

## Appendix H. Sign Inventory and Maintenance Plan



## **H.1 General Information**

Dungeness National Wildlife Refuge was set aside by executive order in 1915 as a refuge, preserve, and breeding ground for native birds. Located in the northwest corner of Washington State on the Strait of Juan de Fuca, the Refuge offers a diversity of habitats including sand beaches, protected bay waters, eelgrass beds, mudflats, and forested and grass uplands. Dungeness NWR consists of the Dungeness Unit, which includes the Graveyard Spit Research Natural Area (RNA), and the Dawley Unit.

Originally the Dungeness Unit (including the Dungeness Spit) was part of a lighthouse reservation, on which the New Dungeness Lighthouse was built in 1857. Dungeness Spit is the longest natural sand spit in North America. Extending five and a half miles into the Strait of Juan de Fuca, it provides habitat for a great variety of migratory shorebirds, waterfowl, marine mammals, and other marine life within its protective reach. The tranquil waters of Dungeness Bay, with its eelgrass beds, mudflats, and tidelands provide food, shelter, and breeding grounds to support a whole ecosystem teeming with life.

Large numbers of Brant, wigeon, pintail, mallard, and bufflehead winter there. Dungeness crab, surf smelt, herring, and others breed within the bay and salmon frequent the waters surrounding the Refuge. Rare northern elephant seals haul out on the spit each year. Graveyard Spit supports some of the best remaining strand habitat within the Salish Sea. While Graveyard Spit is closed to the public, tidelands to the east and west are open seasonally. The Dungeness Spit is open to the public on the Strait side from the base of the spit to the lighthouse year round and on the bay side for the first half mile seasonally. The west beach and forest trails are open to the public year round.

The Dawley Unit, located along Sequim Bay, was established as a wildlife sanctuary in 1973. The residential area was heavily developed with the construction of aviaries, ponds, and gardens while the forested tract was altered by logging over the years. The forested area does have an established logging road system, but due to the topography, some areas were protected from further alterations and are considered good second growth forest habitat. The entire unit is closed to the public.

## **H.2 Purpose of this Plan**

The general purpose of the sign inventory and maintenance plan is to identify and quantify the signs in use while documenting their condition and assessing and prioritizing repair and replacement needs. Furthermore, the plan seeks to accomplish four additional goals. First, refuge signs are intended to convey important general information to visitors such as where the Refuge is located and where they should and should not go or what they should not do with the overall goal of reducing impact to wildlife and their habitat. Second, is to facilitate a better understanding of the importance of the Refuge to wildlife while instilling in our visitors a sense of value for wildlife and habitat conservation. It should help to illuminate the Refuge's unique history and how it is part of a larger cultural and natural perspective. Third, it intends to increase visitor safety and reduce injuries by providing important warnings. And finally, it is intended to accomplish these tasks with as little disruption to the aesthetic beauty of the Refuge as possible.

### H.3 Use and Visitation

The Dawley Unit is closed to the public. While it is primarily set aside as wildlife habitat, the Service continues to use some of the structures on a limited basis. Only regulatory signs are utilized on the unit making sign criteria and maintenance fairly straight-forward. In contrast, the Dungeness Unit is the busiest unit with the Washington Maritime National Wildlife Refuge Complex. It is estimated that more than 80,000 people visit each year. An extensive array of regulatory, information, and interpretive signs are utilized in this unit which requires an aggressive sign program. Due to the nature of beaches and the general marine environment, maintaining signs in the Dungeness Unit is challenging.

### H.4 Sign Inventory

See Table H-1 for an abbreviated sign inventory for Dungeness NWR. In addition there are approximately 300 standard Service closed area and refuge boundary signs and approximately 10 government property (no trespassing) and sensitive wildlife habitat signs in use. Examples of each are provided. See Figure H-1, Standard Service Signs.

