ENVIRONMENTAL ASSESSMENT ON THE ISSUANCE OF AN INCIDENTAL HARASSMENT AUTHORIZATION TO TAKE MARINE MAMMALS BY HARASSMENT DURING BLACK ABALONE RESEARCH SURVEYS ON SAN NICOLAS ISLAND, CALIFORNIA

I. INTRODUCTION

On August 31, 2004, the National Marine Fisheries Service (NMFS) received an application from Dr. Glenn VanBlaricom (VanBlaricom) requesting a renewal of his Incidental Harassment Authorization (IHA) for the harassment of small numbers of California sea lions (*Zalophus californianus*), Pacific harbor seals (*Phoca vitulina richardsi*), and northern elephant seals (*Mirounga angustirostris*) incidental to research surveys to assess population trends in black abalone at permanently established study sites on San Nicolas Island, California. The previous IHA was issued to VanBlaricom on September 23, 2003 (68 FR 57427, October 3, 2003) and expired on September 17, 2004. This Environmental Assessment (EA) is intended to address impacts on the environment that would result from the issuance of a one-year IHA in November, 2005, to cover the 2006 field season, a subsequent IHA to cover the 2007 field season, and potentially, depending on available funding, subsequent IHAs.

II. PURPOSE AND NEED

Section 101(a)(5)(D) of the MMPA (16 U.S.C. 1361 et seq.) directs the Secretary of Commerce to allow, upon request, the incidental, but not intentional taking, by harassment, of small numbers of marine mammals by U.S. citizens who engage in a specified activity (other than commercial fishing) within a specified geographical region if certain findings are made.

An Incidental Harassment Authorization (IHA) shall be granted if the Secretary finds that the taking will have a negligible impact on the species or stock(s); will not have an unmitigable adverse impact on the availability of the species or stock(s) for subsistence uses. The IHA must set forth the permissible methods of taking by harassment, other means of effecting the least practicable impact on the species or stock and their habitat, and requirements pertaining to the monitoring and reporting of such taking are set forth. 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 relevant here, the MMPA defines "harassment" as

> "...any act of pursuit, torment, or annoyance which (a) has the potential to injure a marine mammal or marine mammal stock in the wild [Level A harassment]; or (b) 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 [Level B harassment]."

Section 101(a)(5)(D) establishes a 45-day time limit for NMFS review of an application followed by a 30-day public notice and comment period on any proposed authorizations for the incidental harassment of small numbers of marine mammals. Within 45 days of the close of the comment period, NMFS must either issue or deny issuance of the authorization.

VanBlaricom determined that conducting black abalone surveys on San Nicolas Island might potentially disturb marine mammals and, accordingly, submitted an application for an IHA. If the action proposed in the IHA application will result in no more than harassment, have no more than a negligible impact on the species or stock, will not have an unmitigable adverse impact on the availability of the species or stock for subsistence uses, and the permissible methods of taking and required monitoring are set forth, then the NMFS shall issue the authorization.

III. DESCRIPTION OF ACTIVITY COVERED BY AUTHORIZATIONS

The purpose of the research is to assess trends in black abalone (*Haliotis cracherodii*) populations at San Nicolas Island, Ventura County, California, over time in permanent study sites. Population trend data for black abalone populations have become important in a conservation context because of: a) the reintroduction of sea otters to San Nicolas Island in 1987, raising the possibility of conflict between otter conservation and abalone populations (abalones are often significant prey for sea otters); b) the appearance of a novel exotic disease, abalone withering syndrome, at San Nicolas Island in 1992, resulting in dramatically increased rates of abalone mortality at the Island; and c) the recent designation of California populations of black abalones as a species of concern in the context of listing pursuant to the Endangered Species Act (ESA) of 1973 as amended. Research is done under the auspices of the Washington Cooperative Fish and Wildlife Research Unit, the University of Washington, and the U.S. Navy (owner of San Nicolas Island), with additional logistical support from the University of California, Santa Cruz. Since the abalone are not handled or removed in the course of the research, neither a state nor federal permit is needed.

