Site Proposal Application for Smith/Minor Islands- March 12, 2008

Section 1 – New proposal, Boundary change, or De-Listing an Aquatic Reserve

Please fill out the form as completely as possible. Answer those items that you know apply to the proposed site. Leave blank any questions to which you do not know the answer.

(The site proposal application can be found at www.dnr.wa.gov/htdocs/aqr/reserves/home.html).

Site Proponent

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Who have you cooperated with to develop the proposal?
Protection Island and San Juan Islands National Wildlife Refuge. Washington State Parks, Washington Department of Natural Resources, Jamestown S'Klallam Tribe, San Juan Island National Wildlife Refuge, Island County Marine Resources Committee, Island County Planning Department, Nature Conservancy, Wild Fish Conservancy, Seadoc Society,

General site information

A. Site locations:

The state-owned aquatic lands surrounding Smith and Minor Islands and Partridge Bank, and east to include the shoreline on Whidbey State Park south to Point Partridge and extending directly out the Strait of Juan de Fuca to include west of Smith Island, and Partridge Bank will comprise the Smith Minor Island Proposed Aquatic Reserve, referred to from here forward as the Smith Unit.

B. Site Overview:

1. **General site description (including acreage):** The Smith unit comprises 25,000 acres and is depicted in Figure 1. All figures are located in Appendix A.

2. **Boundaries description (include section, range and township, county):** Sections 13, 14, 17, 18 and 31-34 in Township 31 N, Range 2. The boundaries initially proposed for this reserve generally coincide with those recommended in the DNR Priority Marine Sites for Conservation in Puget Sound, 2006. The proposed reserve is located in Island and Jefferson Counties.

3. **Current ownership of privately and publicly owned (other than DNR) aquatic lands adjacent to the proposed site (include detailed ownership map).**
   Please see Figures 2 in Appendix A. Approximately 76% of the tidelands within the proposed boundary are state-owned.

4. **Current county shoreline designation and description**

Island County shoreline jurisdiction. (Source: Island County SMP: adopted June 2001). The site falls within the aquatic environment designation). Uplands adjacent to the site fall predominantly into four shoreline categories: natural, conservancy, shoreline residential and rural.

C. Justification for proposal: (Briefly summarize the reasons for proposing the site as an aquatic reserve based on the criteria discussed in Section 6 and Appendices C, D, E, and F).

The proposed reserve is an excellent candidate for formal protection under the Aquatic Reserve program, as it meets the ecological criteria specified in Section 6 and Appendices C, D, E and F. The proposed area includes WNR marine priority habitats, including intertidal and subtidal zones, deepwater tidal habitats, consolidated substrates, and vegetated marine estuarine habitats that are intended to capture high biological diversity, important biological and physiochemical process, vulnerable habitats, life stages, and populations, and species of special concern. Vulnerable habitats life stages, and populations of the proposed reserve include: breeding seabirds and marine mammals, kelp and eelgrass beds that support juvenile rockfish and salmon, and Dungeness crabs.

Smith and Minor Islands and the nearshore and deepwater habitats surrounding them are critical to the survival of seabirds in Puget Sound; both islands are national wildlife refuges established primarily to serve as breeding grounds and winter sanctuary for birds. The combination of soil conditions on these islands are suitable for burrow-nesting birds, and their isolation from non-native predators and limited human disturbance make the islands one of the most important seabird nesting locations in Washington State.

Smith and Minor Islands were originally reserved by the NWR “as a preserve, breeding

ground and winter sanctuary for native birds," and support significant seabird nesting, including: Glaucous-winged gulls, Double-crested cormorant, Rhinoceros auklets, Black oystercatchers, and Tufted puffins (USFWS, 1989). Seasonal WDNR priority bird use of the area within the reserve unit boundaries includes: Harlequin duck, Marbled murrelet, Brown Pelican, and Common loon. Other birds include: Bald eagle. (See Figures 3, 4, and 5, Smith Unit Birds.)

Harbor seals use Smith and Minor Islands for haul out and breeding (USFWS). Elephant seals use both islands for haul out. Stellar sea lions use Smith and Minor islands occasionally as a haul out (USFWS). The waters around Smith and Minor are used by Southern Resident Orcas, a WDNR priority marine species also listed as endangered under the Endangered Species Act.

With respect to ecological and physiochemical processes, this proposal captures areas of tidal divergence of three major water bodies: Strait of Juan de Fuca, Admiralty Inlet and Rosario Strait. Strong tidal currents in the waters of Admiralty Inlet support upwelling of nutrient rich water to the surface where it supports phytoplankton blooms and concentration of forage fish. The nearshore environments within the proposed reserve boundaries support extensive eelgrass and kelp beds and the diversity of depths and bottom types throughout the reserve area are thought to also present opportunity for equally diverse subtidal habitats. The proposed reserve is intended to capture the greatest bathymetric and substrate diversity.

Smith Island contains rock, sand and gravel substrates, with varying exposure to currents, resulting in highly diverse flora and fauna (WNDR, 2006). The Smith units support extensive eelgrass and kelp beds, which are WDNR marine priority habitats; the Smith/Minor Island unit contains one of the largest floating kelp beds in the state of Washington (WDNR Nearshore Habitat Program 2001). See Figure 6 Smith Unit Aquatic Vegetation distribution. These habitats support lingcod, rockfish, halibut, kelp greenling, cabezone, salmon, and large cetaceans (Palsson 2000). Kelp beds are an important habitat for juvenile salmon and rockfish, both of which are WDNR priority marine species.

The site proposal meets the viability criteria for focal species and habitats to be protected in multiple, spatially disjunct, but ecologically connected reserves. This proposal is being submitted in tandem with a proposal for Protection Island. Together, they provide significant breeding habitat for Puget Sound seabirds and marine mammals, and represent the sole remaining areas in Puget Sound where rhinoceros auklets nest (Scott Pearson, WDFW, pers. com.). The site meets ecological criteria for site condition, as it currently has a low degree of alteration from its natural state. The site also meets criteria for site size; the WDNR boundaries are consistent with the recommendations of the Priority Marine Sites document, which was developed using criteria to ensure proposed sites are large enough to capture habitats of interest, include sufficient habitat to support viable populations, and when possible, include necessary buffers to support the site. This proposal area meets the criteria for biodiversity; it has been identified as a high priority biological diversity area by the Nature Conservancy Puget Trough/Georgia Basin Ecoregional plan, 2002. This area was also recommended as one of three high priority

sites for the Eastern Strait of Juan de Fuca region in the Priority Marine Sites for Conservation in the Puget Sound. This area also meets the criteria for ecological connectivity, being near the existing Cypress Island Aquatic Reserve.

Protection of the state-managed aquatic lands as an Aquatic Reserve would provide for more comprehensive protection of the marine resources associated with this ecosystem, including food web interactions, and ensure that human disturbances to bird nesting and rearing, and the habitats that support their prey, are minimized. Further, development of a management plan would facilitate best management practices for existing and proposed leases along the mainland shorelines, limiting leases that would have adverse impacts on the ecosystem or affect research programs, encourage voluntary stewardship by shoreline property owners, and provide enhanced coordination with Washington State Parks in the management of the Joseph Whidbey and Fort Ebey State Parks, and National Park Service, with Ebey's Landing National Historic Reserve.

Environmental Reserve Information

To be provided for each reserve proposal (environmental, scientific, or educational).

