

Appendix I: Report and Recommendations Management Measures for Three Arch Rocks

The Oregon Ocean Policy Advisory Council adopted this report on December 10, 1993, and subsequently requested that the State Marine Board implement a 500-foot seasonal boating closure area around Three Arch Rocks National Wildlife Refuge.

Setting

- **Location**

Three Arch Rocks National Wildlife Refuge is located about one-half mile offshore of Oceanside in Tillamook County, Oregon. It is approximately eight miles south of the mouth of Tillamook Bay, the nearest major port, and approximately two and one-half miles north of the mouth of Netarts Bay. The refuge, comprised of three large rocks and six smaller ones, totals about 17 acres.

- **Wildlife Resources**

Three Arch Rocks holds tremendous wildlife resources of importance throughout the northeastern Pacific region. Thirteen species of seabirds nest there, including some 220,000 common murrelets, the largest such colony south of Alaska, and some 2,000 to 4,000 Tufted puffins, the largest colony on the Oregon coast. Also among these bird species are three species of cormorants, two species of auklets, oystercatchers and pigeon guillemots. Federally-listed threatened and endangered birds use the rocks: Aleutian Canada geese and bald eagles are threatened species; California brown pelicans and peregrine falcons are endangered species.

Three species of marine mammals use the rocks for resting, breeding, or pupping. As many as four hundred Steller sea lions, a threatened species, use Three Arch Rocks and generally produce three to six pups at this location each summer.

This is one of Oregon's three breeding sites for Steller sea lions and the only such site on the northern Oregon coast. Because these animals have suffered tremendous population declines in the majority of their range in Alaska, the pupping and rearing habitat areas in the southern portion of their range through Oregon assume a much higher importance in maintaining overall populations than was previously the case. Some California sea lions are present from August through May and harbor seals find refuge here with pups that are born in nearby Netarts Bay and Tillamook Bay.

- **Human Use**

Three Arch Rocks is particularly attractive for a wide range of human activities because of its location, physical characteristics and biological resources. It is easily reached by boat from Tillamook Bay, the nearest principal marine boating center to the Portland metropolitan area. In good weather it is also accessible by boat, kayak, jet-ski, or sailboard launched from the beach or Netarts Bay. The rocks attract many boats for commercial and recreational fishing and diving

activities targeting rockfish inhabiting the associated submerged rocky reef habitat. The area has considerable aircraft traffic, including low-altitude private, military, and Coast Guard aircraft, and high-altitude commercial flights. All types of aircraft are seen including fixed-wing propeller and jet planes, helicopters, and even hang gliders.

Several trends point to an increase in certain kinds of boating activity at Three Arch Rocks. Because of its location and biologic richness, Three Arch Rocks has the potential to become a major wildlife watching or "eco-tourism" destination. As commercial and recreational salmon fishing declines, more recreational fishing interest will focus on rock fishing near the rocks and on wildlife or bird-watching trips. In order to protect the very resources that are at the heart of this attraction, this potential increase in boat traffic, especially close to the rocks, must be addressed in a positive, pro-active way that encourages responsible boating behavior, promotes marine wildlife conservation and learning, and sets a positive example for other users of the area.

- **Administration and Jurisdiction**

Three Arch Rocks National Wildlife Refuge was established in 1907 and is the oldest such refuge in the western U.S. It is administered by the U.S. Fish and Wildlife Service as both a National Wildlife Refuge and a designated Wilderness area. This federal management applies only to the rock areas above mean high water; surrounding ocean waters and portions of the rock below mean high water are under the jurisdiction of several agencies of the State of Oregon. Human trespass on Three Arch Rocks is prohibited.