Nine permanent research study areas are located in rocky intertidal habitats on SNI in Ventura County, CA. To date, the applicant has made 101 separate field trips to SNI from September 1979 through June 2005, participating in abalone survey work on 534 different days at nine permanent study sites. Quantitative abalone surveys on SNI began in 1981, at which point permanent research sites were chosen based on the presence of dense patches of abalone in order to monitor changes over time in dense abalone aggregations. Research is conducted by counting black abalone in plots of 1 m^2 along permanent transect lines in rocky intertidal habitats at each of the nine study sites on the island. Permanent transect lines are demarcated by stainless steel eyebolts embedded in the rock substrata and secured with marine epoxy compound. Lines are placed temporarily between bolts during surveys and are removed once surveys are completed. Survey work is done by two field biologists working on foot; therefore, monitoring of black abalone populations at SNI can be done only during periods of extreme low tides. The exact date of a visit to any given site is difficult to predict because variation in surf height and sea conditions can influence the safety of field biologists as well as the quality of data collected. In most years survey work is done during the months of January, February, March, July,

November, and December because of optimal availability of low tides. All work is done only during daylight hours because of safety considerations.

Research is expected to extend over a period of 2 more years, from November 30, 2005 through 2007, with additional work in future years remaining a possibility pending funding and staff. Surveys of abalones will be conducted each year during this year period. During each survey year, each of the nine permanent study sites at SNI will be visited three times. Abalone surveys, which take no more than 4 hours at each site, are conducted during two of the three visits to each of the nine sites. A third maintenance visit, which takes less than half of an hour at each site, is used to take measurements and make necessary repairs to plots and is conducted in a month when smaller numbers of pinnipeds are present.

The affected marine mammal populations at SNI, especially California sea lions and northern elephant seals, have grown substantially since the beginning of abalone research in 1979 and have occupied an expanded distribution on the island due to population growth. Sites previously accessible with no risk of marine mammal harassment are now being utilized by marine mammals at levels such that approach without the possibility of harassment is difficult. Of the nine study sites used for the abalone surveys, only two sites can be surveyed without the possibility of disturbing at least one species of pinniped; therefore, an IHA is warranted.

IV. ALTERNATIVES INCLUDING THE PROPOSED ACTION

A. Preferred Alternative (Issuance of IHA)

The proposed action is for NMFS to issue a one-year Incidental Harassment Authorization, and potentially subsequent IHAs through 2007 and beyond, to VanBlaricom allowing the incidental take by harassment of a small number of California sea lions, Pacific harbor seals, and northern elephant seals during black abalone surveys at SNI, California. The mitigation measures and reporting requirements described in Section VII, which include avoidance of interactions with California sea lion pups and Harbor seal pups through time of year restrictions, will be incorporated into the IHA. NMFS has preliminarily determined that the black abalone surveys would result in the taking, by harassment, of small numbers of marine mammals and that this take would have no more than a negligible effect on these species stocks. A detailed description of the activities to be covered by the IHA is included above.

B. No Action Alternative

The No Action Alternative is not issuing the IHA. The MMPA prohibits all takings of marine mammals unless authorized by a permit or exemption under the MMPA. If authorization to incidentally take California sea lions, Pacific harbor seals, and northern elephant seals were denied, the applicant could choose to amend the project either to avoid harassing marine mammals or terminate the project at that location.

C. Issuance of Authorization with Additional Time of Year Requirements

Another alternative NMFS considered was the issuance of the IHA with additional time of year restrictions geared towards completely avoiding the possibility of researchers conducting their research in the vicinity of northern elephant seal pups (avoidance of California sea lions and Pacific harbor seal pups is already included in the proposed mitigation of the preferred alternative). Pupping of elephant seals occurs on SNI from January through early March. Restricting abalone research at the sites with breeding elephant seals from January through March would completely eliminate the possibility of harassing mother and pup pairs of elephant seals.