Ecological and cultural quality of the site

1. **Current condition of the site**
   a. **Is the site degraded?**

This site is in overall excellent condition. There are no overwater structures along the Whidbey Island shoreline within the reserve boundary. The majority of the project area is adjacent to dramatically high bluff beaches; the beaches below appear to be in good condition. A very small portion of the shoreline includes a low bluff area with extensive shoreline armoring. There are no discharge outfalls within or directly adjacent to the proposed reserve boundary.

   b. **Are there signs of habitat loss within the site?**

Kelp beds on shallow banks and along the mainland shoreline appear to be intact (WDNR Nearshore Habitat Program, 2001). The WRIA 6 Multi-species salmon recovery plan (WRIA 6, 2005) identifies the shoreline at Whitecap Lane (off of Hastie Lake Road) as a moderate habitat restoration priority for juvenile salmon. This is a low bluff area characterized with residential structures close to the shoreline and shoreline armoring.

   c. **Are there signs of habitat loss within the biogeographic region?**

Many of the islands in North Puget Sound have experienced some level of habitat degradation as a result of human caused disturbances. Smith and Minor Islands are in excellent condition and owned and managed by U.S. Fish and Wildlife Service as part of the San Juan Island National Wildlife Refuge.

Decline in species abundance may be indicative of habitat loss within the biogeographic region, although no studies have made this direct connection. Examples include the significant decline of the Strait of Juan de Fuca Pacific herring, and decline of seabirds in Puget Sound since the 1970's. (Please see responses to Question 4 and 9).

d. **Are ecosystem processes (e.g., freshwater flow, littoral drift, nutrient cycling, etc.) intact? Is so describe.**

Ecosystem processes, including the strong tidal currents in the waters of Admiralty Inlet that support upwelling of nutrient rich water to the surface, appear intact. Littoral drift processes on Smith/Minor Island and Whidbey Island within the project area appear relatively intact as well, with the exception of a low bluff area characterized by hard shoreline armoring. In particular is the area off of Whitecap Lane.

2. **Risks to the ecosystem or feature of interest (if applicable) – Can ecological concerns contributing directly to the area's decline be prevented through reserve establishment?**

Reserve establishment is expected to provide enhanced protection that will prevent the area's decline over the long term. For example, the U.S. Fish and Wildlife Service manage a 200 yard buffer zone around the islands within which boats are prohibited, but the Service has no jurisdiction below the ordinary high water mark. The USFWS buffer excludes the majority of kelp beds located around Smith Island and Partridge Bank. Reserve establishment can reduce potential threats associated with oil spills, other contaminants such as creosote, marine debris, invasive species, and human disturbance to wildlife species breeding and resting. Reserve establishment can support MRC and other efforts to remove derelict fishing gear. It will prevent potentially incompatible uses of state owned aquatic lands, such as the siting and/or expansion of marinas or over water structures, fuel terminal, energy pipeline or transmission line rights of way, tidal energy, floating finfish farms, and other uses that cannot be anticipated at this time. There have been proposals in the past to investigate the feasibility of siting tidal energy facilities in Admiralty Inlet. Upland and overwater development, and increases in vessel traffic, Depending on vessel size, frequency, nature of the activity, and other factors, could result in disturbance to breeding birds or marine mammals, or water quality degradation to this region of the Strait as well as physical disturbance of diverse benthic habitats. Reserve establishment may also increase DNR's engagement in any oil spill recovery or damage assessment cases that would affect the reserve and its habitats and species.

Establishment of the reserve can also facilitate coordination with WDFW, State Parks, and adjacent shoreline property owners to encourage voluntary stewardship of feeder bluffs and beaches, avoidance of new hard shoreline armoring, and restoration of areas impacted by existing hard shoreline armoring structures.

3. **Restoration potential**

a. **Is there pending restoration or identified restoration needs at the site?**

As mentioned above, the WRIA 6 Multi-species salmon recovery plan (May 2005) identifies the shoreline at Whitecap Lane (off of Hastie Lake Road) as a moderate habitat restoration priority for juvenile salmon. This is a low bluff area characterized with residential structures close to the shoreline and hard shoreline armoring. The Island County MRC performed an extensive cleanup of creosote debris along the western shoreline of Whidbey Island in 2006.

There may be derelict fishing gear or additional creosote debris removal needs throughout the area, although none have been identified at this time. On the uplands outside the reserve, the USFWS has identified the need for removing some invasive plant species and reintroducing or enhancing special status native plant species or native plant communities on Smith and Minor Island uplands.

b. **Would restoration benefits extend beyond site boundaries?**

Restoration of areas degraded by hard shoreline armoring would be appropriate to help restore shoreline sediment transport processes that create and sustain habitats, including forage fish spawning and juvenile salmon migration corridors. Removal of derelict gear benefits all species that migrate through the site. While the regional nearshore chapter of the Puget Sound Chinook recovery plan (Puget Sound Action Team, 2005) does not provide any specific project recommendations for restoration projects within the proposed reserve, it does make a general prediction that estuarine restoration will deliver more juvenile salmon to adjacent nearshore areas, in turn supporting species that depend on salmon for food as well as the salmon themselves.

4. **Special value for biodiversity or species diversity**

a. **Does the proposed site capture habitat used regularly by species of special conservation interest?**

The Smith Unit captures areas of tidal divergence of three major water bodies: Strait of Juan de Fuca, Admiralty Inlet and Rosario Strait. Strong tidal currents in the waters of Admiralty Inlet support upwelling of nutrient rich water to the surface where it supports phytoplankton blooms and concentration of forage fish. Smith Island contains rock, sand and gravel substrates, with varying exposure to currents, resulting in highly diverse flora and fauna (WNDR, 2006). This unit contains one of the largest floating kelp beds in the state of Washington (WDNR Nearshore habitat program, 2001). These habitats support lingcod, rockfish, halibut, kelp greenling, cabezone, salmon, and large cetaceans (Palsson 2000). Kelp beds are an important habitat for juvenile salmon and rockfish, both of which are WDNR priority marine species. The mainland uplands of the Smith Unit include Forth Ebey State Park, Joseph Whidbey State Park, Ebey's Landing National Historical Reserve, which are prime locations on the Pacific Flyway, attracting many migratory species of shorebirds and waterfowl in search of food and shelter. Gray whales have also been identified as passing between Whidbey Island and Smith Island (National Park Service).

Smith Island, and approximately 5,500 acres of adjacent marine habitat, was also identified as a high priority biological diversity area by the Nature Conservancy Puget Trough/Georgia Basin Ecoregional plan, 2002. The site includes one of the largest floating kelp beds (a WDNR priority marine habitat) in the state of Washington (WDNR Nearshore habitat program, 2001). This area was the top ranked site in the East Strait of Juan de Fuca region identified in the Washington State Department of Natural Resources Priority Marine Sites for Conservation in the Puget Sound (2006).

b. **Does the proposed site capture vulnerable habitats, life stages or populations? (Vulnerable habitats, life stages or populations include: seal haul-outs, breeding bird aggregations or rookeries, seasonal bird aggregations, seasonal fish aggregations (e.g. feeding, spawning) or fish and wildlife migration routes.**

Smith and Minor Islands are important bird breeding and marine mammal use areas. It is an important nesting site for Glaucous-winged gulls, Double-crested cormorant, rhinoceros auklets, black oystercatchers, and tufted puffins (USFWS, 1989). Smith Island is one of only two areas in Puget Sound where rhinoceros auklet are concentrated, and breeding pairs have declined 30 percent between 1975 and 2000 (PSAMP, 2007). This is also the only area in Puget Sound where tufted puffin nests have not been reduced from historical levels (Scott Pearson, WDFW, pers. com). The Island County MRC is conducting a survey of Pigeon guillemots, which nest on the western shore of Whidbey Island.

Harbor seals use it for haul out and breeding. One of the largest kelp beds in Puget Sound is located within the site. Understory kelp also occurs adjacent to Whidbey Island shoreline (DNR Nearshore Habitat Program, 2001.) Stellar Sea Lions use the islands occasionally as a haul outs and the surrounding waters used by Southern Resident Orcas, which are listed as endangered under the Endangered Species Act. Kelp beds in the proposed reserve are important habitat for juvenile rockfish, a WDNR priority species.