Several federal laws apply to the birds and mammals of Three Arch Rocks: the Endangered Species Act, the Marine Mammal Protection Act, the Migratory Bird Treaty Act, and the Wildlife Refuge Administration Act. Under the Endangered Species Act, the National Marine Fisheries Service has proposed to designate a critical habitat zone around "all Steller sea lion rookeries in state and Federally managed waters off Washington, Oregon, and California, including the zone that extends 3,000 feet (0.9 km) vertical and seaward from each rookery." Designation of critical habitat does not, in itself, restrict human activities within the area or mandate any specific management action but does identify critically important areas that are essential to the species thus alerting the public to the area's importance. The Marine Mammal Protection Act prohibits the "take" of marine mammals under almost all circumstances and "take" is defined to include harassment no matter how inadvertent.

The State of Oregon has jurisdiction over the water and submerged lands around the rocks. The Oregon Division of State Lands has proprietary jurisdiction on behalf of the State Land Board for submerged rocks and reefs. The Department of Fish and Wildlife has authority to regulate fishing activity in ocean waters and has responsibility to protect marine habitat and wildlife. The State Marine Board has authority to regulate boating activity in waters of the state, including the territorial sea. The Ocean Policy Advisory Council has responsibility to prepare and adopt a plan for managing Oregon's territorial sea which must be then implemented by state agencies.

Wildlife Disturbance Concerns

During preparation of the Oregon Ocean Resources Management Plan 1988-1990, citizens and state and the U.S. Fish and Wildlife Service expressed concern over wildlife disturbance from human activities at Three Arch Rocks and a number of other sites along the coast. These concerns were vigorously repeated at workshops in the fall of 1992 conducted by the Ocean Policy Advisory Council. Concerns covered a wide range of disturbance events affecting both seabirds and marine mammals.

- **Biological Basis for Concern**

Common murrelets, Steller sea lions and other animals live and reproduce in dense colonies on the rocks. This life history strategy combined with disturbance problems can cause concern for population health. A single major disturbance event has the potential to disrupt or destroy the reproductive effort of a significant number of animals. Common murrelets lay eggs in exposed nests and continually occupy the nest until fledging to protect egg and chick. When frightened adult murrelets stampede from their nest, eggs or chicks can be easily dislodged to fall to the water below or become easy prey for gulls or crows. Likewise, large adult Steller sea lions, which weigh a half-ton or more, can crush small young pups during a panic rush to the water.

Even chronic, low-level disturbances can have an effect when animals constantly respond to stimuli that may or may not prove threatening. Eventually, they may abandon a site altogether. A human analogy might be tent camping in the landscape shrubbery at the entrance to a major shopping mall; not directly life-threatening but not a first choice when there are quieter, more remote alternatives. In this case, however, there are no alternative sites for these wildlife species.

The reproductive characteristics --the "strategy"-- of murrelets and many other seabirds make their populations vulnerable to human disturbance but make the consequences of disturbance difficult to detect immediately. These birds lay only one egg per year. If that egg hatches and the chick survives to adulthood, the bird will likely live twenty or more years. With large numbers of birds all subject to this strategy, the entire population can thus "afford" to lose a high number of individual chicks in a reproductive year in response to fluctuating ocean conditions and other environmental factors. The long life of adult murrelets and large numbers of the overall population will make up the loss over time and keep the population stable.

In fact, a high percentage of murrelet chicks naturally do not survive to become breeding adults. But when disturbance-related mortality is added to natural mortality rates each year over several years, the loss of the reproductive potential of these year-classes of young adults will be masked by the large overall size of the colony for perhaps six to ten years. At that time, as older birds die and fewer young adults are available to take their place, the gap in the age curve and loss of overall reproductive capacity of the colony will become apparent. Management strategies to recover bird populations are not easily developed or implemented. Prevention of population decline is thus the preferable alternative.

Five species listed by the U.S. Fish and Wildlife Service and National Marine Fisheries Service as threatened or endangered species use Three Arch Rocks. Bald eagle, Aleutian Canada goose, and Steller sea lion are listed as threatened; peregrine falcon and California brown pelican are

listed as endangered under federal law. The presence of these species places additional considerations on management measures that ensure protection of habitat and populations of these animals.