**Figure H-1. Standard Service Signs in use on Dungeness NWR. Size: 11” X 14”**



**Table H-1. Dungeness NWR Sign Inventory**

Sign	Location	Type	Condition	Date	
<b>General Information Signs</b>					
1	Park Entrance	Voice of Am. Rd. & Lotzgesell Rd.	Info	Good	N/A
2	Ref. Entrance	Voice of Am. Rd	Info	New	11/2011
3	Entrance St. Welcome	Entrance station plaza	Info	New	8/2011
4	Bluff Trail, Welcome	West end of bluff trail	Info	New	8/2011
5	Main Tr. Info and map	Main trailhead entrance	Info/reg.	New	8/2011
6	Refuge Closes at: (time)	Main and Horse trail heads, hill	Info	Poor	N/A
7	Trail Arrow	Kiosk, right post	Info	New	8/2011
8	Office Arrow	Fee station, right post	Info	New	8/2011
9	Headquarters doors	Office entrance	Info	New	8/2011
10	Trash Recycle (3)	Right side of kiosk	Info	New	8/2011
11	Trash Recycle (3)	Left side of dumpster enclosure	Info	New	8/2011
12	Fee Station	Fee station structure	Info	New	8/2011
13	Fee Can Decals (2)	Fee canister @ main and horse tr.	Info	New/Poor	N/A
14	Restrooms w/ arrow (2)	RR sidewalk & fence	Info	Good	N/A

Sign		Location	Type	Condition	Date	
15	Lighthouse Information	Fence left of main trailhead	Info	Good	N/A	
16	Parking Area Full	Overflow lot entrance	Info	Poor	N/A	
17	Distance to Spit 1	Near County Park kiosk	Info	Good	N/A	
18	Distance to Spit 2	West end of parking lots	Info	Fair	N/A	
19	Distance to Spit 3	Middle of parking lots	Info	Poor	N/A	
20	Horse Trail Fee Sign	Horse Trail Fee Station	Info/reg	Fair	N/A	
21	Horse Arrow Symbol	Base of spit @ bottom of main tr.	Info	Poor	N/A	
22	Hiker w/ Arrow	Base of spit @ bottom of main tr.	Info	Poor	N/A	
23	No Jogging Past .5 mile	Near ½ mile marker	Info	Poor	N/A	
24	Hiker & Arrow Symbol	Lighthouse access rd.	Info	Good	N/A	
25	Map Panels (Porcelain on steel)	a	Horse Trail Kiosk	Info/reg	Fair	N/A
		b	Lighthouse boat landing area	Info/reg	Poor	N/A
		c	County Park Kiosk	Info/reg	Good	N/A
		d	Cline Spit (planned)	Info/reg	-----	
		e	Dungeness Landing (planned)	Info/reg	-----	
26	Fee Dollars at Work	Entrance to upper overlook	Info	Fair	N/A	
27	Harbor Overlook	Entrance to upper overlook	Info	Poor	N/A	
28	a	Hiker Arrow Symbol	Intersection of main & horse trails	Info	Poor	N/A
	b	Horse Arrow Symbol	Intersection of main & horse trails	Info	Poor	N/A
29	Amnesty Bucket	Entrance to upper overlook	Info	New	11/2011	
30	Maintenance Area	Mellus Cabin Gate	Info	Poor	N/A	
31	Mile Markers	a	½ Mile	Info	Poor	N/A
		b	1 Mile	Info	Good	N/A
		c	2 Mile	Info	Poor	N/A
		d	3 Mile	Info	Good	N/A
		e	4 Mile	Info	Good	N/A
<b>Interpretive Signs</b>						
34	Kiosk Interp. Panels (3)	Kiosk	Interp.	New	8/2011	
35	Main Trail Interp. (2)	Lower main trail	Interp.	New	8/2011	
36	Dungeness Spit Interp.	Steep hill to beach	Interp.	New	8/2011	
37	Spit Map	Steep hill to beach	Interp.	New	8/2011	
38	Plant Identification	Main trail (series)	Interp.	Good/Fair	N/A	
39	Bird Pictorial Guide	At entrance to upper viewing deck	Interp.	New	11/2011	
<b>Regulatory Signs</b>						
40	Entrance Regulations	Overflow parking entrance	Reg	Fair	N/A	
41	Main Trail, symbols	Main trail head	Reg	Fair	N/A	
42	Stop, Did You Pay	Main trail head	Reg	Poor	N/A	
43	Stop, Did You Pay	Horse trail head	Reg	Poor	N/A	
44	No Pets	Main trail head	Reg	Fair	N/A	