V. AFFECTED ENVIRONMENT

A. San Nicolas Island

San Nicolas is one of the eight Channel Islands, located in the Santa Barbara Channel off Southern California (Figure 1). Nine miles long and about three and a half miles across at its widest point, it is the farthest island from the mainland, more than 60 miles offshore and about 85 miles southwest of Los Angeles, California. SNI is owned and operated by the U.S. Navy and is off-limits to civilians without specific permission.

The island has a relatively flat plateau on the interior with a very steep cliff face on the south side and a more gradual slope on the north. Elevations of the southern cliff faces average 500 feet with a maximum island elevation of 907 feet. The beaches are mainly loose sand with large semi-transient sand dunes on the western tip of the island. A large, low sand spit extends out from the eastern beach. The interior of the island is a highly eroded rolling mesa with many rills and gullies. Normal conditions around the island are dry, with 18-knot northwest winds and rough surf. Dutch Harbor is the only semi-protected anchorage at the island.

SNI was traditionally well renowned for both its large spiny lobsters and abalone abundance. However, abalones have been in decline since the 1970s due to both over-fishing and disease. Black abalones have suffered from withering syndrome since 1985, as well as over-fishing and, potentially, sea otter predation.

Unrestrained fur harvest in the 18th and 19th centuries resulted in the local extinction of the southern sea otter from SNI for the majority of the 20th century. Between 1987 and 1991, as part of the California sea otter recovery program, the U.S. Fish and Wildlife Service (USFWS) reintroduced 139 sea otters to SNI. Initially there were concerns about the effects of a new sea otter population on abalone abundance at SNI. However, sea otter numbers at SNI dropped to about 20 shortly after their reintroduction and remained there, and effects on abalone abundance remain to be seen.

Abalone populations most often occur in shallow nearshore waters, distributed in patches across large tracts of rocky substrata, which is why distribution, abundance and population dynamics are typically difficult to determine (Hochberg, 1993). Black abalone, alternatively, occur primarily in rocky intertidal habitats. The nine study sites at SNI were chosen for the

dense aggregations of black abalone they contain and consist of three different substrate types; an open, more vertical surface with an inclination of greater than 45°, an open, more horizontal surface with an inclination of less than 45°, or a cryptic surface, where abalone are fully enclosed within cracks, crevices, or small caves. In virtually all cases, the shoreline habitats near the abalone study sites are gently sloping sandy beaches or horizontal sandstone platforms with unimpeded and non-hazardous access to the water for hauled-out animals.

The marine mammal species anticipated to be in the area of the pedestrian survey team, and thereby potentially incidentally harassed by the research activities, are the California sea lion (*Zalophus californianus*), Pacific harbor seal (*Phoca vitulina richardsi*), and northern elephant seal (*Mirounga angustirostris*).

B. Marine Mammals

Many of the beaches in the Channel Islands provide resting, molting or breeding places for species of pinnipeds. On SNI, three pinniped species (California sea lion, Pacific harbor seal, and northern elephant seal) can be expected to occur on land in the vicinity of abalone research sites either regularly or in large numbers during certain times of the year. In addition, a single adult male Guadalupe fur seal (*Arctocephalus townsendi*) was seen at one abalone research site on two occasions during the summer months in the mid-1980's; however, there have been no sightings of this species on the island since then.

Further information on the biology and distribution of these species and others in the region can be found in Dr. VanBlaricom's application, which is available upon request (see ADDRESSES), and the Marine Mammal Stock Assessment Reports, which are available online at http://www.nmfs.noaa.gov/prot_res/PR2/Stock_Assessment_Program/individual_sars.html.

1. California Sea Lions

The U.S. stock of California sea lions extends from the U.S./Mexico border north into Canada. Breeding areas of the sea lion are on islands located in southern California, western Baja California, and the Gulf of California and they primarily use the central California area to feed during the non-breeding season. Population estimates for the U.S. stock of California sea lions, which are based on counts conducted in 2001 and extrapolations from the number of pups, range from a minimum of 138,881 to an average of 244,000 animals, with a current growth rate of 5.4 to 6.1 percent per year (Carretta et al. 2005). The California sea lion is not listed under the ESA and the U.S. stock is not considered depleted under the MMPA.