The Steller sea lion, in particular, is of concern to international, federal and state wildlife managers throughout the North Pacific region. A 3000-foot-wide critical habitat zone has been proposed by the National Marine Fisheries Service around Three Arch Rocks. Seal Rock, the haulout site at Three Arch Rocks, is extremely valuable because of its low profile above the water, which facilitates entering and exiting the water, and its wide platform that can accommodate both adults and pups learning necessary survival skills. This rock serves as a focal point for widespread foraging by adults who may range up to 30 kilometers in search of food. Boat and aircraft traffic around the haulout area can prevent animals returning from a long feeding trip from reaching the rock in a timely way and can interfere with normal learning activities of pups during a critical period.

- **Historical Context**

The problems of human interaction with marine birds and mammals on the Oregon coast must also be viewed in an historical context. Archaeological and biologic evidence indicates that many of the birds and mammals inhabiting Three Arch Rocks were once more widespread and have, in a sense, "retreated" to the relatively few isolated refuge sites in the face of increased development and human presence on the coast over the past one hundred years. Thus, from an historical habitat distribution perspective, these animals have no other alternative than Three Arch Rocks and similar rocks and islands along the coast. Oregon's coast is continuing to be developed making it highly unlikely that birds or mammals will find new or return to former shoreline habitats.

- **Regional Importance**

One other consideration relates to Oregon's offshore rocks and islands in a regional ecosystem context. Oregon's coastal habitat sites are regionally vital because neither the California coast nor the Washington coast offer the extent and kinds of habitat as Oregon. Birds migrate long distances (some from South America, others from Alaska) to reproduce on the Oregon coast. Steller sea lions have historically occupied a range from central California around the Pacific coastline through Alaska, the Aleutian Islands, to the Kurile Islands of Russia. Because of major declines in Steller populations throughout the heart of their range, likely related to major changes in sea lion prey base, the success of Steller sea lions on the Oregon coast takes on increased importance. Viewed in this context, there is an added responsibility for Oregon to protect offshore rock and island habitats.

Council Process

The Ocean Policy Advisory Council began to address rock and island protection concerns based on policies and recommendations in the 1990 Oregon Ocean Resources Management Plan and a specific directive of the 1991 Oregon Legislature.

The Council made an initial decision to resolve wildlife interaction problems through a process that assessed and responded to the unique circumstances of each area or site and that involved all affected parties. Three Arch Rocks is the first area to be examined and is a "case-study" for the Council.

The Council began work on Three Arch Rocks with a public meeting in January, 1993, in Tillamook to discuss the resource and use issues involved at Three Arch Rocks and to obtain comment from the public. The meeting was well attended and a diversity of comments and opinions were heard related to the severity and nature of the problems.

Also in January, 1993, the Council discussed the situation and decided that more comprehensive and thorough documentation of the activities around Three Arch Rocks was necessary to identify the nature of the problem and develop specific management measures to solve problems. The Oregon Department of Fish and Wildlife, in cooperation with the U.S. Fish and Wildlife Service, subsequently conducted a four month field program in the summer of 1993 to observe and document human activities and to collect biological information on seabirds and marine mammals.

Upon completion of this study in mid-September, 1993, a working group was convened to review the results of the ODFW/USFWS study and provide the Ocean Policy Advisory Council with recommendations to reduce disturbance and protect wildlife resources at Three Arch Rocks National Wildlife Refuge.

