CHAPTER 5
CUMULATIVE IMPACTS

5.1 INTRODUCTION

The Council on Environmental Quality (CEQ) Regulations (40 Code of Federal Regulations [C.F.R.] §§1500-1508) for Implementing the Procedural Provisions of the National Environmental Policy Act (NEPA) of 1969, as amended (42 United States Code [U.S.C.] § 4321 et seq.) define cumulative effects 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 C.F.R. § 1508.7)

The contribution of a proposed action to the overall cumulative impacts in a region of influence (ROI) is of particular concern. A single project may have individually minor impacts; however, when considered together with other projects, the effects may be collectively significant. A cumulative impact is, therefore, the additive effect of all projects in the same geographic area.

In general, effects of a particular action or group of actions must meet all of the following criteria to be considered cumulative impacts:

- Effects of several actions occur in a common locale or ROI (i.e., action can contribute to effects of an action in a different location).
- Effects on a particular resource are similar in nature (i.e., affects the same specific element of a resource).
- Effects are long-term; short-term impacts dissipate over time and cease to contribute to cumulative impacts.

Section 5.2 discusses relevant past, present, and reasonably foreseeable future actions on the Point Mugu Sea Range or in the immediate vicinity of NAS Point Mugu. Specific environmental documentation addressing direct and indirect effects of these actions either has been or will be conducted separately from this EIS/OEIS. A brief summary of the projects considered for cumulative analysis is included in Section 5.2, and a discussion of potential cumulative impacts is provided in Section 5.3.

5.2 CUMULATIVE PROJECTS

5.2.1 Navy Projects

5.2.1.1 VR-55 Reserve Squadron and Mobile Maintenance Facility Relocation to NAS Point Mugu

The Navy recently relocated the VR-55 squadron and Mobile Maintenance Facility (MMF) to NAS Point Mugu from Moffet Field, California. This relocation involved five C-130 aircraft, 66 maintenance vans, and associated personnel (a total of 187 full-time and 185 reserve personnel). VR-55 conducts training flights, logistic support missions, and detachments to remote locations. The MMF provides mobile support units and maintenance for P-3 aircraft. The aircraft were assigned to Hangar 34 after the VXE-6 (Antarctic Development Squadron) disestablished and removed their six C-130s from Point Mugu. The relocated E-2 squadrons have been assigned to this same hangar on an interim basis until proposed

renovations for their permanent facility are completed in 2001. The MMF vans were located at a previously vacant location at NAS Point Mugu. Both a Categorical Exclusion and Record of Non-Applicability were issued for this project.

The proposed action examined in this EIS/OEIS primarily involves activities on the Sea Range. No increase of personnel and no construction would occur at NAS Point Mugu. There is only minimal geographic overlap between environmental issues associated with the VR-55 and MMF relocation, and the actions addressed in this EIS/OEIS.

5.2.1.2 Surface Warfare Engineering Facility

The Surface Warfare Engineering Facility (SWEF) is located at the Construction Battalion Center (CBC) Port Hueneme, approximately 4 miles (6.4 kilometers [km]) northwest of Point Mugu. The SWEF is a component of a separate Navy Command, the Port Hueneme Division (PHD) Naval Surface Warfare Center (NSWC). The Navy recently published an Environmental Assessment (EA) and issued a Finding of No Significant Impact (FONSI) on 22 June 2000 addressing current operations and proposed implementation of the Virtual Test Capability at the SWEF.

During tests, the SWEF functions like a "ship on land." It is used for testing shipboard systems to accomplish the following objectives: investigate engineering solutions for existing systems, provide training for military and civilian personnel, and evaluate new self-defense systems without requiring installation aboard ships or equipping a laboratory at sea. Aircraft used by the SWEF to test radar detection and tracking capabilities fly from, to, and/or through the Sea Range and use its range operations and air controllers to assist in directing aircraft. All aircraft operations scheduled and controlled by NAWCWPNS Point Mugu are included within the analysis of the No Action Alternative addressed in this EIS/OEIS.