5. **Ecological processes that sustain the aquatic landscape – Would protection of the site protect/maintain ecological processes that sustain the aquatic landscape (e.g., freshwater flow, littoral drift, nutrient cycling)?**

By reducing the influence of human disturbance, including water quality degradation, natural biological processes are expected to continue. Ecological processes that support kelp beds and sediment drift processes are expected to help sustain forage fish, salmon, and other prey species upon which marine bird populations rely. However, many natural processes, even in the absence of anthropogenic influence, may not be fully understood here.

6. The cultural quality of the site– Does the site contain or protect significant cultural resources? (Does the site contain heritage, historical, or cultural

resources that are eligible for the Washington Register of Historic Places, (RCW27.34.220) or the National Register of Historic Places?

According to the Washington Information System for Architectural and Archaeological Record Data (WISAARD), available on the Department of Architectural and Historical Preservation website, there are several upland sites adjacent to the proposed reserve boundaries; none these sites are located on state-owned aquatic lands or on the beach.

Ebey's Landing National Historical Reserve, managed by the National Park Service, includes uplands, bluffs and beaches within the proposed WDNR aquatic reserve's boundary from Fort Ebey State Park to about 1/5 miles north (northern boundary of Ebey is in S24, T33N, R1W). The reserve was set aside by Congress in 1978 to preserve and protect a rural community and historic land uses existing when the first European-American settlers landed in the area. The reserve is a non-traditional unit of the National Park system, the first unit of its kind in the system, with most of the land under private ownership. A unit of local government, the Trust Board of Ebey's Landing National Historical Reserve, is charged with management as called for in the legislation creating the Reserve. The Trust Board is a partnership of local, state and federal governments working collaboratively to ensure the historic and natural resources of the reserve are protected for future generations to enjoy and experience. The NPS purchases development rights to key sites including portions of the original Ebey donation land claim. The NPS continues to work cooperatively with Washington State Parks, Island County and the Town of Coupeville for the on-going protection of the historic rural landscape. Most of the land in the Reserve is privately owned. There are two state parks within the boundaries of the Reserve, Fort Casey and Fort Ebey state parks. Coupeville is the county seat for Island County government, and serves as a hub for tourist activities as well as holding town and county government offices, the island's hospital, and other special services and businesses. The NPS purchases development rights to key sites including portions of the original Ebey donation land claim. The NPS continues to work cooperatively with Washington State Parks, Island County and the Town of Coupeville for the on-going protection of the historic rural landscape.

Smith Island Light Station, located on Smith Island, is on both the Washington Historical Register and the National Register of Historic Places, and is owned by the US Coast Guard. The lighthouse was built in 1858 and abandoned in 1957, due to erosion threats.

While these sites will benefit to some extent from designation of the aquatic reserve, Ebey's Landing is anticipated to benefit the most, as it includes the shorelines and beaches directly adjacent to the proposed aquatic reserve. Designation can ensure that future leases will be compatible with natural and cultural resource protection.

7. Is the site a good example (relatively undisturbed) of representative native habitat?

The site is representative of other shorelines, open water and submerged habitats in the eastern Strait of Juan de Fuca, many of which are facing impacts from adjacent shoreline

modifications and development pressures. Because much of the nearshore is currently getting protection due adjacency to the National Wildlife Refuges, existing and proposed State Parks, and Ebey's Landing National Historic Reserve, little disturbance has occurred. Smith/Minor Islands are among the few remaining undeveloped glacial till islands in Puget Sound, and include the largest floating kelp beds in Puget Sound.

8. Does the site contain representative habitats not otherwise protected in the network of protected areas or aquatic reserves?

No existing reserve contains major nesting sites for Rhinoceros auklets and Tufted puffins (USFWS, 1989). Smith Island is one of only two areas in Puget Sound where rhinoceros auklet are concentrated, and breeding pairs have declined 30 percent between 1975 and 2000 (PSAMP, 2007). This is also the only area in Puget Sound where tufted puffin nests have not been reduced from historical levels (Scott Pearson, WDFW, pers. com). The kelp beds at Smith Island that extend into Jefferson County represent one of the largest kelp beds in the state of Washington (WDNR Nearshore habitat program 2001). No other reserve has a kelp bed of this magnitude. These habitats support lingcod, rockfish, halibut, kelp greenling, cabezone, salmon, and large cetaceans (Palsson 2000). While the bottom sediments of these rocky habitats are not capable of supporting the large number of infauna found in soft-sediments, many crustaceans such as mysids, crab, epibenthic shrimps, amphipods, isopods and copepods occupy the kelp microhabitats. Kelp and other primary producers provide food supply for these smaller organisms which in turn become prey resources for those fish occupying these habitats while providing shelter for fishes while they feed on these invertebrates (Nightingale, 2000).

9. Does the proposed site capture species or habitats that are currently much less common than they were historically within the site's "biogeographic region" (See Section 6, Figures 3 and 4)?

As previously mentioned, the site includes the larges Rhinoceros auklet nesting population in Puget Sound, and the world, and contains the last breeding areas within Puget Sound for Tufted puffin. The site also provides seasonal habitat for Brants, Common loons, Red-throated loons, Marbled Murrelets, Surf scoters and Western Grebes, all of which have declined by 20 percent or more since the 1970's in Puget Sound (PSAT, 2007). The site's importance for rhinoceros auklets and tufted puffins suggests these species were more commonly distributed in the past. It would also be logical to assume that loss of habitat and disturbance at unprotected sites contributed to that decline. The Protection Unit also contains the predominant stock of Pacific herring in the Strait of Juan de Fuca. From the mid 1980s to the present, stock estimates from this region have shown a continuing decline (WDFW). Southern resident killer whales also use the waters off Whidbey Island.

Viability of the occurrences of interest

10. Site features meet the intent of the reserve

Are species, habitat, or ecosystem processes consistently associated with the reserve site?

The proposed reserve in combination with the Protection Island proposal captures two distinct areas on either side of Admiralty Inlet that are ecologically connected in terms of ecological processes and species usage. Both sites provide upland and marine habitat for species during their breeding phase. Nesting for the identified species of seabirds occurs annually, with Protection Island supporting over 21,000 nesting pairs. Marine mammals also consistently use the Protection Unit for breeding. Other species that are known to use the site for breeding include Sand lance, and Pacific herring (pre-spawn holding). Both units serve as important stops for birds on the Pacific Flyway, including Brants and surf-scoters, providing continued protection of migratory species within their broad range. The proposed reserve also provides foraging habitat for species that nest in upland forests, such as Marbled murrelet.

11. Number of conservation targets ***(As it relates to information in "Special value for biodiversity or species diversity," question #9 above). Identify the habitat(s) and associated species you are proposing for conservation. Summarize the conservation goals.***

Protect sandy beaches, spits, and "feeder bluff" shorelines – maintaining these features in an undisturbed condition supports nesting sea birds such as rhinoceros auklets and tufted puffins, as well as forage fish spawning habitat that provides food sources to sea birds, salmon, and marine mammals.

Protect species diversity and rare and vulnerable populations of species and their habitats, including sea birds, marine mammals, Pacific herring, salmon and rockfish.

Protect eelgrass and kelp beds – support primary production and detritus based food webs in the vicinity of the reserve. Cryptic invertebrate species and rockfish juveniles depend on eelgrass and kelp for cover. Eelgrass and kelp buffer tidal currents allowing sediments suspended by storm waves to resettle more quickly than on shorelines without kelp or eelgrass (USGS CHIPS, 2008).

Protect benthic and open water habitats, including areas of high tidal activity - support region-wide biological diversity, and food production for birds, fish and marine mammals within the reserve.