- **Three Arch Rocks Working Group**

A working group met October 4, 1993, in Tillamook. Those present included

Greg McMurray, Ore. Dept. Environmental Quality
Doug Davis, Owner, D & D Charters, Garibaldi
Neal Coenen, OPAC/Ore. Dept. Fish and Wildlife
Bob Bacon, Ore. Shores Conservation Coalition
Dave Haas, SCUBA diver/charterboat owner
John Markham, Tideriders SCUBA Club
Jan Mulholland, Tideriders SCUBA Club
Ray Baggarley, Oregon Pilots Association
Roy Lowe, U.S. Fish and Wildlife Service
Bob Bailey, OPAC/Ocean Program Coordinator
Tom McAllister, outdoor writer
Jerry Dove, OPAC/Tillamook County Commissioner
James Bond, City of Manzanita
Paul Donheffner, Director, State Marine Board
Don Christensen, State Marine Board member
Gary Viehdorfer, State Aeronautics Division
Robin Brown, Ore. Dept. Fish and Wildlife
Susan Riemer, Ore. Dept. Fish and Wildlife

Dave Pitkin, U.S. Fish and Wildlife Service
Capt. Chris Kisvardy, US Coast Guard Air Group

The working group heard and discussed a detailed report on the summer, 1993, observational study at Three Arch Rocks (summary below). The working group concluded that a 500-foot seasonal closure area, implemented through regulation and supported with an educational and informational effort, is needed, generally acceptable, and probably workable. The group did not resolve concerns about buoy markers and enforcement. The working group, through a staff paper, subsequently recommended to the Council the actions taken on December 10, 1993.

Three Arch Rocks Study, Summary

- **Study Methods**

Study was conducted for an average of 7.5 hours per day on 104 days from early May, 1993, to mid-September, 1993. A detailed observational protocol was used including establishing three concentric observation zones around the rocks: Zone One (0 to 500'), Zone Two (500' to 2000'), and Zone Three (beyond 2000').

To help determine the location of a boat within a zone, observers used a notebook of reference photographs of a Coast Guard vessel positioned 500 feet from the rocks at a series of stations around the rocks. Data were collected on type of vessel, activity, location, weather and sea conditions, visibility, aircraft type, aircraft lateral distance, altitude and flight direction, and wildlife disturbance events. Counts of seabirds and mammals were made. Disturbance events were recorded in one of three states:

Type 1: Alert (animals aware of disturbance & stop normal activity)
Type 2: Agitated (animals vocalize, make some movement)
Type 3: Threatened (animals leave the area).

Photographs and videotapes were made of representative activity in the area.

Observation Points and Zones Around Three Arch Rocks N.W.R.

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- **Boating activity and effects**

Private Boats

In general, private recreational vessels, whether fishing, diving, or sightseeing, accounted for the most activity within Zone One and generated the greatest number of wildlife disturbances (57, Types 1-3) across all zones. Included in this category are dive boats and sport fishing boats which together accounted for 34 of 39 (88%) of the most serious Type 3 disturbance events, all of which occurred in Zone One. The amount of time private fishing boats were observed in Zone One represents only 6.8% of their total time spent fishing in all zones.

Charter Boats

Very little charter boat activity took place in Zone One and was instead conducted almost entirely in Zone Two, between 500 and 2,000 feet. However, charter boats were judged responsible for five disturbance events, including four Type 3 events, all within Zone One .

Commercial Fishing

With one exception, commercial fishing vessels did not enter into Zone One. These vessels did not trigger any disturbance events from any zone.

Other Craft

Other kinds of boats were present around the rocks. Kayaks were observed sixteen times during eight days and triggered four disturbance events in Zone One, one Type 1 and three Type 2. Three jet skis were observed on one observation day and were responsible for one Type 2 disturbance event.

Summary

Out of sixty-eight Type 1, 2, or 3 disturbance events caused by vessels, all but one resulted from vessels within Zone One (within 500 feet of the rocks). Thirty-four involved birds only, twenty-four mammals only, and ten involved both birds and mammals. These disturbances were triggered by boats moving close to the rocks, boats at high speed, activity around and on the boats, loud noises, and various combinations of different activities.