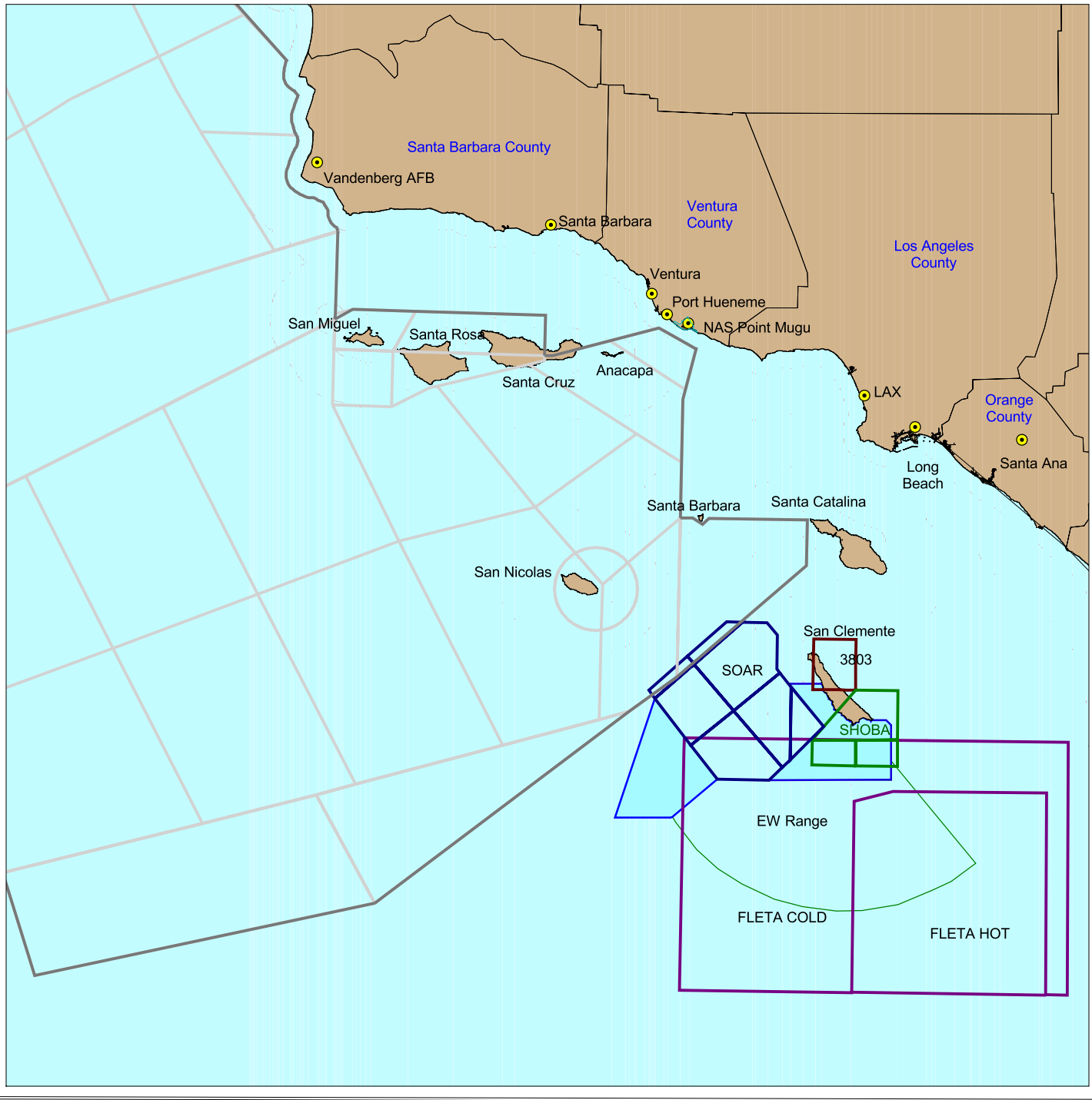
5.2.1.3 West Coast Basing of the F/A-18E/F Aircraft

This action involves siting 92 F/A-18 aircraft (E/F models), locating 5,145 associated personnel, and providing associated training functions at the receiving installation. In addition to the increased staffing and equipment levels, the proposed action would increase Navy activity and flight operations at the receiving installation. The three installations considered for the west coast base are NAS Lemoore, NAS Point Mugu, and Naval Air Facility (NAF) El Centro. A Draft EIS was prepared assessing the potential impacts associated with the Preferred Alternative (NAS Lemoore) and other alternatives. Subsequent to the Draft EIS, the Navy removed NAS Point Mugu as a potential receiving installation candidate, and a Record of Decision (ROD) was signed selecting NAS Lemoore as the location to receive the F/A-18s.

