other species of marine mammal is prohibited and may result in the modification, suspension, or revocation of this IHA.

(d) If SCWA observes a pup that may be abandoned, it shall contact the National Marine Fisheries Service (NMFS) West Coast Regional Stranding Coordinator immediately (562-980-3230; Justin.Viezbicke@noaa.gov) and also report the incident to NMFS Office of Protected Resources (301-427-8425; Benjamin.Laws@noaa.gov) within 48 hours. Observers shall not approach or move the pup.

4. Mitigation Measures

In order to ensure the least practicable impact on the species listed in condition 3(b), the holder of this Authorization is required to implement the following mitigation measures:

(a) SCWA crews shall cautiously approach the haul-out ahead of heavy equipment to minimize the potential for sudden flushes, which may result in a stampede – a particular concern during pupping season.

(b) SCWA staff shall avoid walking or driving equipment through the seal haul-out.

(c) Crews on foot shall make an effort to be seen by seals from a distance, if possible, rather than appearing suddenly at the top of the sandbar, again preventing sudden flushes.

(d) During breaching events, all monitoring shall be conducted from the overlook on the bluff along Highway 1 adjacent to the haul-out in order to minimize potential for harassment.

(e) A water level management event may not occur for more than two consecutive days unless flooding threats cannot be controlled.

(f) Equipment shall be driven slowly on the beach and care will be taken to minimize the number of shut-downs and start-ups when the equipment is on the beach.

(g) All work shall be completed as efficiently as possible, with the smallest amount of heavy equipment possible, to minimize disturbance of seals at the haul-out.

(h) Boats operating near river haul-outs during monitoring shall be kept within posted speed limits and driven as far from the haul-outs as safely possible to minimize flushing seals.

In addition, SCWA shall implement the following mitigation measures during pupping season (March 15-June 30):

(i) SCWA shall maintain a one week no-work period between water level management events (unless flooding is an immediate threat) to allow for an adequate disturbance recovery period. During the no-work period, equipment must be removed from the beach.

(j) If a pup less than one week old is on the beach where heavy machinery will be used or on the path used to access the work location, the management action shall be delayed until the pup has left the site or the latest day possible to prevent flooding while still maintaining suitable fish rearing habitat. In the event that a pup remains present on the beach in the presence of flood risk, SCWA shall consult with NMFS and CDFG to determine the appropriate course of action. SCWA shall coordinate with the locally established seal monitoring program (Stewards of the Coast and Redwoods) to determine if pups less than one week old are on the beach prior to a breaching event.

(k) Physical and biological monitoring shall not be conducted if a pup less than one week old is present at the monitoring site or on a path to the site.

5. Monitoring

The holder of this Authorization is required to conduct baseline monitoring and shall conduct additional monitoring as required during estuary management activities. Monitoring and reporting shall be conducted in accordance with the approved Pinniped Monitoring Plan.

(a) Baseline monitoring shall be conducted twice-monthly for the term of the IHA. These censuses shall begin at dawn and continue for eight hours, weather permitting; the census days shall be chosen to ensure that monitoring encompasses a low and high tide each in the morning and afternoon. All seals hauled out on the beach shall be counted every 30 minutes from the overlook on the bluff along Highway 1 adjacent to the haul-out using high-powered spotting scopes. Observers shall indicate where groups of seals are hauled out on the sandbar and provide a total count for each group. If possible, adults and pups shall be counted separately.

(b) In addition, peripheral haul-outs shall be visited for 10-minute counts twice during each baseline monitoring day.

(c) During estuary management events, monitoring shall occur on all days that activity is occurring using the same protocols as described for baseline monitoring, with the difference that monitoring shall begin at least one hour prior to the crew and equipment accessing the beach work area and continue through the duration of the event, until at least one hour after the crew and equipment leave the beach. In addition, a one-day pre-event survey of the area shall be made within one to three days of the event and a one-day post-event survey shall be made after the event, weather permitting.

(d) Monitoring of peripheral haul-outs shall occur concurrently with event monitoring, when possible.

- (e) For all monitoring, the following information shall be recorded in 30-minute intervals:
- i. Pinniped counts by species;
 - ii. Behavior;
 - iii. Time, source and duration of any disturbance, with takes incidental to SCWA actions recorded only for responses involving movement away from the disturbance or responses of greater intensity (e.g., not for alerts);
 - iv. Estimated distances between source of disturbance and pinnipeds;
 - v. Weather conditions (e.g., temperature, percent cloud cover, and wind speed); and
 - vi. Tide levels and estuary water surface elevation.