Protect water and sediment quality from oil spills and introduction of other toxic chemicals or pollutants-pollutants can have significant negative impacts on mammals, breeding birds and their chicks, forage fish, and other species.

Protect habitats historically characteristic of glacial till islands, especially for breeding marine mammals, nesting seabirds, and other migratory birds.

Protect adjacent uplands that support marine riparian vegetation and roosting trees, and provide resting areas for migratory species of shorebirds and waterfowl along the Pacific Flyway, such as the proposed Miller Peninsula state park, Ebey's Landing National Historical Reserve.

12. Number of ecological processes

Does the site contain unique or distinctive physical habitat features (e.g., oceanographic gyre, oceanographic sill, natural beach spit, side channels, ox bow, estuary, etc.)?

As noted earlier, Smith/Minor Islands are glacial till islands that have had little human disturbance. Other unique physical habitat features include the complex bathymetry in Admiralty Inlet, which interrupts natural oceanic inflow from the Pacific Ocean through the Strait of Juan de Fuca and freshwater outflow from Puget Sound forcing nutrient rich waters to the surface where they nourish the phytoplankton based food web. This region of the Strait of Juan de Fuca is also where estuarine and marine influences meet supporting high biodiversity.

Of central importance to the exchange flows are the constituents (dissolved and suspended) carried by the currents. The deep in-flow represents cold, salty dense water from the Juan de Fuca Canyon of the continental shelf. During summer up-welling conditions, this source-water originates from the slope region, where it is both high in nutrients and low in oxygen. Once into the Strait, it flows along the bottom, mixing slightly with mid-depth waters, and eventually encountering the island channels and sills south and east of Victoria. (VENUS workshop, 2004)

http://www.venus.uvic.ca/resources/documents/JdFMay12Summary.pdf

Defensibility of the site

13. Complementary protection within a reserve or protected area network

Does the site include habitat types that are under-represented on a bioregional basis, in the Aquatic Reserves Program, or other marine protected area or network?

The existing network of marine protected areas within Puget Sound and the Strait of Juan de Fuca has not been comprehensively inventoried to allow such a comparison. However, undeveloped glacial till islands and sandy bluffs of the nature exhibited within the reserve, the abundance and rarity of nesting seabirds, and the reserve site's unique landscape position at the juncture of the Strait of Juan de Fuca seem rare among the known network of sites. Currently the area around Smith and Minor Island and the west shoreline of Whidbey Island constitute the largest floating kelp bed in Puget Sound.

14. **Connectivity to a reserve or protected area network and/or for species and/or habitats.**
    a. **Is site adjacent to existing marine or freshwater protected areas administered for preservation or restoration purposes?**

Smith and Minor Islands are part of the San Juan Island National Wildlife Refuge. Washington State Parks manages Joseph Whidbey State Park and Fort Ebey state park. Most of the adjacent uplands on Whidbey Island are managed as part of Ebey's Landing National Historic Preserve. This area also provides ecological connectivity, being near the existing Cypress Island Aquatic Reserve. The Island County critical areas ordinance currently requires a 75 foot setback/vegetated buffer from marine shorelines. In 2003, the Island County Commission has established the Admiralty Inlet Marine Stewardship Area, including the waters west of Whidbey Island from Deception Pass in the north to Possession Point in the south, to help focus greater awareness and education on the unique marine assets of Island County waters. Their purpose is education and voluntary change, and the Island County MRC and WSU Beachwatchers are working on educational and outreach programs for voluntary stewardship.

    b. **Does the site provide regional habitat connectivity through any of the following functions**? ***Refuge (predator, physiological, high energy), food production, migratory, corridors, spawning, nursery or rearing, riparian vegetation, adult habitat, other functions. Please provide references to support this information.***

Both units
As mentioned previously, Smith/Minor Islands and adjacent marine waters support critical breeding habitat for Rhinoceros auklet, Tufted puffin, Black oystercatcher, and Glaucous-winged gulls as well as numerous other seabird species for nesting and rearing their young (Kevin Ryan, USFWS).

The proposed reserve boundary provides regional connectivity between each island and the adjacent, marine riparian vegetation and forested uplands of the mainland. This connects upland areas used for resting by birds migrating along the Pacific Flyway to marine foraging habitats. The mainland nearshore provides a cool, shallow micro-climate for migration and food production (insects) for juvenile salmon. Recent observations of migrating juvenile salmon summarized in the regional nearshore chapter of the Chinook Recovery Plan (PSAT, 2005) and the Hood Canal Summer chum Recovery Plan (Hood Canal Coordinating Council, 2006) suggest this area is critical for migration support for Elwha River Chinook and Hood Canal summer chum salmon populations.

Floating kelp beds provide rearing habitat for juvenile rockfishes, and provide substrate for benthic and epibenthic organisms which is believed to lead to increases in the abundance, biomass, and diversity of other nearshore organisms; eelgrass beds within the reserve boundary also provide habitat for salmon and Dungeness crab, spawning grounds for herring, and a food source for Brant and other waterfowl (PSAMP, 2007).

15. **Appropriate size to be sustainable**

Is the area large enough to be self-sustaining? Is the entire feature identified for conservation included in the proposed site? Does the site include the adjacent areas necessary to support and buffer the conservation features of the site?

The proposal encompasses the areas recommended by the Priority Sites for Conservation in Puget Sound, DNR 2006. The site include adjacent nearshore of the mainland, ensuring connectivity with and protection for sediment transport and other habitat processes that likely contribute to the health of the ecosystem.

By designating a large marine areas around Smith/Minor Islands and the west Whidbey shoreline, we will be incorporating the varied uncharted habitats that are likely across the gradient of depths and substrate types within this area. In this way, we will incorporate support functions from those habitats before we have full understanding of their role in supporting the habitats and species within the reserve.

16. **Ability to persist over time**

a. **Can site be successfully managed to maintain the features of interest?**

The proposed boundaries are consistent with the recommendations of the Priority Marine Sites document, which was developed using criteria to ensure proposed sites are large enough to capture habitats of interest, include sufficient habitat to support viable populations, and when possible, include necessary buffers to support the site. A number of agencies have regulatory authority over the deep waters, nearshore and adjacent uplands associated with the proposed reserve. These, agencies such as state parks, USFWS, WDFW, and National Parks Service are managing public lands in the interest of long term protection of fish and wildlife. And local jurisdictions, such as Island County, with its designation of the Admiralty Inlet marine stewardship area have an interest in the continued health of these features of interest as well. Designation of an aquatic reserve will allow all stakeholders to come together to develop management strategies that protect features of interest over the long term.

b. **Are there known human-caused, or natural ecological concerns, to continued viability of the site?**

The USFWS has identified preliminary issues and concerns in its Comprehensive Conservation Plan, Planning Update 1. Threats to resources include: oil spills, other contaminants such as creosote, marine debris, and derelict fishing gear, and, invasive species.

Construction of new hard shoreline armoring, marinas, and over water structures adjacent or within the reserve in the future is an ecological concern. These activities should be avoided in favor of more habitat friendly alternatives. It is difficult to predict other

potential future activities that might pose a threat to the site. The fact that the site is relatively isolated from urban shoreline development could make it vulnerable to activities or land uses whose siting criteria prefer more remote sites, such as energy utilities, resorts and marinas, and some types of commercial aquaculture (finfish). Activities within the reserve that could increase risks of major disturbance or entrapment of birds or marine mammals, negatively affect water quality, or food web interactions on state-owned aquatic lands are of major concern. The management plan will need to explore this in detail, in close coordination with tribal representatives.