5.2.1.4 San Clemente Island Range Complex

San Clemente Island is the southernmost of the eight California Channel Islands and is located 43 nautical miles (NM) [80 km] east-southeast of San Nicolas Island. The San Clemente Island Range Complex (SCIRC) consists of San Clemente Island; associated land, air, and sea training ranges; and designated operating areas to the south and west of the island (Figure 5-1). Most of these areas are under the supervision of the Southern California Offshore Range (SCORE). The role of the SCIRC is to support tactical training to improve the combat readiness of Pacific Fleet Air, Surface, and Submarine units by providing instrumented operating areas and associated facilities.

Navy Ranges in the Southern California Bight



Legend

- Proposed Shallow Water Training Range
- Southern California Acoustic Range (SOAR)
- FLETA HOT and FLETA COLD
- Shore Bombardment Area (SHOBA)
- Operations Area 3803
- Point Mugu Sea Range

N
W E
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50 0 50 Nautical Miles

Projection: UTM Zone 11
North American Datum 1927

Figure 5-1

This integrated set of SCIRC ranges and operational areas cover approximately 2,620 NM^2 (8,990 km^2) and is located 50 NM (93 km) south of Long Beach. One of the main SCIRC components is the Southern California Anti-Submarine Warfare Range (SOAR), a portion of which overlaps the Point Mugu Sea Range. The purpose of the overlap is to provide increased training space for SOAR participants to use underwater instrumentation installed on the ocean floor. The overlap area is approximately 23 NM [43 km] long by 3 NM [6 km] wide and is the subject of a Memorandum of Agreement that specifies coordination in scheduling and operations between SCORE and the Point Mugu Sea Range. When scheduled, SCORE operations normally use the underwater space and the airspace from sea level up to an altitude of 5,000 feet. The area can be used by NAWCWPNS Point Mugu if needed. The larger operating areas of W-291, FLETA HOT, and FLETA COLD are also used by the Fleet but are not scheduled by SCORE, nor are they part of the SCIRC.

Currently, the operations that take place in the SCIRC include: undersea warfare (anti-submarine and mine countermeasures); mining exercises; missile firing; electronic warfare; shore bombardment; amphibious warfare; Naval Special Warfare; and non-combatant operations. About 2,700 operations are conducted per year. Since the primary purpose of the range complex is Fleet training, there is a wide variety of munitions used. They include about 400 torpedoes, 400 underwater targets, 8,000 sonobuoys, 600 mine shapes, 40-60 missiles with aerial targets, 700 artillery shells, 6,000 naval gun shells, 600 bombs, 40,000 cannon shells, over 1.6 million small arms rounds, and other assorted munitions.

The Navy is currently proposing to enhance the capabilities of the SCIRC to meet current and anticipated Fleet training and readiness needs. The Navy issued a Notice of Intent to prepare an EIS/OEIS on 17 August 1999. Public scoping meetings were held in Los Angeles, Orange, and San Diego counties in September 1999, and the EIS/OEIS is currently being prepared. Specific elements to enhance the SCIRC's capabilities include: instrumenting an existing shallow water area; increasing the number of participating personnel in amphibious operations and expanding the scope of these operations once per year to include a battalion-size landing (up to 1,500 Marines plus equipment); defining land Training Areas and Ranges for the Naval Special Warfare Command; increasing the frequency and intensity of training activities; determining the optimum configuration of land uses; and developing procedures for addressing endangered species, natural resources, and cultural resources that meet statutory obligations in a way that minimizes limitations on the use of SCIRC and sustains natural and cultural resources. If the proposed action is implemented, the number of training and test operations would increase by 500 to about 3,200 per year.

As described above, there is only minimal geographic overlap between the Point Mugu Sea Range and the SCIRC.

5.2.1.5 Tomahawk Testing and Training

NAWCWPNS Point Mugu proposes to use an existing underwater launch site near San Clemente Island and establish and use a new soft-landing missile recovery area at San Nicolas Island in support of continued testing of the Tomahawk Land Attack Missile (TLAM). An EA was previously prepared addressing the continued testing of TLAM within the parameters of established West Coast testing facilities that are currently used by the Tomahawk program. Subsequent to publication of the FONSI, the Navy identified the need to use an underwater launch facility and to establish a land-based missile recovery site in support of Tomahawk weapon system testing and training. The Navy is preparing an Addendum to the EA to address these activities.