Sign	Location	Type	Condition	Date	
45	No RVs or Trailers	Overflow lot entrance	Reg	Poor	N/A
46	Horse Tr. symbols (6)	Entrance to horse trail	Reg	Good/Poor	N/A
47	No Horses on path	Paver path to HQ @ overflow lot	Reg	Good	N/A
48	Caretaker Parking	Overflow lot	Reg	Very good	2011
49	Volunteer Parking	Overflow lot	Reg	Very good	2011
50	Disabled Parking	Overflow lot	Reg	Very good	N/A
51	Disabled Parking (2)	Main lot & restroom, 1st spaces	Reg	Poor	N/A
52	15 minute parking	Restroom, 2nd space	Reg	Poor	N/A
53	Reserved Parking	Restroom maintenance access	Reg	Poor	N/A
54	Main Tr. "Gate" barrier	Main trail head	Reg	Fair	N/A
55	Crosswalk	Restroom crosswalk	Reg	Very good	N/A
56	Boating Regulations	a   Cline Spit	Reg	Poor	N/A
		b   Dungeness Landing	Reg	Poor	N/A
57	Boating Regs., Pylons	Dungeness Harbor and Bay	Reg	Very good	N/A
58	Large Format Buffer	Graveyard (3) Dungeness end (1)	Reg	Good	N/A
59	Boat Landing Zone	Lighthouse boat landing area	Reg	Poor	N/A
60	Boat Visitors to LH	Lighthouse boat landing area	Reg	Poor	N/A
61	Firearms Prohibited	Headquarters doors, front & back	Reg	New	N/A
62	Area Closed Signs	Various: bluffs, .5 mile, etc.	Reg	New/Poor	N/A
63	Refuge Boundary	Boundaries; Dungeness/Dawley	Reg	New/Poor	N/A
64	Unauthorized Entry	Boundaries; Dungeness/Dawley	Reg	New/Good	N/A
65	No Parking	Refuge parking lots	Reg	Good/Fair	N/A
66	Bank Rest., Keep Off	Lower main tr. @ lower overlook	Reg	Fair	N/A
67	No Climbing symbol	Along lower main trail and bluffs	Reg	Fair/Poor	N/A
68	Sensitive wildlife habitat	5 mile closure, Strait side of spit	Reg	New/Good	4/2012
69	Wildlife Sanctuary Closed	a   5.5 mile, End of Spit	Reg	Fair	N/A
		b   South End of Graveyard Spit	Reg	Fair	N/A
		c   West side of Graveyard Spit	Reg	Fair	N/A
<b>County Road Signs (Not Refuge Maintained)</b>					
70	HWY 101	Highway 101	Info	Good	N/A
71	Kitchen Dick Rd	Kitchen Dick Rd @ Woodcock	Info	Good	N/A
72	Old Olympic Hwy	Old Olympic Hwy @ Kitchen Dick Rd	Info	Good	N/A

Sign	Location	Type	Condition	Date	
73	Lotzsgesell Rd	Lotzsgesell Rd @ Park Entr.	Info	Good	N/A
74	Cays Rd	Cays Rd @ Lotzsgesell Rd	Info	Good	N/A
75	Voice of America Rd	Voice of Am. Rd @ Picnic area	Info	Good	N/A
76	West Anderson Rd	West Anderson Rd, east of Cays Rd	Info	Good	N/A
77	Anderson and Cays	NW Corner of Anderson & Cays	Info	Good	N/A

## H.5 Sign Specification and Placement Criteria

Signs will meet the specifications set forth in the USFWS Sign Manual. (1) Signs posted in the Refuge will be constructed of high quality durable materials including steel, marine density overlay (MDO) ¾ inch plywood, poly metal, and plastic laminates and will have steel or wooden posts and supports. Large signs should be planted in cement. All mounting hardware should be corrosion-resistant stainless steel, such as Society of Automotive Engineers (SAE) grade 316, with locking nuts. The use of temporary and/or handmade signs is discouraged.

Except as otherwise indicated, sign background color will be brown or white and lettering will be white, black, or, in the case of standard USFWS signs, dark blue. Text font will be Helvetica Medium. Reflective materials will be employed where vehicles (including boats) may encounter signs in dark conditions.

Protected shoreline areas will utilize large format signs which can be read from the water at least 100 yards offshore. These signs may also include the Service shield. Large format signs are at least 5 feet wide and 4 feet high. These signs should be well supported to protect against high winds common in the area.