California sea lions haul out at many sites on SNI and are by far the most common pinniped on the island. Over the course of a year, up to 100,000 sea lions may use SNI. Numbers of sea lions at SNI increased by about 21% per year between 1983 and 1995 (NMFS, 2003) and sea lions have recently started occupying areas that were not formerly used. Pupping occurs on the beaches of SNI from mid-June to mid-July. Females nurse their pups for about eight days and then begin an alternating pattern of foraging at sea vs. attending and nursing the pup on land, which lasts for about eight months, and sometimes up to a year. California sea lions

also haul out at SNI during the molting period in September, and smaller numbers of females and juveniles haul out during most of the year.

2. Pacific Harbor Seals

Harbor seals are widely distributed in the North Atlantic and North Pacific. In California, approximately 400-500 harbor seal haul-out sites are distributed along the mainland and on offshore islands, including intertidal sandbars, rocky shores and beaches (Hanan 1996). A complete count of all harbor seals in California is impossible because some are always away from the haul-out sites. A complete pup count (as is done for other pinnipeds in California) is also not possible because harbor seals are precocious, with pups entering the water almost immediately after birth. Based on the most recent harbor seal counts (2002) and including a correction factor for the above, the estimated population of harbor seals in California is 27,863 (Caretta *et al.*, 2005), with an estimated minimum population of 25,720 for the California stock of harbor seals. Counts of harbor seals in California showed a rapid increase from 1972 to 1990, but since 1990 there has been no net population growth along the mainland or the Channel Islands. Though no formal determination of Optimal Sustainable Population (OSP) has been made, the decrease in the growth rate may indicate that the population has reached its carrying capacity. The harbor seal is not listed under the ESA and the California stock is not considered depleted under the MMPA.

Harbor seals haul out at various sandy, cobble, and gravel beaches around SNI and pupping occurs on the beaches from late February to early April, with nursing of pups extending into May. Harbor seals may also haul out during molting period in late Spring, and smaller numbers haul out at other times of year. Harbor seal abundance increased at SNI from the 1960s until 1981, but since the average counts have not changed significantly. From 1982 to 1994, numbers of harbor seals have fluctuated between 139 and 700 harbor seals based on both peak ground counts and annual photographic survey photos. The most recent aerial count was of 457 harbor seals in 1994.

3. Northern Elephant Seal

Northern elephant seals breed and give birth in California (U.S.) and Baja California primarily on offshore islands, from December to March (Stewart et al 1994). The California breeding stock, which includes the animals on SNI, is now demographically separated from the Baja Califfornia population. Based on trends in pup counts, northern elephant seal colonies appeared to be increasing in California through 2001. The population size of northern elephant seals in California is estimated to be 101,000 animals, with a minimum population estimate of 60,547 (Carretta et al. 2005). A continuous average growth rate (though it has declined a bit in recent years) of 8.3% has seen numbers of this species increase from 100 individuals in 1900 to the current population size (Caretta et al., 2005). The northern elephant seal is not listed under the ESA and the California stock is not considered depleted under the MMPA.

Increasing numbers of elephant seals haul out at various sites around SNI. Based on a pup count in 1995 that found 6,575 pups, scientists estimated that over 23,000 elephant seals may use SNI in a year (NMFS, 2003). From 1988 to 1995 the pup counts on SNI increased at an

average rate of 15.4 % per year, however, the growth rate of the population as a whole seems to have declined in recent years (NMFS, 2003). Pupping occurs on the beaches of SNI from January to early February, with nursing of pups extending into March. Northern elephant seals also haul out during the molting periods in the spring and summer, and smaller numbers haul out at other times of the year.