An emergency termination area is used when an operational anomaly occurs that does not allow the missile to be flown safely to the designated landing site on the mainland. The proposed San Nicolas

Island recovery area would be used only when the missile is in full control and can be guided to ensure soft impact termination (i.e., parachute recovery). Proposed activities would include soft landing of a Tomahawk missile an average of once per year, associated chase aircraft overflights at the island, temporary closure of some roads on San Nicolas Island, retrieval of the missile, and transport back to the mainland. There is no geographic overlap between the proposed recovery area or underwater launcher and the activities addressed in this EIS/OEIS. None of the proposed facility modernizations would be located within this area.

5.2.1.6 Inert Ordnance Delivery Area at San Nicolas Island

NAWCWPNS Point Mugu has identified the need to establish an inert ordnance delivery area on San Nicolas Island. While the inert ordnance delivery area would typically be used in conjunction with Fleet training exercises (FLEETEXs), the area would also be used during joint task force exercises and for independent training activities. Ordnance used at the inert ordnance delivery area would be limited to MK-76 inert bombs, inert bomb delivery unit (BDU)-33s and -46s, and inert laser guided training rounds which would use a laser targeting system to identify the target(s). Ordnance would be delivered from Navy and Marine Corps fixed-wing aircraft (typically F-14s and F-18s). In addition, some training scenarios would include the use of helicopters (typically HH-60s). The proposed inert ordnance delivery area would be used approximately 10 times per year. There is no geographic overlap between the proposed recovery area or underwater launcher and the activities addressed in this EIS/OEIS. None of the proposed facility modernizations would be located within this area.

5.2.1.7 San Nicolas Island Supply Pier

The U.S. Navy (NAVAIR) has proposed to construct a Supply Pier at San Nicolas Island. Implementation of Military Construction (MILCON) Project P-250 would result in the establishment of a permanent pier structure and ancillary facilities (e.g., utilities, staging area, and administrative offices) at Daytona Beach. The San Nicolas Island Supply Pier would preclude the need for continuation of current barge landing operations at Daytona Beach, resulting in reduced human-marine mammal interaction, improved personnel safety conditions, and more reliable supply services at the island. Although temporary adverse impacts have been identified (e.g., habitat disruption during construction), measures that would reduce impacts to levels below significance thresholds would be implemented and no significant impacts would occur. Cumulatively, resources within the same ROI would be affected; however, proposed actions on San Nicolas Island assessed in this EIS/OEIS would occur at different times and would be geographically separate from activities associated with the proposed Supply Pier. Further, no significant, unmitigable impacts have been identified for either project.

5.2.1.8 E-2C Aircraft Parking Apron Extension at NAS Point Mugu

An EA is being prepared to analyze the potential impacts of a proposed aircraft parking apron extension at NAS Point Mugu. Implementation of the proposed action would provide sufficient parking for 12 E-2C aircraft that would result in increased aircraft longevity, maintenance efficiency, aircraft security, operational and maintenance safety, and combat readiness of the E-2C fleet. The following components are included as part of the proposed action: 1) demolition of existing concrete building slabs, one small concrete block building, and fences; 2) addition of 20,757 square yards (4.3 acres) of concrete to extend the aircraft parking apron; 3) placement of a culvert underneath the apron to replace an existing drainage ditch; 4) relocation of apron-to-taxiway lighting; and 5) installation of catch basins to control storm runoff. Following implementation of the proposed action, 12 E-2C aircraft could be parked in a single location directly in front of Hangar 553. The resulting apron extension would provide sufficient room for parking two rows of six aircraft each without their wings folded. The remaining four

E-2Cs plus an inoperable trainer would continue to be parked within Hangar 553. There is no geographic overlap between the proposed aircraft parking apron extension and activities addressed in this EIS/OEIS. The proposed facility modernization at NAS Point Mugu would not be within this area, and there would be no change to the frequency or type of aircraft operations at the airfield.

5.2.1.9 Range Operations Center Addition, NAS Point Mugu

Construction project P-031 includes a 29,740 square foot (2,763 square meter) two-story addition to the existing Range Operations Center (Building 53). The project also includes correction of structural and seismic deficiencies, removal of trailers, and installation of utilities and site improvements. A Categorical Exclusion Documentation Form (Catex Number 00-53) states that the proposed action has been found not to have a significant effect on the human environment individually or cumulatively (Construction Battalion Center [CBC] Environmental Division 2000).