• **Aircraft activity and effects**

Private Aircraft

Private aircraft accounted for the most aircraft activity and greatest number of disturbances at Three Arch Rocks. One-hundred-fifty private aircraft were observed flying under 1000' and were responsible for forty-nine disturbances, including five Type 3 events. Two-hundred-fifty-five private aircraft flew above 1000' and generated fourteen disturbance events. Of the one-hundred total aircraft-caused disturbance events, 63% were caused by private aircraft of which 52% were Type 1 disturbances.

Coast Guard

Coast Guard aircraft, primarily helicopters, were observed twenty-one times primarily at less than 1000' and caused thirteen disturbances: eight Type 1 and five Type 2.

Military

Seventeen military aircraft were recorded and caused fourteen disturbances, including four Type 3 events.

Other

Other aircraft included twenty two commercial aircraft, which generated four disturbance events and thirteen unknown aircraft which were heard but not seen. These unknown aircraft were responsible for six Type 1 disturbances.

Summary

Of the one-hundred total aircraft disturbance events, ninety involved marine mammals. The majority of Type 1 events were sea lions looking skyward for the source of noise. Sixty-three of these disturbances resulted from private aircraft.

Statistical results of the project are attached.

Management Considerations

- **Seasonal factors**

Although seabirds and marine mammals occupy Three Arch Rocks year round, breeding and rearing of young occurs between late April and mid-September. Thus regulations on boating activity could be applied seasonally during the critical reproductive season.

- **Existing Policies and Authorities**

Ocean Plan

The Oregon Ocean Resources Management Plan discusses the issues of protecting seabirds and marine mammals and includes a number of policies that provide a point of beginning for Three Arch Rocks. These policies include:

- promoting public awareness and appreciation of marine birds, marine mammals and their habitats; developing public education and interpretation programs; and preparing targeted information to specific ocean user groups, especially the fishing industry and recreational boaters.
- providing state protection to marine birds and mammals and to habitats critical to maintaining viable marine bird and mammal populations.
- adopting provisions in the Territorial Sea Plan to protect sensitive marine bird and mammal populations and provide for site-specific management programs.
- prohibiting activities around nearshore rocks and islands that threaten the continued viability of marine bird and mammal populations, especially threatened, endangered, and sensitive species in thirty-three sensitive habitat areas listed.
- supporting the use of nearshore rocks and islands for safe passage and anchorage where necessary to protect human lives.
- supporting both regulatory and non-regulatory approaches to resource management and protection.

State Law

The 1991 Oregon Legislature enacted ORS 196.408(3):

"State agencies which have jurisdiction over water areas, the seabed and resources adjacent to offshore rocks and islands shall coordinate with adjacent states and federal agencies to develop programs and regulations to manage uses and activities of ocean areas adjacent to coastal cliffs and offshore rocks and islands managed within the National Wildlife Refuge System."

Goal 19/Territorial Sea Plan

The Ocean Policy Advisory Council has previously adopted draft provisions of a Territorial Sea Plan that include policies and recommendations in a strategy for managing Oregon's rocky shores. Rocky shores are defined as including offshore rocks and islands because of their ecological association and connections to shoreline headlands and intertidal areas with associated rocks and submerged reefs. Management policies and measures for Three Arch Rocks and other offshore rocks and islands will become a subset of the rocky shores management strategy. The goal of this strategy is

"To protect the ecological values and coastal biodiversity within and among Oregon's rocky shores while allowing appropriate use."

Together, these policy directives provide a clear basis for the Council to take action with regard to Three Arch Rocks.

• **The Role of Information and Education**

Information and education is a necessary component of any program to solve wildlife disturbance problems at Three Arch Rocks and elsewhere. Education and information efforts will need to be targeted at a number of audiences, including:

- recreational boaters and fishermen, charter boat operators, commercial fishermen, divers, kayakers, private aircraft pilots and fixed-base operators through various specific communication efforts;
- the U.S. Coast Guard and military bases through more formalized, institutional communication and agreements;
- the general public through a variety of media and outreach pathways.