C. Endangered Species

A single adult male Guadalupe fur seal (*Arctocephalus townsendi*) was seen at one abalone research site on two occasions during the summer months in the mid-1980's; however, there have been no sightings of this species on the island since then. As described in the IHA application, researchers will suspend all activities and vacate the study site if a Guadelupe fur seal is sighted while researchers are at SNI.

Southern sea otters (*Enhydra lutris nereis*), federally listed as threatened, occur offshore of SNI, but are not expected ashore (and have never been encountered by the researcher) during the time periods when the research activities would be conducted. However, if sea otters are sighted ashore during the abalone research, Dr. VanBlaricom would suspend all research activities and vacate the study site that California sea otters are occupying. The protection of southern sea otters under the ESA and MMPA is the responsibility of the U.S. Fish and Wildlife Service.

NMFS has determined that the described abalone research and the accompanying IHA will have no effect on ESA-listed species or critical habitat. Therefore, consultation under Section 7 was not required.

VI. ENVIRONMENTAL CONSEQUENCES

The impact of Federal actions must be considered prior to implementation to determine whether the action will significantly affect the quality of the human environment. In this section, an analysis of the environmental impacts of issuing an IHA to VanBlaricom at SNI and the alternatives to that proposed action is presented.

A. Preferred Alternative

1. Impacts on Marine Mammals

The applicant requests renewal of the IHA issued to him for incidental takes, by Level B harassment only, of California sea lions, Pacific harbor seals, and northern elephant seals. The currently proposed IHA will cover the 2006 field season. The applicant anticipates the need for another IHA to cover the 2007 field season, and perhaps subsequent seasons depending on available funding and staff.

Variable numbers of sea lions, harbor seals, and elephant seals typically haul out near seven of the nine study sites used for abalone research, with breeding activity occurring at four of these seven sites. Pinnipeds likely to be affected by abalone research activity are those that

are hauled out on land at or near study sites. For the previous IHA, the applicant estimated that pinnipeds typically haul out near six of the nine study sites, with breeding activity occurring at five of these six sites. However, during field work in 2003 and 2004, it became apparent that non-breeding California sea lions had begun to haul out regularly at an additional abalone study site, and that sea lions and elephant seals hauled out at one of the study sites are non-breeding animals; therefore, it has become evident that seven of the nine study sites are used by pinnipeds for hauling out, with breeding activity occurring at four of these seven sites.

Incidental harassment may result if hauled animals move to increase their distance from persons involved in abalone surveys. Although marine mammals will not be deliberately approached by abalone survey personnel, approach may be unavoidable if pinnipeds are hauled out directly upon the permanent abalone study plots. In almost all cases, shoreline habitats near the abalone study sites are gently sloping sandy beaches or horizontal sandstone platforms with unimpeded and non-hazardous access to the water. If disturbed, hauled animals may move toward the water without risk of encountering significant hazards. In these circumstances, the risk of serious injury or death to hauled animals is very low.

One exception to the low risk of marine mammal injury or mortality associated with abalone research would be if disturbances occur during breeding season, as it is possible that mothers and dependent pups may become separated. If separated pairs don't reunite fairly quickly, risks of mortality to pups may increase. Also, adult northern elephant seals may trample elephant seal pups if disturbed. Trampling increases the risk of injury or death to the pups. However, mitigation measures including time of year restrictions that require avoidance of all sites with California sea lion pups or Harbor seal pups will be incorporated into the IHA. Though elephant seal pups are sometimes present at abalone surveys, elephant seals are far less reactive to researcher presence than the other two species, researchers use great care approaching sites (and because elephants seals pup on the sand and permanent study sites are on rocks, the two are always separated by at least 50 m), and only 16 total (adult) elephant seals have been disturbed in the last two years (of 971 present).

NMFS anticipates that only Level B incidental harassment may occur associated with the proposed continuation of black abalone research at SNI and that this research will result in a negligible impact on these marine mammal species or stocks or on their habitats. There is no anticipated impact of the research activity on the availability of the species or stocks for subsistence uses because there is no subsistence harvest of marine mammals in California.