5.2.2 Air Force Projects

5.2.2.1 Vandenberg Air Force Base Ongoing Operations

Vandenberg Air Force Base (VAFB) occupies approximately 98,400 acres (39,822 ha) on the south-central coast of California, about 50 miles (80 km) northwest of Santa Barbara (refer to Figure 1-2). As headquarters for the 30th Space Wing, the Air Force's primary missions at VAFB are to launch and track satellites in space and test and evaluate strategic intercontinental ballistic missile (ICBM) systems. VAFB activities have the potential to affect other areas due to flight paths and trajectories of test vehicles and launches. Since the launch operations do not occur within the ROI of the proposed action and alternatives addressed in this EIS/OEIS, there would be no cumulative contribution to effects on the Point Mugu Sea Range from VAFB launches.

The 30th Space Wing conducts west coast space and missile launch operations using a variety of launch vehicles, including the Minuteman III, Peacekeeper, Titan II, and Titan IV (for comparison purposes, a launch vehicle typically used at VAFB, the Minuteman III, is approximately 50 feet [15 m] tall, more than 20 feet [6 m] taller than the Vandal target used on the Point Mugu Sea Range). To achieve a polar launch (i.e., which would place the launch vehicle into a polar orbit), a southerly launch trajectory is required. To achieve an equatorial launch, a western launch is required. Since these missiles affect the scheduling of other operations on the Sea Range, NAWCWPNS Point Mugu provides tracking support, back-up command destruct capabilities, and scheduling support for all west-bound launches. The VAFB missiles are normally long-range ballistic missiles whose flight paths pass above airspace typically used for Sea Range operations. Since these missile operations occur in airspace exclusively at high altitudes (above 100,000 feet [30,500 m]) and do not impact the Sea Range, there are no cumulative impacts with current Sea Range operations. In consideration of the proposed accommodation of Theater Missile Defense (TMD) testing and training, since NAWCWPNS Point Mugu has the scheduling authority for both those VAFB launch operations that affect Sea Range airspace within the warning areas and also for the TMD events, operations would always be scheduled to assure no overlap in time or airspace.

5.2.2.2 Proposed Evolved Expendable Launch Vehicle Program, Vandenberg Air Force Base

Currently, VAFB launches a variety of launch vehicles from a number of launch sites. The U.S. Air Force (USAF) is considering participation in the continued development and deployment of Evolved Expendable Launch Vehicle (EELV) systems to replace current Atlas IIA, Delta II, Titan II, and Titan IVB launch systems. An EIS has been prepared to address this proposal. The proposed action would not represent a noticeable change from current and past VAFB activities; proposed EELV launches would be

conducted at the same azimuth altitudes as are typical of VAFB operations. The changes are site-specific to the installation itself. Since effects of the EELV program would not occur in the same ROI as the proposed action and alternatives identified in this EIS/OEIS, there would be no cumulative contribution to effects on the Point Mugu Sea Range.

5.2.2.3 F-22 Low-Level Supersonic Over-Water Testing

The USAF proposes to test the F-22's ability to perform low-level flight maneuvers at supersonic speeds and to determine what, if any, maintenance concerns result from testing in an ocean environment. The proposed action is to conduct up to an average of 24 low-level supersonic sorties per year over open ocean areas within the Point Mugu Sea Range and in adjacent airspace off the coast of California. Flight tests would involve use of one F-22 aircraft, an F-15 or F-16 as a chase aircraft, and tanker aircraft for aerial refueling. The USAF prepared an EA to address potential impacts of the proposed action (USAF 2000). A FONSI was signed on 2 February 2000 stating that noise from these activities would not have significant impacts to marine mammals or other animals because noise levels would be within the range of those produced by existing aircraft using the Point Mugu Sea Range. The FONSI also stated that cumulative impacts of this action on the Sea Range would not be significant because the F-22 overflights would not result in a perceptible increase in noise levels on the range.

5.2.3 Other Projects

5.2.3.1 California State University Channel Islands Campus at Camarillo

The California State University (CSU) recently initiated the reuse of the former California State Development Hospital facilities in Camarillo as a new university campus in Ventura County (CSU Channel Islands). The CSU has relocated the Ventura Off-Campus Center from the City of Ventura to the former hospital and plans to eventually develop a 15,000 full-time equivalent student university campus. Currently, the 634-acre site contains approximately 1.6 million total gross square feet (gsf) of developed structures. At full build-out, proposed uses of the site include a public elementary school, day-care center, academic enhancement center, research/office space (340,000 gsf), food service, university support space, and recreational facilities. Student housing within the existing main campus buildings will serve up to 1,000 students, while 900 residential units will be developed within the project site. Reuse of the hospital for the Ventura Off-Campus Center with 1,500 full-time equivalent students began in summer of 1999, with expansion to 3,250 full-time equivalent students expected within 8 years. This initial phase involves the renovation of 12 buildings. It is anticipated that full build-out into a 4-year university serving 15,000 students and approximately 1,500 faculty and staff would occur after 2025.

