

**Endangered Species Act - Section 7 Formal Consultation**

**Biological Opinion**


**United States Navy Explosive Ordnance Disposal Training  
Operations, Puget Sound; Whidbey Island, Island County,  
Washington.**

**Agency:**

**US Navy  
Navy Region Northwest  
Silverdale, Washington**

**Consultation Conducted By:**

**U.S. Fish and Wildlife Service  
Western Washington Fish and Wildlife Office**

  
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Date

## BIOLOGICAL OPINION

### Approach to the Jeopardy Analysis

To conduct a jeopardy analysis, we evaluate the following for bull trout and murrelets: (1) the *Status of the Species*, which evaluates the rangewide condition, the factors responsible for that condition, and their survival and recovery needs; (2) the *Environmental Baseline*, which evaluates the condition in the action area, the factors responsible for that condition, and the conservation role of the action area; (3) the *Effects of the Action*, which determines the direct and indirect impacts of the proposed Federal action and any interrelated or interdependent actions; and (4) the *Cumulative Effects*, which evaluates the effects of future, non-Federal activities in the action area.

### DESCRIPTION OF THE PROPOSED ACTION

For the purposes of this consultation, the proposed action is the ongoing Navy's EOD Training Operations in Washington State's Puget Sound. The duration of this consultation will be from the date of signature of this Biological Opinion (BO) through December 31, 2009. The purpose of the training is for personnel to meet and maintain requirements for basic proficiency in combat and non-combat EOD Mine Countermeasures readiness. The training consists of using explosive charges to destroy or disable inert mines that are either underwater or floating on the surface.

The Navy originally proposed to conduct their EOD training in four areas. These locations are associated with the Navy installations in Puget Sound at Crescent Harbor, Holmes Harbor, Port Townsend Bay, and Bangor in northern Hood Canal. However, the Navy has determined that through December 31, 2009, EOD training will only occur at Crescent Harbor. Therefore, this consultation is specific to the training at Crescent Harbor. The Crescent Harbor training area is on the east side of Whidbey Island, next to the Naval Air Station (NAS) Whidbey Island Seaplane Base.

### General Training Procedures

In general, each underwater training exercise entails placing an inert mine, locating the mine with hand-held sonar, placing a charge near the mine, attaching of detonation equipment, detonation of the charge, retrieval of debris, and in-water inspection of the detonation site. In some of the exercises, a disabled mine is raised and moved ashore for dismantling and inspection. After the detonation, the divers retrieve debris, which consists mainly of pieces of the mine (the explosive is consumed in the explosion).

Prior to any detonation, two Navy workboats will patrol the training range within a specific radius of the detonation site in order to determine the presence of mariners (water users), marine mammals, and birds. The radius of the survey for all training exercises will be 1,640 ft (ft) [500 meters (m)]. If any mariners, marine mammals, or birds are observed within this range, the

training exercise will either be cancelled for the day or delayed until the vicinity has been cleared.

An inert mine is placed by the training unit operating from a small, outboard powered boat, generally 16 to 22 ft (4.9 to 6.7 m) long. Two divers locate the mine using hand-held sonar with a range of approximately 360 ft (109.7 m). The location of the mine is then marked with a small buoy. The boat then proceeds to a nearby beach on Navy property to pick up the explosive charge from a land-based team that assembled the explosive. This transfer site is chosen to be away from pedestrian and vehicle traffic and the magazine area. In Crescent Harbor, it is located near Polnell Point on the east shore of the harbor. The boat then proceeds back to the location of the mine for placement and detonation of the explosive.

Training events may occur throughout the year and are not dependent upon weather; therefore, the training events may occur under all possible weather and sea-state conditions.

The explosives used in the training are either C-4 or A-3. C-4 (MIL-C-45010A) is a combination of 91 percent Royal Demolition Explosive (Hexahydro-1,3,5-trinitro-1,3,5-triazine) and 9 percent polyisobutylene. A-3 (MIL-C-440B) is composed of 91 percent Royal Demolition Explosive and 9 percent wax.