Standard USFWS closed area signs will be utilized to demarcate areas not open to the public as determined by the refuge manager. These signs will be posted on standard steel or wood posts. Standard USFWS refuge boundary signs should be posted along terrestrial boundary lines and sensitive habitat signs should be utilized as needed. See Figure H-1 for examples of standard Service signs.

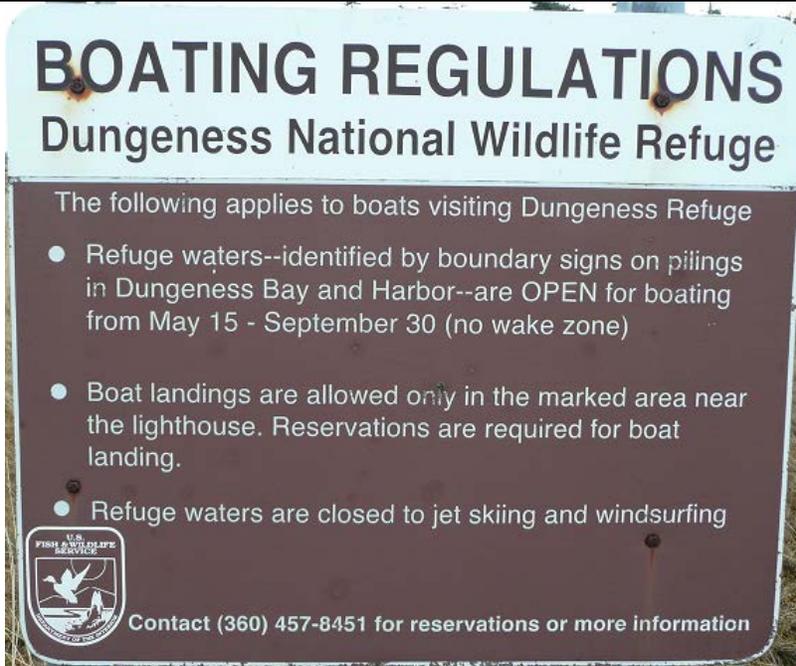
### H.5.1 Large Special Purpose (Regulatory) Signs

Due to the somewhat complicated nature of the Dungeness Unit, it is necessary to maintain a variety of large custom signs. In marine environments where wildlife disturbance is an issue, signs that can be read at distances up to 100 yards are necessary. The Refuge utilizes a variety of large format signs to inform visitors about refuge regulations including area closures. These signs are described below.

<b>Sign#: 40</b>	
Description:	Visitor Information - Entrance
Material:	MDO plywood White and brown with white and brown lettering
Text:	Dungeness National Wildlife Refuge, Visitor Information <ul style="list-style-type: none"> <li>• Dungeness Spit Trailhead</li> <li>• Entrance Fee Required</li> <li>• Refuge Closes at Sunset</li> <li>• Pets, Bicycles, Fires, and Camping Prohibited</li> </ul>
Dimensions:	66" X 48"
Location:	Voice of America Road at refuge overflow parking entrance
	

<b>Sign#: 42 and 43</b>	
Description:	Entrance fee stop sign
Material:	MDO plywood Reflective brown with white lettering and red "stop sign" symbol
Text:	Did You Pay Entrance Fee? Failure to comply with entrance fee requirement is a violation subject to penalties prescribed in 50 CFR 28.31
Dimensions:	38" X 16"
Location:	Main and Horse Trailheads
Note:	Need Replacements
	

<b>Sign#: 56a and 56b</b>	
Description:	Boating Regulations
Material:	Metal White and brown with white and brown lettering
Text:	BOATING REGULATIONS Dungeness National Wildlife Refuge The following applies to boats visiting Dungeness Refuge <ul style="list-style-type: none"> <li>• Refuge waters - identified by boundary signs on pilings in Dungeness Bay and harbor – are OPEN for boating from May 15 – September 30 (no wake zone)</li> <li>• Boat landings are allowed only in the marked area near the lighthouse. Reservations are required for boat landing.</li> <li>• Refuge waters are closed to jet skiing and windsurfing.</li> <li>• Contact (360) 457-8451 for reservations or more information</li> </ul>
Dimensions:	26" X 24"
Location:	Cline Spit and Dungeness Landing boat launches
Note:	Need Replacements