The proposed action examined in this EIS/OEIS primarily involves activities on the Sea Range. No increase of personnel and no construction would occur at NAS Point Mugu. There is only minimal geographic overlap between environmental issues associated with the CSU and the proposed action addressed in this EIS/OEIS.

5.2.3.2 Construction Projects within the ROI

A variety of construction projects are proposed in Ventura County in the vicinity of NAS Point Mugu, as well as some minor construction projects directly on the base. These include renovation projects, residential projects, mixed use proposals for industrial, institutional, commercial, retail, educational, and residential uses, and one 18-hole public golf course at Camarillo Springs Regional Park. The proposed action primarily involves activities on the Sea Range, well offshore. Proposed construction projects at

NAS Point Mugu would not affect the facilities supporting Sea Range operations. There is only minimal geographic overlap between environmental issues associated with the Ventura County construction projects and the proposed actions addressed in this EIS/OEIS.

5.2.3.3 Hyper-X Research Vehicle Program

The National Aeronautics and Space Administration (NASA) proposed preflight preparation and test flight activities associated with the Hyper-X research vehicle program. The Hyper-X Research Vehicle is planned as a Mach-10 aircraft (i.e., an aircraft that can fly at speeds up to 10 times faster than the speed of sound). It could be used either for global-reach travel or to provide access to space vehicles. The proposed action would involve all facets of the Hyper-X program, including manufacturing, delivery, and wind tunnel testing. The portions of the program proposed for the Sea Range include B-52 taxi and captive carry flight tests, research vehicle booster release and splashdown, research vehicle free flight, and research vehicle splashdown. NASA prepared an EA to address potential impacts of the proposed action (NASA 1999). A FONSI was signed on 13 September 1999 stating that these activities would not individually or cumulatively have significant impacts to the environment in the Point Mugu Sea Range.

5.2.3.4 Shipping Channel Relocation

A proposal has been initiated to relocate the Southern California Shipping Channel 25 miles (40 km) south of its current location. This proposal is one aspect of several emission control strategies identified in Measure (M13) of the 1994 California Ozone State Implementation Plan (1994 SIP) to reduce emissions from ocean-going marine vessels and harbor vessels, not including those used for recreational activities.

The 1994 SIP identified M13 emission reductions as a "federal assignment" with U.S. Environmental Protection Agency (USEPA), International Maritime Organization (IMO), and U.S. Coast Guard as the responsible agencies. The 1994 SIP identified three potential emission reduction measures for M13: 1) IMO standards for new engines; 2) commercial ship traffic control measures, listing both relocating the Southern California Shipping Channel and reducing vessel speed; and 3) new engine standards for the Captive Fleet. The 1994 SIP M13 called for approximately 30 percent emissions reductions from 1990 levels by the year 2010.

Since November 1996, USEPA has periodically held "stakeholder" meetings to attempt to identify control measures by consensus. No formal decisions on these issues have been made. Various critical studies are currently underway analyzing the validity of the emission reduction claim from the proposed relocation and other measures. These studies include the Southern California Ozone Transport Study which is analyzing ozone transport pollution within the Southern California Bight and a Tracer Study which is analyzing emission transport from existing and proposed locations for the shipping channel. Preliminary Navy analysis indicates that a relocated ship channel would at best have a minor emission reduction (at the expense of other downwind onshore areas) and at worst may increase emissions into the South Coast Air Basin. The emission increase would be due in part to the approximately 20 NM (37 km) increase in transit distances created by the relocated channel.

The California Air Resources Board has created a technical working group to specifically analyze the speed reduction measure. Initial analysis indicates such a speed reduction measure would have substantial reductions in pollution. These reductions exceed those claimed in the 1994 SIP for the relocated shipping channel. Given this current status, the proposed relocation of the Southern California Shipping Channel is speculative and, therefore, is not yet reasonably foreseeable.