(a) All monitoring during pupping season shall include records of any neonate pup observations. SCWA shall coordinate with the Stewards' monitoring program to determine if pups less than one week old are on the beach prior to a water level management event.

6. Reporting

The holder of this Authorization is required to:

- (a) Submit a report on all activities and marine mammal monitoring results to the Office of Protected Resources, NMFS, and the West Coast Regional Administrator, NMFS, 90 days prior to the expiration of the IHA if a renewal is sought, or within 90 days of the expiration of the permit otherwise. This report must contain the following information:
- i. The number of seals taken, by species and age class (if possible);
 - ii. Behavior prior to and during water level management events;
 - iii. Start and end time of activity;
 - iv. Estimated distances between source and seals when disturbance occurs;

- v. Weather conditions (e.g., temperature, wind, etc.);
- vi. Haul-out reoccupation time of any seals based on post-activity monitoring;
- vii. Tide levels and estuary water surface elevation;
- viii. Seal census from bi-monthly and nearby haul-out monitoring; and
- ix. Specific conclusions that may be drawn from the data in relation to the four questions of interest in SCWA's Pinniped Monitoring Plan, if possible.

(b) Reporting injured or dead marine mammals:

i. In the unanticipated event that the specified activity clearly causes the take of a marine mammal in a manner prohibited by this IHA, such as an injury (Level A harassment), serious injury, or mortality, SCWA shall immediately cease the specified activities and report the incident to the Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinator, NMFS. The report must include the following information:

- A. Time and date of the incident;
- B. Description of the incident;
- C. Environmental conditions (e.g., wind speed and direction, Beaufort sea state, cloud cover, and visibility);
- D. Description of all marine mammal observations in the 24 hours preceding the incident;
- E. Species identification or description of the animal(s) involved;
- F. Fate of the animal(s); and
- G. Photographs or video footage of the animal(s).

Activities shall not resume until NMFS is able to review the circumstances of the prohibited take. NMFS will work with SCWA to determine what measures are necessary to minimize the

likelihood of further prohibited take and ensure MMPA compliance. SCWA may not resume their activities until notified by NMFS.

i. In the event that SCWA discovers an injured or dead marine mammal, and the lead observer determines that the cause of the injury or death is unknown and the death is relatively recent (e.g., in less than a moderate state of decomposition), SCWA shall immediately report the incident to the Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinator, NMFS.

The report must include the same information identified in 6(b)(i) of this IHA. Activities may continue while NMFS reviews the circumstances of the incident. NMFS will work with SCWA to determine whether additional mitigation measures or modifications to the activities are appropriate.

ii. In the event that SCWA discovers an injured or dead marine mammal, and the lead observer determines that the injury or death is not associated with or related to the activities authorized in the IHA (e.g., previously wounded animal, carcass with moderate to advanced decomposition, or scavenger damage), SCWA shall report the incident to the Office of Protected Resources, NMFS, and the West Coast Regional Stranding Coordinator, NMFS, within 24 hours of the discovery. SCWA shall provide photographs or video footage or other documentation of the stranded animal sighting to NMFS.

iii. Pursuant to sections 6(b)(ii-iii), SCWA may use discretion in determining what injuries (i.e., nature and severity) are appropriate for reporting. At minimum, SCWA must report those injuries considered to be serious (i.e., will likely result in death) or that are likely caused by human interaction (e.g., entanglement, gunshot). Also pursuant to sections 6(b)(ii-iii), SCWA

may use discretion in determining the appropriate vantage point for obtaining photographs of injured/dead marine mammals.

7. Validity of this Authorization is contingent upon compliance with all applicable statutes and permits, including NMFS' 2008 Biological Opinion for water management in the Russian River watershed. This Authorization may be modified, suspended or withdrawn if the holder fails to abide by the conditions prescribed herein, or if the authorized taking is having a more than a negligible impact on the species or stock of affected marine mammals.

Request for Public Comments

We request comment on our analysis, the draft authorization, and any other aspect of this Notice of Proposed IHA for SCWA's estuary management activities. Please include with your comments any supporting data or literature citations to help inform our final decision on SCWA's request for an MMPA authorization.

Dated: February 28, 2014

Donna S. Wieting,
Director,
Office of Protected Resources,
National Marine Fisheries Service.