<b>Sign#: 57a and 57b</b>	
Description:	Tidelands seasonal closure
Material:	Heavy plastic on MDO plywood Reflective white or white and blue with black or white and blue lettering
Text:	WILDLIFE REFUGE AREA CLOSED EXCEPT MAY 15 – SEPT. 30 BOATING (no wake zone) AND SHELLFISHING ALLOWED UP TO 100 YARD BUFFER FROM SHORE. SHORE AND UPLAND REMAIN CLOSED. Windsurfing & Jet Skis Not Allowed
Dimensions:	24” X 42”
Location:	Refuge tidelands boundary pilings east and west of Graveyard Spit (Dungeness Bay and Harbor)



<b>Sign#: 59</b>	
Description:	Lighthouse boat landing zone, reservation required
Material:	MDO plywood Reflective white or white and blue with black or white and blue lettering
Text:	BOAT LANDING ZONE, By Reservation Only, Between yellow posts For Information Contact Dungeness National Wildlife Refuge (360) 457-8451
Dimensions:	60" X 42"
Location:	Lighthouse boat landing zone
Note:	Needs Replacement
	

<b>Sign#: 60</b>	
Description:	Lighthouse boat landing closed areas
Material:	MDO plywood Brown with white lettering and a red and yellow map
Text:	ATTENTION VISITORS, The tip of Dungeness Spit, including all beaches, tidelands, and uplands, is closed to public access to provide a sanctuary for wildlife.
Dimensions:	44" X 20"
Location:	Lighthouse boat landing zone
Note:	Needs Replacement
	

<b>Sign#: 69a, b, and c</b>	
Description:	Wildlife sanctuary closures; end of Dungeness Spit, all of Graveyard Spit
Material:	MDO plywood White with black lettering
Text:	Wildlife Sanctuary Area Closed Refuge Boundary Posted on Pilings in Bay
Dimensions:	66" X 48"
Location:	Tip of Dungeness Spit, Tip and West Side of Graveyard Spit (2)
	

### H.5.2 Posting Closed Areas on Dungeness Spit

**Bluffs:** Some of the most hazardous areas in the Refuge are the west bluffs which are permanently closed to the public. Constantly eroding, the bluffs are known to shed large amounts of material without warning. At least one visitor has been seriously injured while trespassing in the closed area and attempting to climb the bluffs. Posting signs in this dynamic environment poses a constant challenge. Wave action at the base of the bluffs can quickly undermine sign posts on the beach resulting in regular loss of signs and posts. Refuge staff has experimented with different posting methods including posting signs directly on the bluffs but none have proven fully successful.



Currently, the best approach is to continuously post signs on the beach approximately 10 feet away from the bluffs to create a safety buffer and allow for eroded material to collect. It is best to post in locations that present the most “inviting” avenues of access such as gullies and dirt piles. Signs should be posted approximately every 25 feet initially from the base of the Spit for the first hundred feet, 5 signs, and then every 75 to 100 feet thereafter to the western refuge boundary. Signs should be inspected daily and replaced as needed.

**Dungeness Spit:** Although somewhat less dynamic than the west beach area, the “Spit” also presents a challenge for maintaining signs. Installing posts on the driftwood “spine” of the spit can be extremely difficult due to buried logs and rocks. Winter storms regularly dislodge and destroy signs

making it difficult to keep closed areas adequately posted. Signs along the entire “Spit” should be inspected monthly and replaced as needed. Each spring a team of staff and volunteers should conduct a comprehensive sign “replenishment” campaign.

The first ½ mile of the Spit is closed seasonally from October 1 through May 14. While closed signs are removed during the open season, posts should be left in place. In late September missing sign posts should be replaced in preparation for posting closure signs. Signs at the base of the spit should be placed no more than 25 feet apart on the service road and the first 150 feet of the spit. Additionally, a rope should span this area from post to post to provide a visual barrier and aid in enforcement. Signs after that should be posted every 75 to 100 feet to the ½ mile marker. Signs demarcating the ½ mile closure line on the inside of the spit should be no more than 25 feet apart extending from the driftwood spine into the harbor. These signs should be removed seasonally to reduce visitor confusion but the posts should be left in place. This area experiences a high level of trespass and should be well defined.