Estimated Levels of Incidental Take

The distribution of pinnipeds hauled out on beaches is not even. The number of marine mammals disturbed will vary by month and location, and, compared to animals hauled out on the beach farther away from survey activity, only those animals hauled out closest to the actual survey transect plots contained within each research site are likely to be disturbed by the presence of researchers and alter their behavior or attempt to move out of the way. Based on past observations made by the applicant in 2003, 2004, and 2005 (Table 1), assuming a maximum level of incidental harassment of marine mammals at each site during periods of visitation, NMFS estimates that maximum total possible numbers of individuals that will be

incidentally harassed (resulting from one complete cycle of visits to the nine study sites) would be 1600 California sea lions, 120 Pacific harbor seals, and 20 northern elephant seals. Three visit cycles are anticipated during the year-long validity of an IHA. As noted earlier, any site occupied by Guadalupe fur seals will be vacated by researchers immediately and no taking of this species will occur.

	Number of visits to occuppied sites	Total number of animals present	Estimated number of animals disturbed
2003/2004			
Zalophus californianus	13	2329	1472
Phoca vitulina richardsi	5	108	99
Mirounga angustirostris	13	562	7
2005			
Zalophus californianus	9	1383	983
Phoca vitulina richardsi	5	99	88
Mirounga angustirostris	9	409	9

Table 1. Number of pinnipeds encountered and disturbed during previously monitored research visits to the study sites on SNI. The researcher considered an animal to have been disturbed if it moved, even a few feet, in response to the researcher's presence or if the animal was already moving and changed direction. Animals that raised their head and looked at the researcher without moving were not considered disturbed.

2. Impacts on Marine Mammal Habitat or Subsistence Use

NMFS anticipates no loss or modification to the habitat used by California sea lions, Pacific harbor seals, or northern elephant seals that haul out near on SNI as a result of the issuance of an IHA to VanBlaricom. Though there are elephant seal pupping sites near the abalone study sites being used at the time the abalone sites are surveyed, researchers are able to conduct their work without disturbing the pairs and marine mammal habitat is not negatively impacted.

There are no subsistence uses for California sea lions, northern elephant seals, or Pacific harbor seals in California waters, and thus, there are no anticipated effects on subsistence needs.

3. Endangered Species

A single adult male Guadalupe fur seal (*Arctocephalus townsendi*) was seen at one abalone research site on two occasions during the summer months in the mid-1980's; however, there have been no sightings of this species on the island since then. As described in the IHA application, researchers will suspend all activities and vacate the study site if a Guadelupe fur seal is sighted while researchers are at SNI.

Southern sea otters (*Enhydra lutris nereis*), federally listed threatened, occur offshore of SNI, but are not expected ashore (and have never been encountered by the researcher) during the

time periods when the research activities would be conducted. However, if sea otters are sighted ashore during the abalone research, Dr. VanBlaricom would suspend all research activities and vacate the study site that California sea otters are occupying. The protection of southern sea otters under the ESA is the responsibility of the U.S. Fish and Wildlife Service.

NMFS has determined that the described abalone research and the accompanying IHA will have no effect on species or their habitat protected under the ESA. Therefore, formal consultation under Section 7 was not required.

4. Cumulative Impacts

Cumulative effects are defined as "the impact on the environment which results from the incremental impact of the action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (Federal or non-federal) or person undertakes such other actions" (40 CFR §1508.7).

Since, SNI is owned and operated by the Navy, public access is restricted and human activity on the beaches is limited primarily to researchers monitoring pinniped populations. Though military exercises are occasionally conducted on beaches, operational constraints associated with seasonal marine mammal shore activity and bird nesting behaviour are placed on the training activities to ensure that animals are not disturbed. The Navy is already authorized to take marine mammals incidental to the launch of no more than 40 Vandal missiles (or similar sized missiles) per year on SNI, each of which results in strong noise at the western end of SNI that lasts no more than a few seconds. The Navy has two other projects, Tomahawk Testing and Training, and an Inert Ordnance Delivery Area that together include 11 or less overflights (non-low altitude) on the eastern side of the island. All together, these other activities at SNI occur only infrequently and for a relatively short amount of time, and, therefore, NMFS does not anticipate any cumulative impacts.