#### Underwater Detonations

Prior to placement and detonation of the explosive, the mine is lowered to the seafloor. Placing the mine and explosive on the seafloor minimizes the explosive impacts into the water column. The two divers place the charge immediately adjacent to the mine. The charge has an attached detonation cord, of which the free end, called the primary loop, is attached to one of two small floats on the surface. The second small float contains the initiator which consists of two blasting caps that are attached to the primary loop on the first float (the initiator, blasting caps, and detonation cord are done in duplicate to minimize false firings).

All detonations will be initiated manually. With the manual procedure, a diver pulls two pins at the initiator. In this case, the initiator includes a length of slow-burning fuse, (called the time train) that delays the detonation by approximately eight to ten minutes to allow time for the divers to board a boat and move to a safe distance from the detonation site. With this manual procedure, the detonation cannot be interrupted once it has been initiated.

After the detonation, boats return to the detonation site. All surface debris, consisting mainly of floats and attached equipment, is retrieved. The divers retrieve some debris from the seafloor, which consists mainly of pieces of the mine. In cases where the mine is only intentionally disabled, not destroyed, the mine is taken ashore for dismantling and inspection. The training mine is inert and does not contain any explosive material.

Underwater detonations at Crescent Harbor through December, 2009, will be limited to 2.5 pound (lb) [1.1 kilograms (kg)] charges of C-4. The 2.5-lb (1.1-kg) explosive is for training purposes simply to demonstrate capability to set the charge, detonate the explosive, and destroy the inert mine. Detonations will occur between 1,100 ft (330 m) and 7,200 ft (2,200 m) from the



nearest shoreline at a depth of 40 to 100 ft (12.2 to 30.5 m) on sandy or muddy bottoms. Through December, 2009, 6 underwater detonations may occur at Crescent Harbor (Table 1).

#### Surface or Floating Mine Detonations

Two swimmers attach a 2.5-lb (1.1-kg) charge to a mine simulated by a clean metal 55-gallon drum (with 1 to 2 sand bags placed inside for ballast) free floating at the surface. The explosive is placed on top of the 55-gallon drum so that the explosive is entirely out of the water. The explosive has a short length of detonation cord attached, called the primary loop. A small float that contains the initiator, which consists of two blasting caps, is attached to the primary loop of the explosive (as with the underwater detonations, the initiator and blasting caps are done in duplicate to minimize false firings). The swimmers initiate the detonation manually by pulling two pins on the initiator. The initiator has a slow-burning fuse that delays the detonation by approximately 10 minutes to allow time for the swimmers to board the insertion craft. This process is the same as with the underwater detonations.

The swimmers may be inserted via helicopter or small boat. About 50 percent of the floating mine training insertions are completed with a helicopter and the other 50 percent by boat. Helicopter involvement is fair-weather dependent. Boat insertion would be similar to the method described above. The helicopter (a MH-60 Sierra with a 54-inch total blade length) takes off from Ault Field located on NAS Whidbey Island, flying at an elevation of about 500 ft (152.4 m) and approaches Crescent Harbor from the north and flies around the harbor going about 70-80 knots looking for a float mark that identifies the simulated mine. The helicopter slows to less than (<) 1 knot and hovers about 10 to 20 ft (3.0 to 6.1 m) above the water for insertion of the swimmers. The helicopter then flies to the survival area (NW shoreline of the Seaplane Base) where it waits for the charge to be set. The swimmers are extracted by helicopter on approximately 25 percent of these training exercises and by boat the other 75 percent of the time. Through December, 2009, 4 surface detonations may occur at Crescent Harbor (Table 1).

Table 1 Schedule of surface and underwater detonations at Crescent Harbor through December, 2009.