The second ½ mile should be well posted with signs every 100 to 150 feet. After the first mile marker signs can be up to 200 feet apart except that they should be more numerous in the 4.5-5 mile section near the lighthouse where the spit is narrow and visitors are more tempted to cross over to the Bay side. Wash-over areas are often clear of driftwood and present inviting paths for trespassers. For that reason they are good places to post signs, however, they are also more likely places for signs to be lost to wave action. When posting in these areas signs should be placed on higher ground near the wash-over “path.”

**The Wildlife Sanctuary, 5 mile closure:** Another area that experiences regular trespass is the “wildlife sanctuary” at the end of the “Spit.” At low tide beach walkers may inadvertently wander into this area. Because it is difficult to maintain signs on the beach, a clear line of signs should be visible on the upland area from the rip rap edge across the spit to the Bay. These signs, particularly the ones at the ends of the line, should be inspected weekly and replaced as needed. The inclusion of standard Service “Sensitive Wildlife Habitat” signs should help deter trespass.

## **H.6 Sign Inspection and Maintenance**

The refuge caretaker in conjunction with staff will be responsible for routine inspections and maintenance of signs. A sign inspection form should be maintained for each non-standard sign. See Figure H-2. Inspection forms are not necessary for standard Service signs which should be visually inspected and replaced as needed. In addition, caretakers and staff will assess for sign damage as soon after high wind and water events as possible to insure signs have not been lost or damaged. Any sign damage that is not immediately remedied will be reported to the refuge manager or deputy manager. Materials necessary to repair signs will be stored in the maintenance building. These materials will include replacement USFWS shields, posts, cribbing, tools, and bolts. Due to their size and expense most large replacement signs will be stored at the Refuge Complex Headquarters at 715 Holgerson Rd. in Sequim, Washington, or made to order as needed. A supply of standard Service signs will be maintained in the storage shed at the Caretaker’s cabin. A review of this sign plan will occur every 5 years unless conditions necessitate an earlier review.

**Figure H-2. Sign Inspection Form.**

**Washington Maritime NWRC  
Sign Inspection Checklist**

Name of Inspector: \_\_\_\_\_

Refuge: \_\_\_\_\_ Unit: \_\_\_\_\_

Date: \_\_\_\_/\_\_\_\_/\_\_\_\_ Time: \_\_\_\_\_

Sign Inventory ID:

Sign Location: \_\_\_\_\_ Description: \_\_\_\_\_

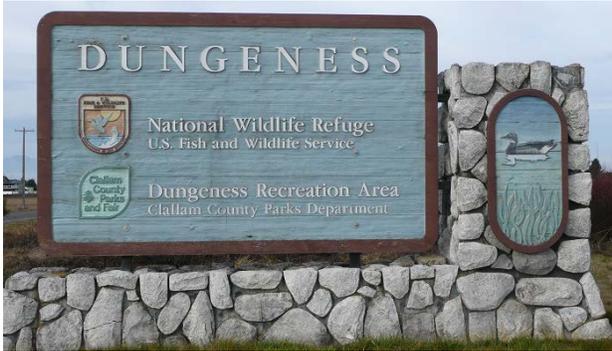
Problem	Substrate	Face (overlay & lettering)	Finish (Paint)	Sign supports	Hardware	Comments
Missing						
Blistering						
Corroded						
Cracking						
Dirty						
Damaged						
Decal faded/damaged						
Faded/readable						
Faded/unreadable						
Hanging or fallen						
Ply Separation						
Rotting						
Scratching or Tearing						
Unstable						

<b>Recommendations</b>						
Clean						
Cut vegetation						
On-site repair						
Shop repair						
Remove						
Replace decal						
Replace sign						
Replace hardware/post(s)						

## **H.7 References**

U.S. Fish and Wildlife Service (USFWS). 1992. U.S. Fish and Wildlife Service sign manual, director's memorandum signed by Acting Assistant Regional Director Carolyn Bohan, May 15, 1992. U.S. Department of Interior, Fish and Wildlife Service, Region 1. Portland, OR.