Recreational and/or tribal fishing, crabbing and wildlife watching activities occur within and surrounding both proposed aquatic reserve sites which People for Puget Sound supports and would like to sustain those activities consistent with reserve goals. Review of the scope of these activities and potential management measures will be explored during the development of the reserve management plan. DNR and People for Puget Sound do not regulate commercial or recreational fisheries. DNR has authority over activities that require leases on state-owned aquatic lands (bedlands and tidelands), including leases for harvest of wild geoduck stocks. The management plan may include strategies such as fisher education, voluntary marine stewardship areas, or best management practices for wildlife watching; all such recommendations would be developed in coordination with Washington Department of Fish and Wildlife, USFWS, treaty tribes, and aquatic lands users.

17. **Known or anticipated activities that endanger the site or habitat**
Are proposed land uses or modifications compatible with reserve designation (Modifications of interest are described in Appendix B)?

Adjacent residential upland development
Future residential upland development is likely to occur along the Whidbey Island shoreline. Shoreline buffers and setbacks required by local government development permits should reduce potential loss of riparian vegetation directly adjacent to the reserve. Construction of new hard shoreline armoring and overwater structures has the potential to conflict with reserve goals for habitat protection. Partnerships with USFWS, WDFW, state parks, and Island County will be needed to ensure that both regulatory tools ensure adequate protection of natural resources. Education and outreach with adjacent property owners will also be necessary; in addition to partnerships with these agencies, assistance from Beach Watchers, MRCs and other volunteer organizations may be needed.

Commercial and recreational shellfish harvest and aquaculture
Harvest of wild geoducks is currently taking place within the reserve, and will likely take place in the future. No conflicts with the reserve designation have been identified. However, commercial aquaculture of finfish and similar practices could lead to species protection conflicts, as birds and other species may be attracted to the farms and get entrapped in predator exclusion devices, or there could be negative water quality impacts. Commercial trawling of finfish has the potential for significant impacts and is currently

prohibited. The Washington State Departmetnt of Fish and Wildlife and Washington's Treaty Tribe co-manage the state's fisheries, therefore fisheries management is outside the scope of the Aquatic Reserves Program.

Mooring Buoys
Anecdotal information indicates marine vessels may use the lee side Smith and Minor Island. This need should be investigated, and a public moorage plan may need to be developed in close coordination with USFWS. The purpose would be for DNR to establish a very limited number of mooring buoys on state-owned aquatic lands for the primary purpose of protecting eelgrass, kelp and other sensitive aquatic habitats while accommodating emergency moorage. DNR should only use a mid-line floating system (with helix anchoring system) for installing mooring buoys. Placement of buoys should also be in consideration of the need to avoid disturbance to seabirds and mammals using the reserve's shorelines and holding areas.

Water quality and Hydraulic modifications
Other future uses that may conflict with reserve goals include tidal energy facilities. Proposals have been made to site tidal energy facilities in Admiralty Inlet. These have the potential for significant impacts to species health and diversity due to changes in tidal hydrology. Therefore, tidal energy facilities should be prohibited in or directly adjacent to the reserve.

Wind energy facilities
Wind energy facilities have the potential for significant, adverse impacts to birds. Future lease activities related to wind energy that can harm birds should be prohibited.

18. **Potential for factors contributing directly to the area's decline to be prevented**
    Would reserve status provide protection for habitats, species, or processes of interest from encroachment?

Yes, reserve status will directly prevent future lease activities that could harm or disturb birds, mammals, kelp and eelgrass beds, and modify tidal activity, as well as prevent introduction of new water pollution sources. Other agencies such as Washington Department of Fish and Wildlife, state parks, US Fish and Wildlife Service, and National Park Service, can provide protection through continued management, stewardship, and restoration of their lands. Reserve status should prompt appropriate, long-term protections of shorelines, nearshore habitats, and uplands under local government authorities as well (Island County).

Manageability of the site

19. **Coordination with other entities, including local jurisdictions and current leaseholders**
    Does the proposal include coordination of reserve actions with other entities,

including local jurisdictions and current leaseholders?[1]

Development of this proposal is being coordinated with USFWS, WDFW, State Parks, Island County MRC. In addition, the Tulalip, Samish, Swinomish, and Elwa tribes have all been contacted. Local jurisdictions have been contacted as part of this effort, as have the Puget Sound Anglers. All of these entities are encouraged to participate in development of the management plan and to identify opportunities for future partnerships. Outreach will be needed to residential property owners living upland of the proposed reserve.

a. **Has another entity previously identified this site or areas within the site as a priority for protection?***[Examples include Important Bird Areas (Cullinan 2001), priority areas for Research Natural Area Designation (Dyrness et al. 1975), or priority areas for conservation (e.g., through ecoregional planning, Natural Heritage Program research (Kunze 1984), or similar process (Dethier 1989)]*

The terrestrial and marine habitats have been identified as a high priority biological diversity area by the Nature Conservancy Puget Trough/Georgia Basin Ecoregional plan, 2004. This area was also recommended as one of three high priority sites for the Eastern Strait of Juan de Fuca region in the Priority Marine Sites for Conservation in the Puget Sound, which considered the recommendations in Dyrness et al and Dethier. The Smith unit was specifically recommended in Dyrness.

b. **Have potential cooperative management partners been identified for management, monitoring, and enforcement?** [2]

Initial discussions are taking place with USFWS, State Parks, Island County MRC and Island County Beach Watchers to share information and identify potential partnerships. The USFWS and WDFW already have established protection and scientific research programs; partnerships with DNR would better bridge the gap in terms of increasing knowledge of deepwater habitats and species. The USFWS is exploring partnerships to create buffers areas closed to public access around the islands as one method of reducing human disturbance to wildlife (USFWS 2007). State Parks could help cooperatively manage educational materials, programs, and signage adjacent to the reserve. WDFW is an essential partner in protecting forage fish and other priority habitats.

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[1] This criterion is intended to gauge the amount of planning and effort that has already been invested in the development of a protection plan for the area of interest. These criteria represent best management principles that the Aquatic Reserve Program will seek to employ, and will be used to give preference to proposals that are in more advanced stages of development.

[2] This criterion is intended to gauge the amount of planning and effort that has already been invested in the development of a protection plan for the area of interest. These criteria represent the best management principles that the Aquatic Reserve program will seek to employ, and will be used to give preference to proposals that are in more advanced stages of development.

c. **Is the site adjacent to terrestrial protected areas managed for conservation or restoration purposes?**

Joseph Whidbey State Park and Fort Ebey State Park borders each end of the reserve on Whidbey Island, which should continue to provide protection of shorelines, bluffs, and upland forests. The uplands in between the parks, although they have been developed with single-family development, are part of the Ebey's Landing National Historical Reserve, managed by the National Park Service to preserve and protect a rural community and historic land uses existing when the first European-American settlers landed in the area. (See response to Question 6.) Smith Island is owned and managed by the USFWS. Management programs at Smith Island focus are being targeted towards removing hazardous materials, structures, and selected invasive species.

20. **Provide a description of how to measure success (i.e., monitoring). Describe what, if any, monitoring needs**
Does the reserve proposal include a monitoring plan that measures reserve progress toward goals and provide for adaptive management?

Monitoring needs have been identified by the USFWS as a need to understand and sustain healthy populations of refuge wildlife and habitats, especially for seabirds. There is great potential for monitoring partnerships between DNR, refuge and sanctuary managers, and state parks that will provide information that can determine the need for course corrections in management strategies over time. There may also be opportunities for citizen science at the state park.

The reserve management plan should include the scope of characterization studies necessary for reserve management as well as contribute to parameters that are appropriate for between-site comparisons across the network of aquatic reserves and marine protected areas. Because this site will be the aquatic reserve with the closest proximal influence from the Pacific Ocean, as well as being located at the tidal divergence of three major water bodies: Strait of Juan de Fuca, Admiralty Inlet and Rosario Strait opportunities exist within the reserve for monitoring oceanographic influences that affect the larger Puget Sound Region.