Date	Number of Events	Type of Detonation	Maximum Size of Charge
October 2008	1	Surface	2.5 lbs
November 2008	1	Underwater	2.5 lbs
December 2008	0		
January 2009	0		
February 2009	3	Underwater	2.5 lbs
March 2009	0		
April 2009	2	Surface	2.5 lbs
May 2009	0		
June 2009	1	Surface	2.5 lbs
July 2009	2	Underwater	2.5 lbs
August 2009	0		
September 2009	0		
October 2009	0		
November 2009	0		
December 2009	0		
Total	10		

### Conservation Measures

The conservation measures described here and in the consultation initiation package are considered part of the proposed action and are intended to reduce or avoid adverse effects on listed species and their habitats. The Service regards these conservation measures as integral components of the proposed action and expects that all proposed project activities will be completed consistent with these measures. We have completed our effects analysis accordingly.

- Pre-explosion surveys (via boat) will be conducted in accordance with the Protocol Monitoring for Sea Birds for EOD Training Exercises (Appendix A). The radius of the survey range will be no less than 1,625 ft (500 m). The explosive will be detonated only when the sea birds are not observed in the survey area.
- A monitoring plan will be implemented to provide estimates of fish mortalities related to EOD training (Appendix B). Reports will be submitted annually to the Service.

### Action Areas

The action area is defined as all areas to be affected directly or indirectly by the Federal action and not merely the immediate area involved in the action (50 CFR § 402.02). In delineating the action area, we evaluated the farthest reaching physical, chemical, and biotic effects of the action on the environment.



The basis for defining the aquatic portion of the action area was the distance at which underwater sound associated with the underwater detonations either intersects with a land mass or where it attenuates to background levels. In Crescent Harbor, the action area was defined by the distance where the sound intersects with a land mass. In the action area, the distance at which the underwater sound intersects with a land mass is less than the distance at which it would otherwise attenuate to background level.

The terrestrial portion of the action area is defined by the property lines of NAS Whidbey Island Seaplane Base. Polnell Point is also included in the terrestrial portion of the action area as this is the transfer location for the divers. The terrestrial portion is where operations of helicopters for the insertion and extraction of the divers would occur.

The Crescent Harbor action area is bounded on the west by Whidbey Island and the east by Camano Island (Figure 1). The southern end is a line drawn between East Point, located just east of Holmes Harbor, north to Lowell Point on Camano Island. The northern extent is a line drawn due west from the South Fork of the Skagit River to Strawberry Point on Whidbey Island and the surrounding shoreline. Specific waters include Penn Cove, Crescent Harbor, Oak Harbor, the southern end of Skagit Bay, and the northern portion of Saratoga Passage. Saratoga Passage is bounded by Whidbey Island on the west and Camano Island on the east. The Crescent Harbor action area is located in Island County. The action area is approximately 239 km<sup>2</sup>.

Crescent Harbor is an arc-shaped embayment located between Forbes Point and Polnell Point on Whidbey Island, at the north end of Saratoga Passage. The bathymetry of this southward-facing embayment is characterized by a gently sloping bottom along the west and east sides of the harbor which reaches its deepest point in a central valley. Water depths range to a depth of approximately -120 ft Mean lower low-water (MLLW) within the central valley of the embayment (NOAA 1989). At this point, water depths rapidly increase to the deeper waters of Saratoga Passage. The shallow subtidal areas near Forbes Point and Polnell Point consist of rock and boulders. Nearshore intertidal areas (less than -9.8 ft MLLW) are composed of gently sloping sandy beaches or mud flats. Seawalls are located on the west side of Crescent Harbor to protect structures built for the Seaplane Base at NAS Whidbey Island. The NAS Whidbey Island, near Crescent Harbor's test site intertidal area, is characterized by gentle to moderate slopes and is composed of sand beaches and mud flats (EA Engineering, Science, and Technology 1996).

South of Crescent Harbor, within Saratoga Passage, water depths drop off more rapidly from the shore, and water depth increases toward the south end of the Crescent Harbor action area, reaching depths of approximately -420 ft MLLW.