**Dungeness NWR Sign Reference Photos: Information (Sign #1 – 32)**



1a. County Park Entrance (east side)



1b. County Park Entrance (west side)



2. Voice of America Rd



3a. Refuge Kiosk (front)



3b. Refuge Kiosk (back)



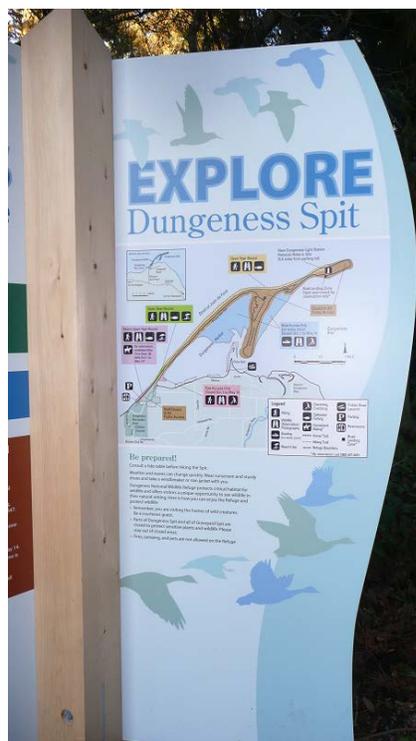
4. Bluff Trail



5a. Main Trailhead



5b. Main Trailhead (Left)



5c. Main Trailhead (Right)



5d. Main Trailhead (Back)



6a. Main Trailhead



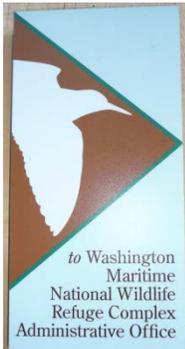
6b. Horse Trailhead



6c. Top of Hill to Spit



7. Kiosk



8. Fee Station



9a. Headquarters Entrance (left)



9b. Headquarters Entrance (right)



9c. HQ (left and right)



10. Kiosk



11. Main Parking Lot



12. Fee Station



13a. Main Trail



13b. Horse Trail



14a. Entrance Station Crosswalk



14b. Parking Lot Fence



15. Main Trail Head (Maintained by NDLSA)



16. Overflow Parking Lot Entrance



17. Near County Kiosk



18. West End of Parking Lot



19. Middle of Parking Lot



20a. Horse Trail Fee Station



20b. Horse Trail Fee Station



21. Spit Service Rd



22. Spit Service Rd



23. 1/2 Mile Marker



24. Lighthouse Service Rd



25a. Horse Trailhead



25b. Lighthouse Landing Area



25c. County Park Kiosk



26. Upper Overlook



27. Upper Overlook



28a and b. Horse and Main Trail Junction



29. Caretaker's Cabin



30. Caretaker's Cabin Gate



31a. Spit



31b. Spit



31c. Spit

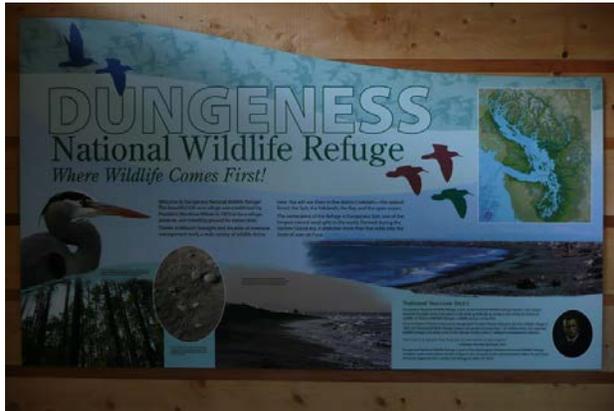


31d. Spit



31e. Spit

Dungeness NWR Sign Reference Photos: Interpretive (Sign #34 – 39)



34a. Kiosk (left)



34b. Kiosk (center)



34c. Kiosk (right)



35a. Lower Main Trail (front)



35b. Lower Main Trail (back)