Monitoring of activities that have potential for disturbing nesting sea birds and mammals is also recommended. This area was also the subject of a number of biological baseline studies completed in the 1970's to provide a historic baseline for birds, fish, benthic, and invertebrate populations. These studies were completed as part of the National Oceanic and Atmospheric Administration's Marine Ecosystem Analysis (MESA), Puget Sound Project, when the eastern Strait of Juan de Fuca came under consideration as a possible oil transshipment terminal site. To view the full studies, see http://www.clallammrc.org/CCMRC/ecosystem.html.

WDFW is conducting research on burrowing nesting seabirds at both Protection Island and Smith Islands that is funded by PSAMP and Seadoc Society. U.S. Fish and Wildlife Service have conducted long term research on seabirds here as well.

21. **Kinds of enforcement needed to make sure incompatible uses and impacts do not encroach on the reserve**
What kind of enforcement is needed to prevent incompatible uses and impacts from encroaching on the reserve?

As mentioned above, the USFWS has identified the need to limit human disturbance adjacent to the reserve, to enhance wildlife survival. This may require better enforcement of refuge buffers, in addition to limits on future lease activities within the reserve that have the potential to disturb breeding or resting wildlife or introduce contaminants into the environment.

22. **Does the site serve or conflict with the greatest public benefit?**
a. ***Does reserve status represent the greatest public benefit?***

This site serves the greatest public benefit by increasing the effectiveness and efficiency of the individual protection and restoration efforts of the separate entities responsible for managing public lands, (USFWS, WDFW, DNR, State parks. National Park Service), through cooperation, agreements, and pooling of resources. Enhanced protection of the habitats and species in the reserve can benefit the public by maintaining biological diversity, species abundance, food web interactions, providing haven for vulnerable fish and wildlife populations, and encouraging and promoting sustainable, transient recreational activities. Healthy habitats, species, and water quality supports wildlife viewing and educational programs, harvest for recreational, cultural, subsistence, and other uses, and ensures these attributes will be available for future generations to enjoy.

b. **Is reserve status compatible with existing or proposed adjacent uses?**

Yes, please see response to 17a. Reserve boundaries are drawn to avoid areas covered by existing commercial shipping lanes.

State Parks
The protected status provided by Ebey's Landing Historical Reserve adjacent to the Smith Unit and the protected status of Joseph Whidbey State Park provide protection for the proposed reserve.

Recreational users
The Whidbey Island Chapter of the Puget Sound Anglers has indicated that this site is not a widely used site for recreational fishing. However, recreational fishing can benefit through the habitat conservation benefits of the reserve designation. The management plan will need to address this issue, and seek partnerships to meet common goals of clean water, and healthy fish habitats. Reserve management priorities could be developed that encourage and promote sustainable recreational activities, as was done in the Maury Island Aquatic Reserve Management Plan.