Information and education efforts should provide information about Oregon's seabirds and marine mammals, promote wildlife values, encourage personal responsibility and stewardship toward these resources and communicate specific regulations such as seasonal area restrictions.

These informational efforts should also be seen as a way to stimulate interest in and encourage demand for wildlife watching opportunities and should therefore be coordinated with tourism and travel promotion for the Oregon coast and the Tillamook area.

• **The Role of Regulation**

Regulations are an essential element in managing wildlife resources. They articulate the limits of personal behavior or activities, support and further associated educational efforts, and are a specific expression of the public's interest in the resource. Regulations, however, must have a clear purpose, be simply expressed and readily explained through information and education to the public and affected parties.

At Three Arch Rocks there is a need to reduce or eliminate boating activity and aircraft overflight within certain distances of the rocks during a specific time period. The ODFW/USFWS study clearly shows that boats within 500 feet and aircraft activity in the area can cause disturbance to wildlife. The critical time period is May 1 through Labor Day in early September, the reproductive season. The State Marine Board is the agency most appropriate to regulate boating activity; by contrast, the Fish and Wildlife Commission can only regulate fishing activity. Regulations for aircraft are more problematic and will involve the Federal Aeronautics Administration in the U.S. Department of Transportation. There is currently a 2,000-foot minimum altitude recommendation over all National Wildlife Refuges.

- **Protective Measures in Other Locations**

Wildlife protective buffer areas have been established in other rock and island situations and provide a frame of reference for Three Arch Rocks.

Rogue and Orford reefs, Oregon. In 1990 the Oregon Fish and Wildlife Commission enacted a 1000-foot commercial sea urchin fishery closure between May 1 and August 31 for Steller sea lion pupping sites on Pyramid Rock in Rogue Reef and Long Brown and Seal rocks in Orford Reef on the southern Oregon coast. These were instituted in cooperation with the sea urchin dive fishery. This closure has been marked with buoys placed during the season by the Oregon Department of Fish and Wildlife and is monitored and regulated in a cooperative arrangement with the urchin industry. Decreased disturbance and stabilized Steller sea lion populations appear to be a positive result of the closure. In summer, 1993, the OFWC instituted a 1000' sport fishing closure area around Pyramid Rock in Rogue Reef. No such closure was made at Orford Reef because of apparently low sport boat activity there.

Farallon National Wildlife Refuge. The Farallon Islands are some eighteen miles south-southwest of Point Reyes and about 28 miles west of the mouth of San Francisco Bay, and are part of the Gulf of the Farallones National Marine Sanctuary. The State of California has designated a 1 mile-wide area around the islands as a State Ecological Area. Specific regulations to protect common murrelets and Steller sea lions have been adopted for boats: a 300-foot seasonal closure March 15 to August 15, a 5-mph speed limit within 1000 feet, and noise restrictions for commercial dive boat engines and compressors. For aircraft: a 1000-foot minimum altitude within one nautical mile of the islands. The water boundaries are not marked with buoys. Wildlife observers are present on the islands continually in spring and summer and communicate via radio with vessels that approach too closely to advise them of the 300-foot wildlife restriction. There is no focused effort to contact boaters at marinas and inform them of the closure because of the relatively few who venture offshore.

Alaskan Steller sea lion habitat. In the Gulf of Alaska, Bering Sea, and Aleutian Islands, the National Marine Fisheries Service has established 3 nautical mile (nm) vessel no-entry zones around specific Steller sea lion rookeries and a 1/2 mile no-approach zone by land. The zones were established to reduce disturbance, accidents and incidental take of sea lions and to facilitate enforcement of prohibitions against shooting Steller sea lions. A temporary exemption is made for vessels transiting through the 3 nm no-entry zone for two rookeries but vessels are still required to stay at least 1 nm from the rookeries and they may not fish or set anchor within the 3 nm area.

