



Fish and Wildlife Service  
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United States Department of the Interior  
Fish and Wildlife Service  
United States Department of Commerce  
National Marine Fisheries Service



National Marine Fisheries Service  
7600 Sand Point Way N.E.  
Lacey, Washington 98503

COPY FOR YOUR  
INFORMATION

APR 18 2002

Robert M. Campagna  
Assistant Chief of Staff for Environment and Safety  
Department of the Navy  
Navy Region Northwest  
1103 Hunley Rd.  
Silverdale, Washington 98315-11030

Re: Biological Assessment; U.S. Navy Explosive Ordnance Disposal Operations; Puget Sound, Washington. (FWS Reference #1-3-01-I-0584)

Dear Mr. Campagna;

The U.S. Fish and Wildlife Service and National Marine Fisheries Service (Services) have reviewed your Biological Assessment (BA), dated January 2001, for the Explosive Ordnance Disposal (EOD) operations conducted at several locations in Puget Sound, Washington. The Department of the Navy determined that the proposed project "may effect, but is not likely to adversely affect," chinook salmon (*Onchorhynchus tshawytscha*), chum salmon (*O. keta*), and bull trout (*Salvelinus confluentus*). The Services do not concur with your determinations. For other species addressed in the BA, the Services will analyze potential effects when all requested information has been received.

The Services believe that the proposed action has the potential to adversely affect chinook salmon, chum salmon, and bull trout because:

1. The proposed action has a high likelihood of causing direct mortality of these listed species.
2. The underwater detonation results in significant mortality of prey species.

Based on our understanding, the proposed action is designed to train and certify divers for deployment into the field with battle groups. We appreciate the importance of this activity, especially the training of personnel in the most realistic setting. In discussions in the field and in meetings with Navy personnel, we have obtained a fairly detailed "picture" of these operations.

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As part of the training, explosives are detonated underwater. An unavoidable consequence of these detonations is that many fish are killed. During the field demonstration, using a five-pound charge, we observed approximately 1000 dead fish, mostly surf smelt (*Hypomesus pretiosus*), at the surface shortly after the blast. This is of concern to us for two reasons. First, the fish that were observed have swim bladders and it appeared that the cause of death was rupture of this organ. Chinook salmon, chum salmon, and bull trout all have swim bladders and may be similarly killed by underwater detonations. Based on scientific literature, less than 20 percent of the impacted fish will be seen at the surface, thus the actual number of mortalities may have been greater than 5000 for a five-pound charge. The number of fish killed would be much greater with a 20-pound charge. On average, five, but not less than three, training exercises involving underwater detonation occurs per month. Therefore, the number of fish killed per month, depending on the season, may be quite large.

To address these concerns, we have compiled a list of possible options that might be undertaken to eliminate, or reduce, negative impacts to the listed species:

1. Conduct the actual explosive part of the training in controlled circumstances, underwater, where fish are not present such as a lake or rock quarry.
2. Move the training out into the Strait of Juan de Fuca, or the ocean, about a mile offshore.
3. Lift the mine to near the surface before detonation and surround it with a bubble curtain.
4. Dig a permanent pit in the substrate, for a steel or concrete box-type structure, to contain most of the blast energy.
5. Compensate for the mortalities through restoration of nearby habitat.
6. Conduct studies with the following objectives:
  - a. Monitor to quantify the number and species of mortalities.
  - b. Determine empirically the lethal and sub-lethal distances from the detonation.
  - c. Determine the best, non-harmful way to frighten fish away from the blast area prior to detonation.
7. Implement timing restrictions on explosive detonations to avoid times when listed fish are likely to be present.
8. Some combination of the above, e.g. 5 & 6.

The Services are open to any additional suggestions, or actions, that will eliminate or reduce negative impacts to listed species.

In addition to the above concerns we also hope the consequences of this activity can be minimized through the detonation of fewer explosives (particularly the 20 pound charges) and timing restrictions.

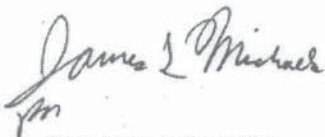
We would appreciate a response as to whether the Department of the Navy is willing to implement any of the above options to assist in completing this consultation. We propose that the Biological Opinion will be for a period of three years while studies currently underway can be completed to better understand the migration patterns and habitat use of bull trout and other



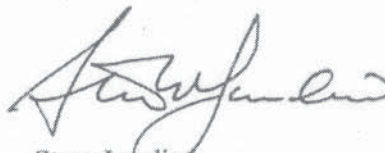
listed fish in northern Puget Sound. Also, if you agree to conduct some, or all, of the above suggested studies the results can be incorporated into future training (and the next Biological Opinion), further reducing negative impacts to listed fish.

If you have any questions, or need further clarification regarding the above options, please contact Bob Donnelly with the National Marine Fisheries Service (206/526-6117) or Yvonne Dettlaff with the U.S. Fish and Wildlife Service (360/753-9582).

Sincerely,



Ken Berg, Manager  
Western Washington Fish and Wildlife Office  
U.S. Fish and Wildlife Service



Steve Landino,  
Washington Habitat Branch Chief  
National Marine Fisheries Service

cc: Dept of the Navy, Poulsbow (R. Stoll)  
Jamestown S'Klallam Tribe, Sequim  
Lower Elwha Klallam Tribe, Port Angeles  
Lummi Indian Tribe, Bellingham  
Nooksack Tribe, Deming  
Port Gamble S'Klallam Tribe, Kingston  
Sauk-Suiattle Tribe, Darrington  
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WDFW, LaConner (R. Johnson, J. Klacen)  
Point No Point Treaty Council, Kingston  
Skagit System Cooperative, LaConner