Appendix A. Figures

Figure 1. Proposed Aquatic Reserve

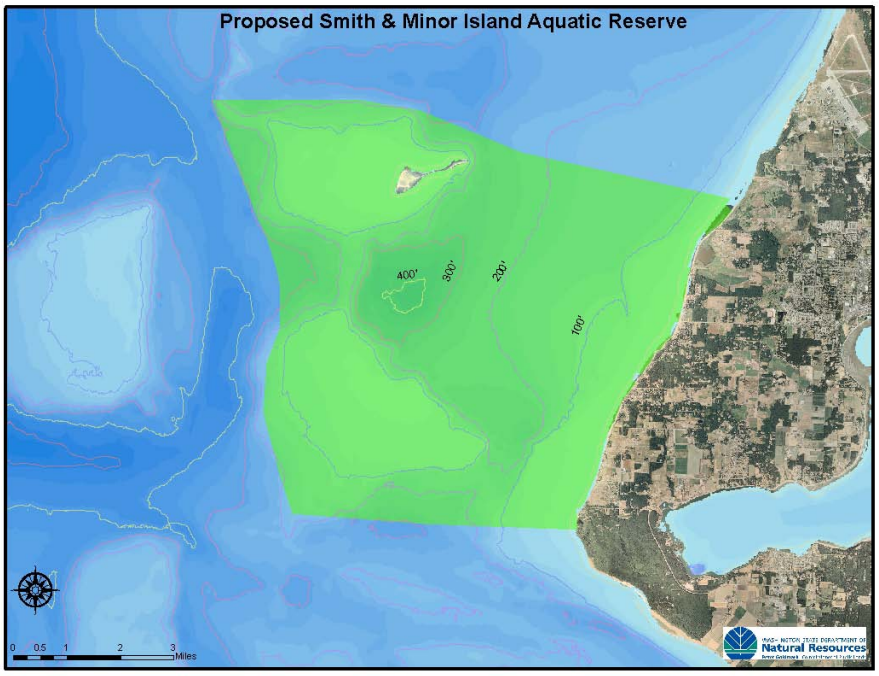


Figure 2. Shoreline Ownership

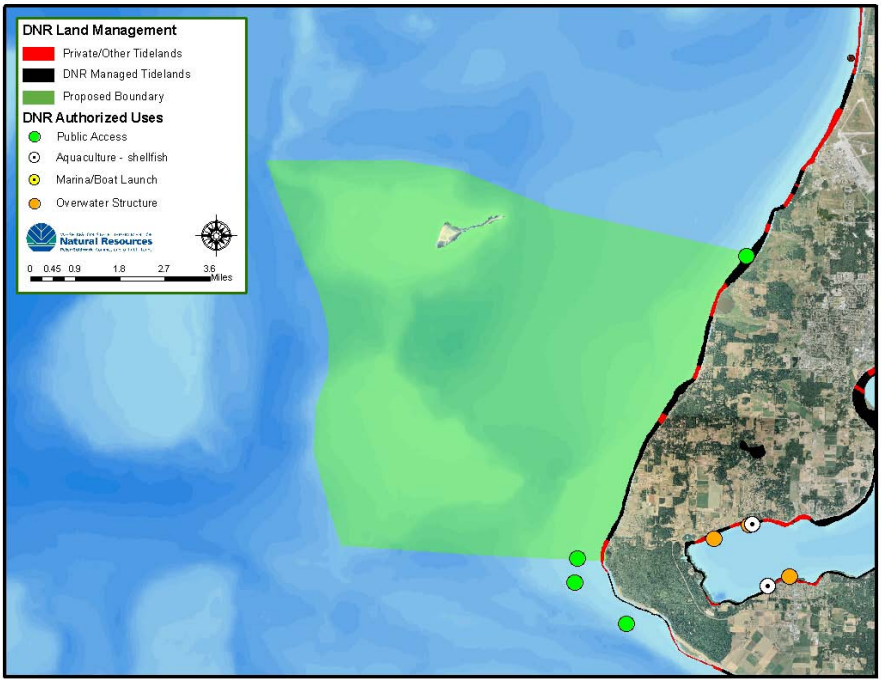


Figure 3. Proposed Aquatic Reserve Bird Usage

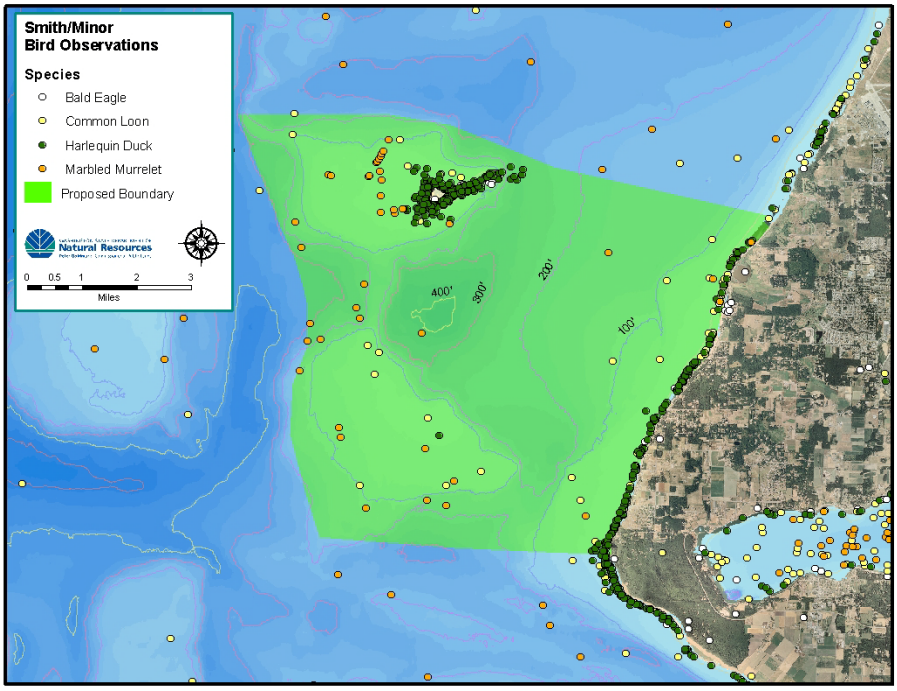


Figure 4. Pigeon Guillemot Observations

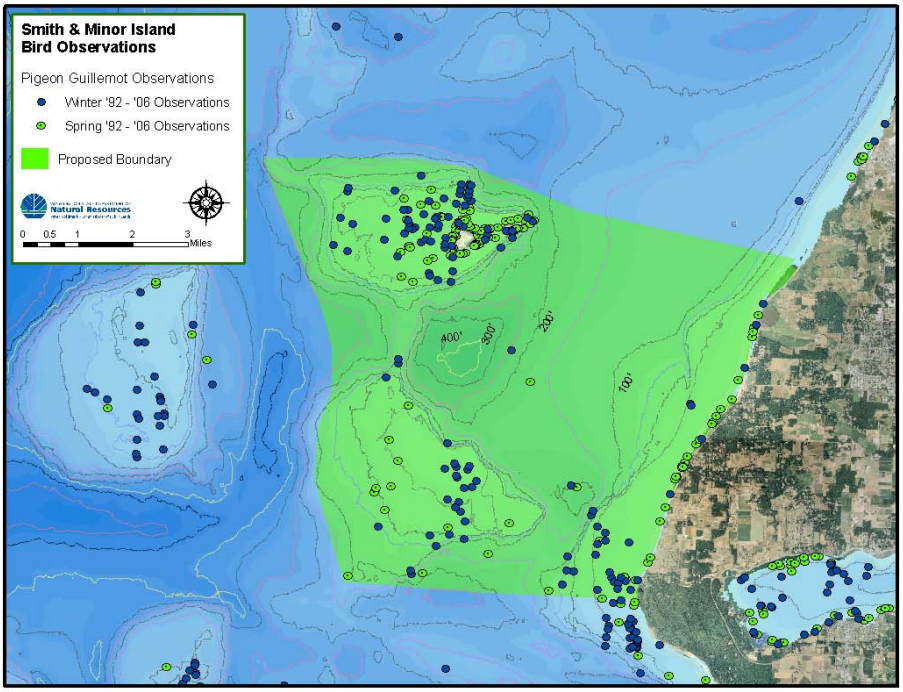


Figure 5. Rhinoceros Auklet and Tufted Puffin Observations

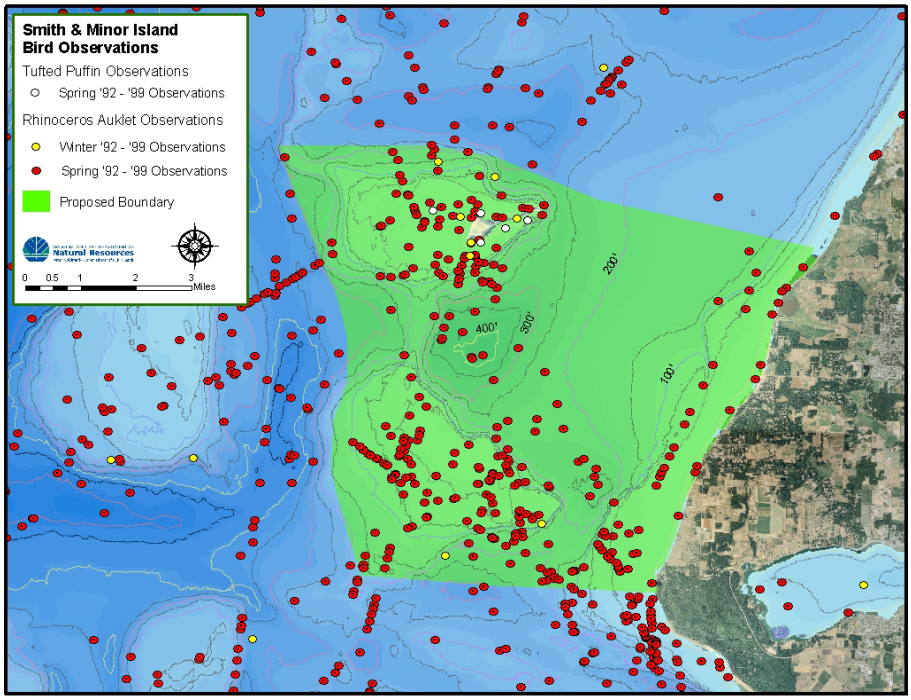


Figure 6. Aquatic Vegetation – Floating Kelp