No-trawl zones have been designated by NMFS within 10 nm of 37 Steller sea lion rookeries in the Gulf of Alaska, Bering Sea and Aleutian Islands as amendments to groundfish fishery management plans to reduce the risk of depletion of Steller sea lion prey near the rookeries. For 5 rookeries, seasonal 20 nm no-trawl zones have been established during winter and early spring when feeding by juveniles is crucial.

Protection Island National Wildlife Refuge, Washington. The State of Washington Department of Natural Resources has entered into a twenty-year no-fee lease agreement with the U.S. Fish and Wildlife Service to protect a 200-meter (600 feet) area around Protection Island near the mouth of Discovery Bay in the Strait of Juan de Fuca to protect harbor seal pupping areas and seabird colonies. The state has withdrawn the tidelands within this area to all public access except that approved by the USFWS. Waters in the area is not yet closed to all boating traffic which will need to be done through the U.S. Coast Guard.

• **Technical and Operational Considerations**

Spatial regulation of boat and aircraft traffic raises issues of whether and how to mark the desired boundaries or areas. Because there are difficulties and expenses involved in setting buoys or other markers, the following options are presented:

No markers or buoys. This option minimizes the physical fact of a boundary and instead relies on promoting responsible operating practices that reduce disturbance or avoid adverse effects on wildlife, one of which is staying back the prescribed distance. Enforcement would not be emphasized except for clear violations as when a boater runs through an arch or anchors next to a rock; these clear violations of the boundary would be easy to detect and, if desired, prosecute. The absence of buoys may present a problem of uncertainty to boaters and make enforcement of any boundary difficult. However, it is highly unlikely that Oregon or federal agencies are in a position to extensively patrol or vigorously enforce any boundary even if marked.

Buoys. One or more buoys, especially in key locations, would provide a sense of certainty to boaters about the location of any "buffer" or protective boundary. They would also provide clear boundaries for enforcement purposes and would be tangible evidence of the need to protect wildlife. However, buoys are expensive to purchase, place, and maintain. In addition, buoys can create the impression for an operator that once outside the boundary, any behaviour is acceptable. Buoys would be most effective as part of a package that includes information and education keyed to the need for and location of the buoys.

Findings

Based on this report of the Three Arch Rocks Working Group, the Ocean Policy Advisory Council finds that at Three Arch Rocks:

1. There are significant wildlife disturbance problems from human activities.
2. Wildlife disturbance from human activities have negative effects on the reproduction of seabirds and marine mammals, including threatened or endangered species, and thereby reduce population stability.
3. The period of highest human activity levels are coincident with marine wildlife critical reproductive period from early May to mid-September.
4. Disturbance of wildlife results almost exclusively from noise and motion generated by boating and aircraft activity of various kinds.
5. Disturbance of wildlife from vessels is related, among other factors, to the distance of the vessel from the rocks. Disturbance is most predictable and severe when vessels are within 500 feet; some disturbance occurs in certain situations when vessels are between 500 and 2000 feet from the rocks; little or minor disturbance occurs when vessels are beyond 2000 feet.
6. Few commercial or charter fishing vessels approach within 500 feet of the major habitat rocks.
7. Almost all vessel-related disturbance to wildlife is generated by privately operated vessels engaged in fishing, diving, or general recreation activities within 500 feet of habitat rocks.
8. The State of Oregon has authority to regulate vessel traffic and fishing activities in ocean waters of the state adjacent to the rocks of Three Arch Rocks and other federal refuges along the coast.
9. Disturbance of wildlife from aircraft is related to several factors including vertical and horizontal distance from the rocks, aircraft speed, noise level and pitch, and frequency of repetition of disturbance.
10. Aircraft traffic over Three Arch Rocks includes many aircraft types originating from several sources from different directions.
11. The federal government, rather than the State of Oregon, has authority to regulate air traffic over or near Three Arch Rocks.
12. The Oregon Ocean Resources Management Plan contains specific policies to protect marine birds, marine mammals, and their habitats from disruption and harassment from human activities and lists thirty-three sensitive marine bird and mammal habitat areas needing protection from human disturbance.