B. No Action Alternative

If an IHA were not issued, any takes of marine mammals resulting from the abalone research would not be authorized and a likely violation of the MMPA. If VanBlaricom does not conduct the abalone research, the previously described risk to marine mammals would be eliminated. However, he would be unable to complete his work, valuable information would be lost, and funding designated for the abalone research would be wasted.

C. Issuance of Authorization with Additional Time of Year Restrictions

Restricting abalone research at the sites with breeding elephant seals from January through March would eliminate the possibility of harassing mother and pup pairs of elephant seals. However, researchers have not yet encountered many elephant seal pups in the vicinity of the study, and harassment of those animals encountered has been avoided by cautious approach to the study sites, as elephant seals appear to be far less reactive to human presence than sea lions or harbor seals.

Alternatively, further restricting the applicant's work window in this manner would make data collection only possible in November and December at some sites, which is logistically difficult. Survey work from November through January may be interrupted more frequently than in other months by waves resulting from winter storms, sometimes enough to compromise the safety of researchers and require delays in survey work. Also, some of the lowest tides, and therefore best survey times, are in January, February, and March.

VII. MITIGATION, MONITORING, AND REPORTING

A. Mitigation

Several mitigation measures to reduce the potential for harassment from population assessment research surveys will be implemented as part of the SNI abalone research activities. Primarily, mitigation of the risk of disturbance to pinnipeds simply requires that researchers are judicious in the route of approach to abalone study sites, avoiding close contact with pinnipeds hauled out on shore. In no case will marine mammals be deliberately approached by abalone survey personnel, and in all cases every possible measure will be taken to select a pathway of approach to study sites that minimizes the number of marine mammals harassed. Each visit to a given study site will last for a maximum of 4 hours, after which the site is vacated and can be re-occupied by any hauled marine mammals that may have been disturbed by the presence of abalone researchers.

The potential risk of injury or mortality will be avoided with measures required under the authorization. Disturbances to females with dependent pups (in the cases of California sea lions and Pacific harbor seals) will be mitigated to the greatest extent practicable by avoiding visits to the four black abalone study sites with resident pinnipeds during periods of breeding and lactation from mid-February through the end of October. The previous authorization required the applicant to avoid conducting survey research at certain study sites that may have breeding and/or lactating pinnipeds during the period from February through October. However, during field work in early 2004 it became evident that pupping by harbor seals at these sites does not begin until the latter half of February. Therefore, the current authorization is shortened to exclude the first half of February. During this period, abalone research would be confined to the other five sites where pinniped breeding and post-partum nursing does not occur. Limiting visits to the four breeding and lactation sites to periods when these activities do not occur (November, December, January, and the first half of February) will reduce the possibility of incidental harassment and the potential for serious injury or mortality of dependent California sea lion pups and Pacific harbor seal pups to near zero.

Northern elephant seal pups are present at four sites during winter months. Risks of injury or mortality of elephant seal pups by mother/pup separation or trampling are limited to the period from January through March when pups are born, nursed, and weaned, ending about 30 days post-weaning when pups depart land for foraging areas at sea. However, elephant seals have a much higher tolerance of nearby human activity than sea lions or harbor seals. Also, elephant seal pupping typically occurs on the sandy beaches at SNI, approximately 50 m or more away from the abalone study sites. Possible take of northern elephant seal pups will be

minimized by using a very careful approach to the study sites and avoiding the proximity of hauled seals and any seal pups during collection of abalone population data.