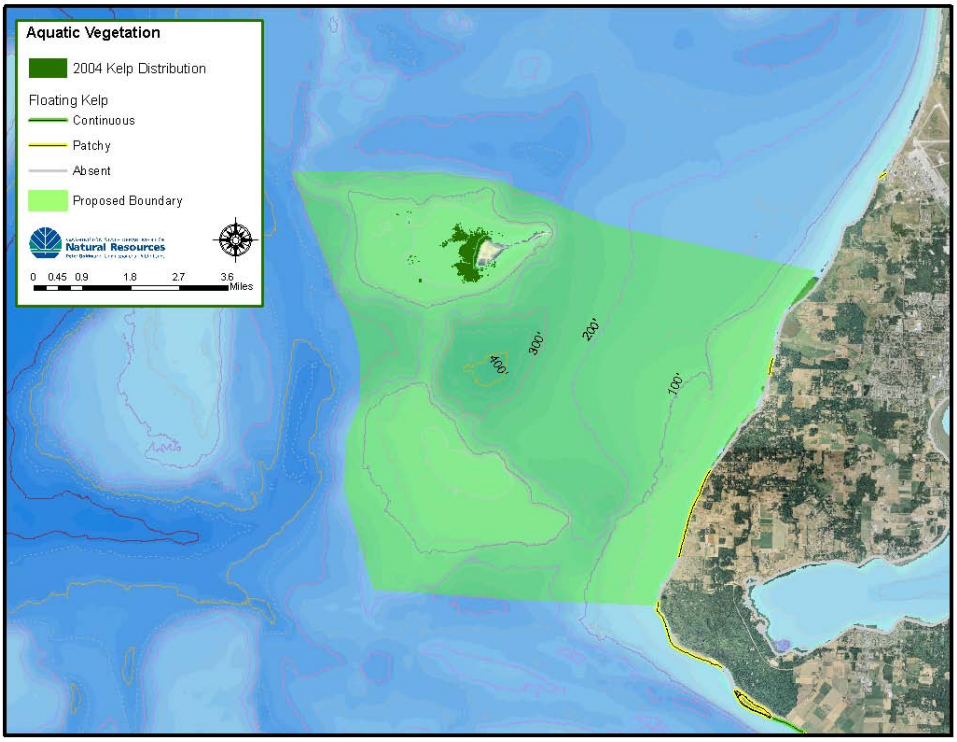


Figure 7. Aquatic Vegetation - Surfgrass

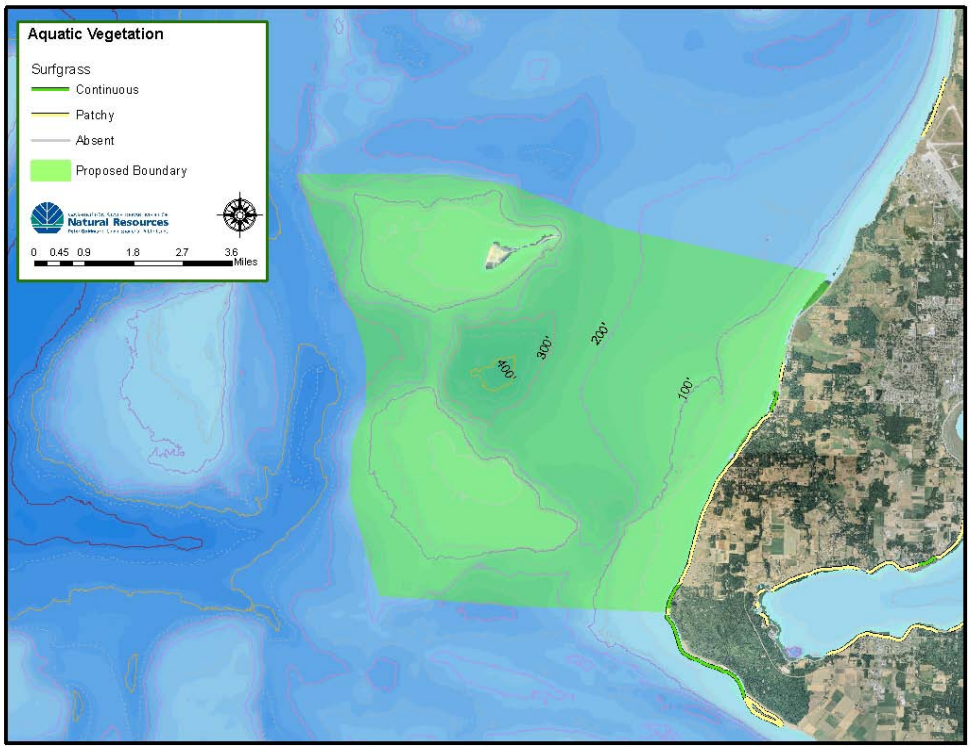


Figure 8. Shoreline Type

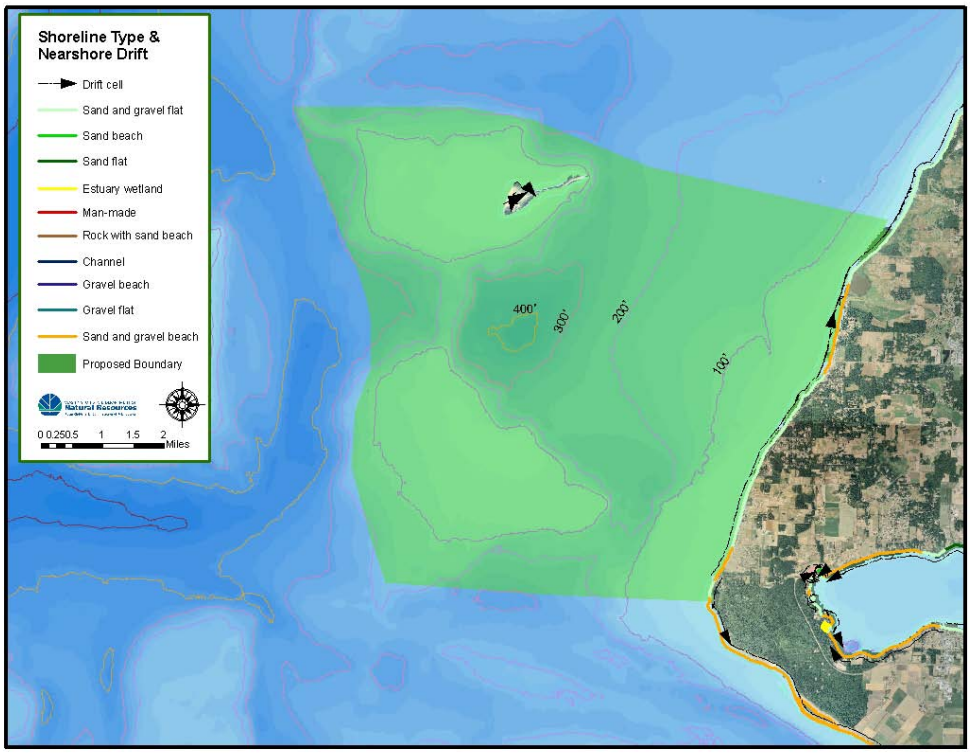
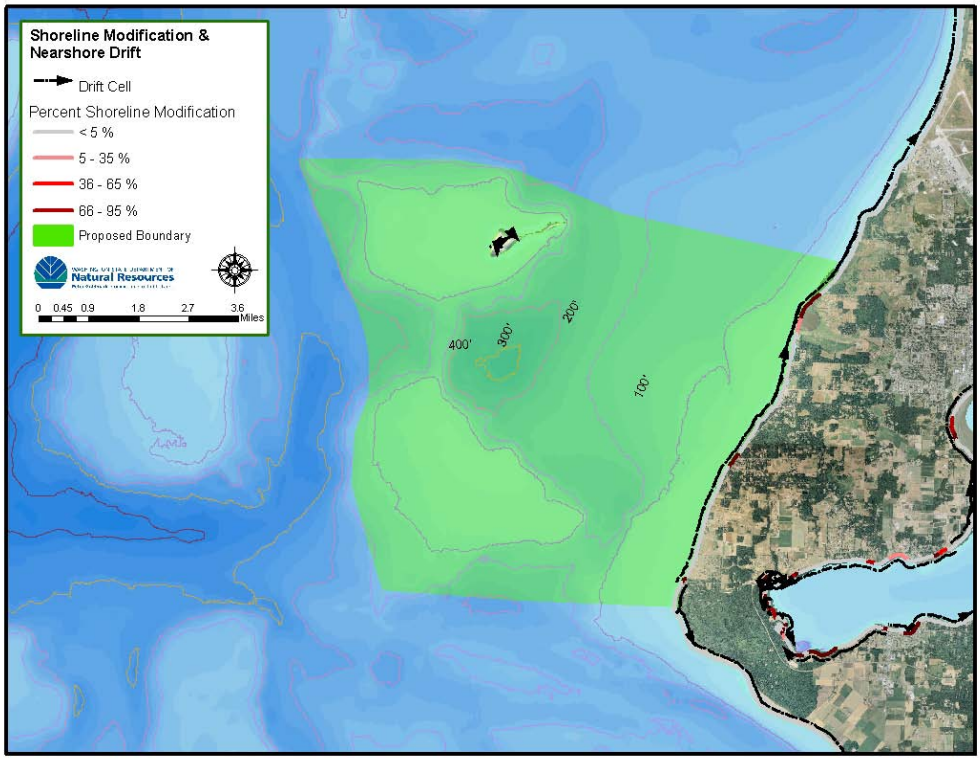


Figure 9. Shoreline Modifications & Nearshore Drift



Application for Aquatic Reserve Designation: Protection and Smith Units

Appendix B – REFERENCES AND CONTACTS

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