5.2.3.5 Channel Islands National Marine Sanctuary

Managed by the National Oceanic and Atmospheric Administration (NOAA), the Channel Islands National Marine Sanctuary (CINMS) is located 25 miles (40 km) off the coast of Santa Barbara. It encompasses 1,252 NM^2 (4,294 km^2) surrounding the five northern Channel Islands. Sanctuary boundaries extend from mean high tide to 6 NM (11 km) offshore surrounding Anacapa, Santa Cruz, Santa Rosa, San Miguel, and Santa Barbara islands. The CINMS was established in 1980 in accordance with Title III of the Marine Protection, Research, and Sanctuaries Act of 1972. The main objectives of the Sanctuary are to protect biological, cultural, and historical resources. A management plan for the Sanctuary was completed and went into effect in 1982. This plan is currently being revised and an EIS is being prepared to analyze potential environmental impacts of the revised management plan. The draft EIS and management plan have not yet been published; it is therefore difficult to determine what changes to the Sanctuary may occur and the impacts of such changes upon proposed activities addressed in this EIS/OEIS. Several boundary concepts have been proposed that include significant expansion of the Sanctuary into the Sea Range. None of the proposed activities addressed in this EIS/OEIS would be located within existing CINMS boundaries. However, several of the boundary expansion concepts being considered would encompass proposed activities addressed in this EIS/OEIS. Expansion could have an impact on Sea Range activities, particularly if Sanctuary regulations related to military activities are changed to limit existing or proposed activities.

5.2.3.6 Minerals Management Service Exploratory Drilling

The Minerals Management Service (MMS) has proposed to conduct exploratory drilling in federal waters offshore Santa Barbara County and is preparing an EIS to evaluate the potential environmental impacts of their proposed drilling projects. The projects include sequential drilling of 5 to 8 delineation wells from a single mobile offshore drilling unit on existing leases in federal Outer Continental Shelf waters in the Santa Maria Basin and western Santa Barbara Channel. The purpose of the drilling is to further delineate oil and gas resources on leases or units that have previous commercial discoveries of oil and gas. In addition to addressing potential cumulative impacts from other activities in the area, the EIS will include a discussion of the potential impacts of the buildout of production facilities. All platform proposals would be subject to full environmental review, and the earliest any platform would be installed is 2006. The exploratory drilling Draft EIS is scheduled for completion in summer of 2001.

Although the proposed Santa Barbara Channel exploratory drilling area is located north of the northern Channel Islands and outside Point Mugu Sea Range boundaries, the delineation wells proposed for the Santa Maria Basin are located within the Sea Range, in the vicinity of range areas M1 and M2 (refer to Figure 1-2). It is expected that MMS's Draft EIS will address the potential for cumulative impacts from their proposed drilling activities in combination with Navy Sea Range operations; however, cumulative impacts are unlikely given the very different nature of activities involved. In addition, offshore oil and gas platforms currently exist within Sea Range boundaries and specific safety procedures ensure that non-participants, including oil and gas platforms, are not endangered by Navy activities. Therefore, potential cumulative impacts would be less than significant.

5.2.3.7 Marine Vessel Noise

In addition to the specific projects and activities examined with respect to the potential for cumulative impacts, this chapter includes a discussion of potential impacts on marine mammals resulting from additional ship noise. Since concerns about the potential effects of noise in the ocean have increased in recent years, the following discussion addresses the potential for additive noise effects resulting from additional Navy operations associated with the proposed action.

Navy vessels account for only about 9 percent of the vessel traffic on the Sea Range (refer to Appendix D). The Sea Range is open to commercial and private vessel traffic and is widely used by non-Navy vessels. There is no evidence that occasional ship and boat traffic causes biologically significant disturbance to pinnipeds or dolphins in open water (Richardson et al. 1995a). Harbor porpoises often show local avoidance of vessels, but harbor porpoises are mainly confined to nearshore waters inshore of the northern part of the Sea Range where Navy vessel traffic is infrequent. Dolphins frequently *approach* ships to ride the bow wave. Therefore, cumulative impacts of disturbance from ships and boats on pinnipeds and dolphins would be less than significant.