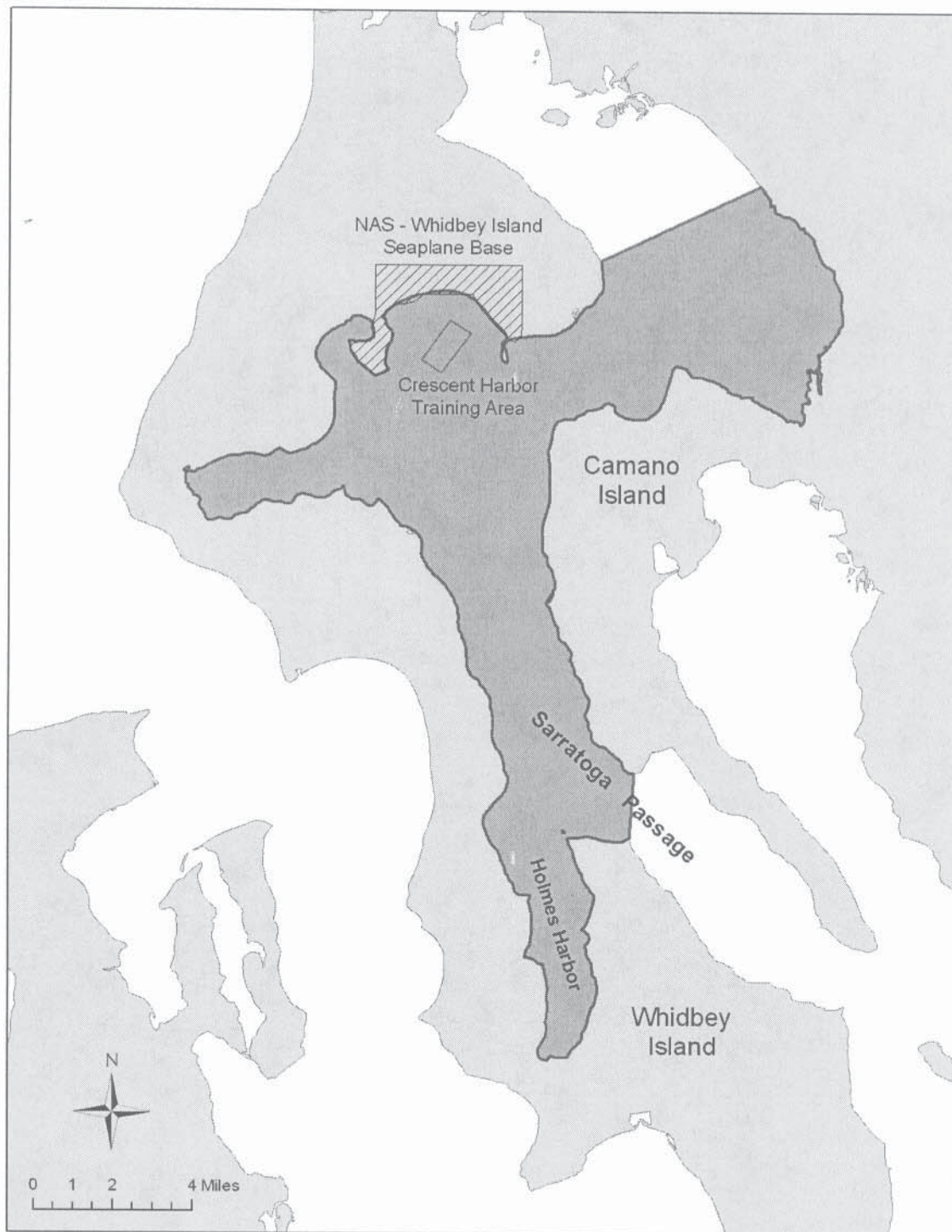


Figure 1 Location of the Crescent Harbor Action Area.