13. The 1991 Oregon Legislature requires state agencies to take action to manage uses and activities of ocean areas around offshore rocks and islands in the National Wildlife Refuge.

14. There are several actions that the Ocean Policy Advisory Council and state agencies can take to reduce disturbance to wildlife at Three Arch Rocks as well as other offshore rocks and islands.

Action:

The Ocean Policy Advisory Council hereby take the following actions to reduce or eliminate disturbance to marine wildlife from human uses and activities at Three Arch Rocks:

1. An area 500 feet wide around the principal rocks at Three Arch Rocks National Wildlife Refuge is designated for closure to boats from May 1 to September 15. The Council requests implementation by the State Marine Board. This buffer shall also prohibit transit through the closed area including the arches of the rocks.

Note: On the west end of the refuge the 500-foot line shall be drawn from the westerly tip of Shag Rock so as to allow dive boats and charter fishing boats to continue to use the outside edge of a wash rock (Storm Rock) that is approximately 500 feet west-southwest of Shag Rock.

[Graphic]

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Rationale: Based on the 1993 ODFW study, it is anticipated that prohibiting boats within 500 feet of the refuge during the reproductive season will eliminate the majority of disturbance situations outright without adversely effecting charter boat or commercial fishing operators. If the buffer line on the west end is drawn as suggested, the effect on dive boats and charter boats will be lessened. A distance of 500 feet should also allow leeward anchorage of vessels when necessary. A seasonal prohibition is sufficient to address the seasonal nature of the problem and will convey an unambiguous message as to the seriousness of the situation and the intent of the State of Oregon to address disturbance problems. A specific distance is required to be designated as a clear standard against which to measure behavior. The State Marine Board is the appropriate agency to adopt this regulation and to place appropriate buoys.

2. A permanent 2000-foot minimum altitude is designated for aircraft within one-half mile of Three Arch Rocks. The Council requests implementation by the Federal Aeronautics Administration and assistance from area Fixed Base Operators.

Rationale: A permanent 2000-foot minimum altitude is recommended to simplify communication with a diverse audience of aircraft operators. This recommendation would strengthen the 2,000-foot minimum altitude currently recommended by the FAA over all National Wildlife Refuges. This minimum altitude restriction obviously will not apply to U.S. Coast Guard search and rescue missions, oil spill or other environmental response situations,

military emergencies, or "federally permitted aerial census flights to monitor wildlife populations.

3. The Council will work with affected agencies and parties to develop and implement a coordinated program to educate and inform boaters, aircraft pilots, and others of marine wildlife values on and near Three Arch Rocks and other sites and the need to exercise caution and responsibility to protect wildlife from disturbance on the rocks as well as in the surrounding water.

Rationale: An educational and informational program is crucial to gaining understanding of and compliance with any seasonal closure. In addition, education and information is essential encourage responsible behavior beyond regulation such as reducing noise from engines, generators, and the like, and reducing speed within a quarter-mile of the rocks. Information will promote understanding of and personal stewardship toward marine wildlife which, in turn, may be an increasingly important economic resource for Oregon.

Education and information should not be targeted exclusively on Three Arch Rocks. While this should be an initial focus, an overall coastal effort is needed to coordinate efforts along the entire coast. Education efforts should be coordinated by the Council but implemented by various state and federal agencies, businesses, and citizen groups.

In addition to more general public information materials, specific and regular communication is needed with the U.S. Coast Guard air stations in Astoria and North Bend and with military air operations that base aircraft transiting or using the Oregon coast. Likewise a regular program of contact with private airport Fixed Base Operators is needed to continually inform pilots about coastal wildlife issues and operational constraints.