However, ships in the Sea Range (including those that are part of proposed Navy activities) produce sufficient underwater noise to cause short-term changes in baleen whale and sperm whale behavior, and localized displacement of these whales, if the ships approach the whales. Reactions are most pronounced if the ships are moving rapidly and either directly toward the whales or with variable course and speed (Richardson et al. 1995a). These whales may react to multiple vessels working in the same area at longer distances than they would react to a single vessel (Koski and Johnson 1987; Richardson et al. 1995a). Individually identifiable bowhead whales (a baleen whale species) displaced from a feeding area by vessel disturbance have been observed to return and resume feeding within 1 day (Richardson 1987; Richardson and Malme 1993). Also, baleen and sperm whales often show little reaction to ships or boats if the vessel is moving slowly at constant speed on a constant course. While on the Sea Range, Navy vessels and larger commercial vessels spend only a minority of their time traveling at high speed and/or on variable courses, and do not normally continue to operate at the same location for longer than the time required to transit through that area. Therefore, sperm whales and baleen whales, such as the blue or fin whales that occur west of San Nicolas Island in summer (refer to Section 3.7.2.2), may sometimes be displaced temporarily by approaching vessels, but these whales are not likely to be deterred from any one area for more than 1 to 2 days. The number of baleen or sperm whales that may be affected is highly variable, but any disturbance is temporary and is not considered biologically significant. Therefore, cumulative impacts of disturbance to baleen whales and sperm whales by commercial vessels and Navy ships and boats operating on the Sea Range would be less than significant.

5.3 CUMULATIVE IMPACTS

This section addresses the additive effects of the Preferred Alternative in combination with the projects identified in Section 5.2. No significant impacts have been identified for the Preferred Alternative in this EIS/OEIS. Since environmental analyses for many of these projects are not complete and quantitative data are not available, cumulative impacts have been addressed qualitatively and are described below.

5.3.1 NAS Point Mugu

Specific components of the Preferred Alternative at NAS Point Mugu are geographically separate from the other projects on base (VR-55 Reserve Squadron, Aircraft Apron Extension, and the Range Operations Center Addition). Only one project (VR-55 Reserve Squadron) would involve aircraft operations, but any increase would be negligible with respect to the total number of aircraft operations currently conducted at the airfield. For these reasons, cumulative impacts at NAS Point Mugu would not be significant.

5.3.2 San Nicolas Island

Cumulative projects planned for San Nicolas Island include Tomahawk Testing and Training, Inert Ordnance Delivery, and Supply Pier construction. Activities associated with these projects would be

focused on the mesa south of the airfield and at Daytona Beach, all on the eastern portion of the island. Geographic overlap with the Preferred Alternative is minimal because construction activities associated with the Facility Modernization Element would occur on the western portion of the island. Missile and aircraft overflights associated with the Preferred Alternative (Nearshore Intercept) would occur about eight times per year along the northern and southern shorelines of the island, which would partially overlap with planned overflights for the Tomahawk Testing and Training and the Inert Ordnance Delivery. However, Tomahawk Testing and Training would occur an average of only once per year and would not affect the overall noise environment. Overflights associated with Inert Ordnance Delivery would occur about 10 times per year, but these overflights would not occur at low altitudes and are not anticipated to result in noticeable increases to average noise levels at the island. For these reasons, cumulative impacts at San Nicolas Island would not be significant.

5.3.3 Point Mugu Sea Range

There is only minimal geographic overlap between the Point Mugu Sea Range and the SCIRC (a portion of the SOAR overlaps a small portion of the Sea Range). An EIS/OEIS is currently in progress that will address potential environmental impacts at the SCIRC. None of the alternatives addressed in this EIS/OEIS include new activities at San Miguel, Santa Rosa, or Santa Cruz islands, nor would any of the proposed activities occur within CINMS boundaries. None of the other projects identified in Section 5.2 would result in increased ordnance activities on the Sea Range, although some would involve aircraft overflights and some increased vessel activity. Projects involving geographic overlap with the Sea Range include Tomahawk Testing and Training, Inert Ordnance Delivery, VAFB Ongoing Operations, EELV, F-22 Low-Level Supersonic Over-Water Testing, Hyper-X Research Vehicle Program, MMS Exploratory Drilling, and the Shipping Channel Relocation. VAFB Ongoing Operations and EELV occur at very high altitudes and would not contribute to cumulative impacts. The F-22 and Hyper-X activities have received FONSIs stating that they would not individually or cumulatively contribute to impacts on the Sea Range. Overflights associated with Tomahawk Testing and Training and with Inert Ordnance Delivery would occur collectively about 11 times per year in the vicinity of San Nicolas Island. However, these overflights would not occur at low altitudes and are not anticipated to result in noticeable increases to average noise levels at the island. Potential cumulative impacts from MMS's proposal to conduct exploratory drilling would be less than significant due to the differing nature of activities involved and established Sea Range safety procedures. The Shipping Channel Relocation is speculative and, therefore, is not yet reasonably foreseeable. For these reasons, cumulative impacts on the Sea Range would not be significant.

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