One individual Guadalupe fur seal was seen at study site 8 on two separate occasions during the summer months in the mid-1980's. No individuals of this species have been seen during abalone research work since then. Thus, limitation of research visits to site 8 to the period November through January eliminates the potential for taking of Guadalupe fur seals by harassment. Guadalupe fur seals are distinctive in appearance and behavior, and can be readily identified at a distance without any disturbance. Harassment, injury, or mortality of Guadalupe fur seals will be prevented by immediately suspending research work and vacating any study area in which this species is seen. Therefore, an authorization for the taking of Guadalupe fur seals by harassment is neither required nor requested. Sea otters are not expected ashore during the time periods when the research activities would be conducted. However, if sea otters are sighted ashore during the abalone research, Dr. VanBlaricom would follow similar procedures in place for fur seals, research activities will be suspended upon any areas that California sea otters are occupying.

B. Monitoring

Currently, all biological research activities at SNI are subject to approval and regulation by the Environmental Planning and Management Department (EPMD), U.S. Navy. The U.S. Navy owns SNI and closely regulates all civilian access to and activity on the island, including biological research. Therefore, monitoring activities will be closely coordinated with Navy marine mammal biologists located on SNI.

In addition, status and trends of pinniped aggregations at SNI are monitored by the NMFS Southwest Fisheries Science Center. Also, long-term studies of pinniped population dynamics, migratory and foraging behavior, and foraging ecology at SNI are conducted by staff at Hubbs-Sea World Research Institute (HSWRI).

Monitoring requirements in relation to VanBlaricom's abalone research surveys will include observations made by the applicant and his associates. Information recorded will include species counts (with numbers of pups) as well as numbers of observed disturbances during the abalone surveys. Observations of unusual behaviors, numbers, or distributions of pinnipeds on SNI will be reported to EPMD, NMFS, and HSWRI so that any potential follow-up observations can be conducted by the appropriate personnel. In addition, observations of tag-bearing pinniped carcasses as well as any rare or unusual species of marine mammals will be reported to EPMD and NMFS, allowing transmittal of this information to appropriate agencies and personnel.

If at any time injury or death of any marine mammal occurs that may be a result of the proposed abalone research, Dr. VanBlaricom will suspend research activities and contact NMFS immediately to determine how best to proceed to ensure that another injury or death does not occur and to ensure that the applicant remains in compliance with the MMPA.

C. Reporting

A draft final report must be submitted to NMFS within 60 days after the conclusion of the year-long field season. The report will include a summary of the information gathered pursuant to the monitoring requirements set forth in the IHA. A final report must be submitted to the Regional Administrator within 30 days after receiving comments from NMFS on the draft final report. If no comments are received from NMFS, the draft final report will be considered to be the final report.

VIII. CONCLUSION

Based on the information contained in the application, the December 3, 2004 (69 FR 70249) *Federal Register* notice, Dr. VanBlaricom's monitoring reports for previous field seasons and this document, NMFS has determined that the impact of abalone research will result, at most, in a temporary modification in behavior by small numbers of California sea lions, Pacific harbor seals, and northern elephant seals, in the form of head alerts, movement away from the researchers and/or flushing from the beach. In addition, no take by injury or death is anticipated, and harassment takes will be at the lowest level practicable due to incorporation of the mitigation measures mentioned previously in this document. While the number of potential incidental harassment takes will depend on the distribution and abundance of marine mammals in the vicinity of the survey activity and the distance between the seals and the researchers, NMFS anticipates that the number of potential harassment takings will be small relative to the species stock sizes and will have no more than a negligible impact on the affected species stocks and their habitat. The project is not expected to interfere with any subsistence hunts. NMFS has therefore determined that the requirements of section 101(a)(5)(D) of the MMPA have been met and the authorization can be issued.

As a result of this environmental review, NMFS has determined that the issuance of an IHA for the 2006 field season, and potentially future field seasons, for VanBlaricom's black abalone research will not significantly affect the quality of the human environment. Additionally, the issuance of this IHA is not controversial and it will not set a precedent for future actions with significant effects. Accordingly, an environmental impact statement is not required.

VIII. LITERATURE CITED

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