36. Lower Main Trail, Hill



37. Lower Main Trail, Hill



38a. Main Trail



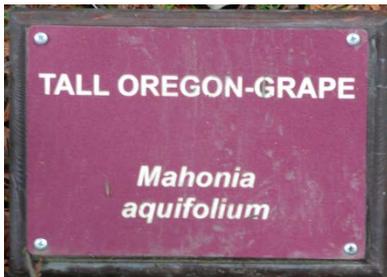
38b. Main Trail



38c. Main Trail



38d. Main Trail



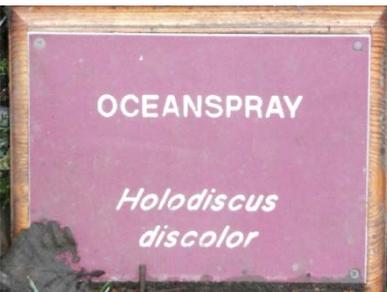
38e. Main Trail



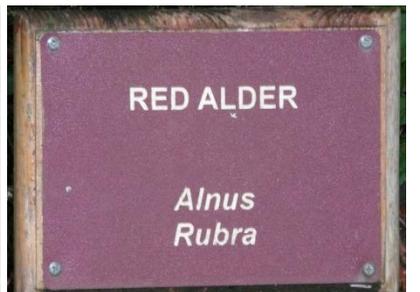
38f. Main Trail



38g. Main Trail



38h. Main Trail



38i. Main Trail



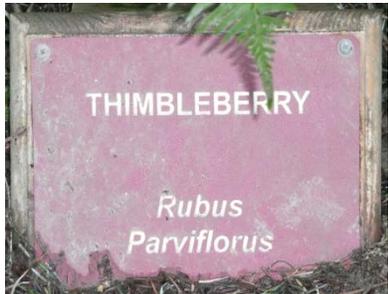
38j. Main Trail



38k. Main Trail



38l. Main Trail



38m. Main Trail



38n. Main Trail



38o. Main Trail



38p. Main Trail



39. Main Trail, Top of Hill

Dungeness NWR Sign Reference Photos: Regulatory (Sign #40 – 69)



40. Voice of America Rd at Refuge Entrance



41. Main Trailhead



42. Main Trail



43. Horse Trail



44. Main Trailhead



45. Overflow Parking Lot



46a. Horse Trail Gate



46b



46c



47. Path to Headquarters



48. Overflow Lot



49. Overflow Lot



50. Overflow Lot



51. Main Parking Lot



52. Restroom Parking



53. Restroom



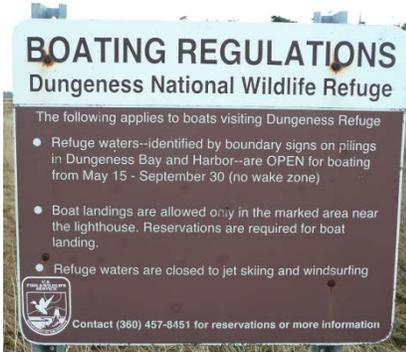
54a. Main Trail "Gate" (front)



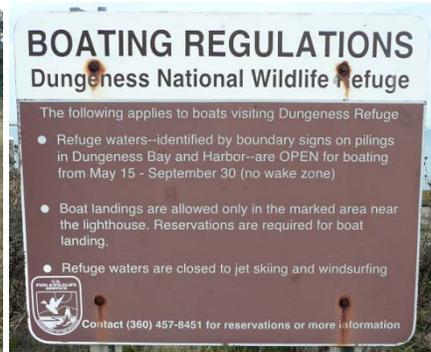
54b. Main Trail "Gate" (back)



55. Restroom Crosswalk



56a. Cline Spit



56b. Dungeness Landing



57a. Harbor/Bay Pilings 57b. Harbor/Bay Pilings



60. Lighthouse Boat Landing Area



61. Lighthouse Boat Landing Area



62. Headquarters Entrance

62 – 65: Standard USFWS Signs (See Figure H-1, Standard Service Signs in use on Dungeness NWR)



66. Main Tr Hill



67. Bluffs



68. LH Beach



69a, b, and c. Graveyard Spit and End of Dungeness Spit

**Dungeness NWR Sign Reference Photos: County (Sign #70 – 77)**



70. Highway 101



71. Kitchen Dick Rd at Woodcock Rd



72. Old Olympic Highway at Kitchen Dick Rd



73. Lotzsgesell Rd at County Park Entrance



74. Cays Rd



75. Voice of America Rd



76. East Anderson Dr at Cays Rd



77. West Anderson Dr and Cays Rd

**Document continues on next page.**

## Appendix I. Acronyms, Glossary and Scientific Names

### I.1 Acronyms

ABA	Architectural Barriers Act
ABC	American Bird Conservancy
ADA	Americans with Disabilities Act
ARPA	Archaeological Resources Protection Act
ATSDR	Agency for Toxic Substances and Disease Registry
Audubon	National Audubon Society
BBS	Breeding Bird Survey
BCC	Birds of Conservation Concern
BIDEH	Biological Integrity, Diversity, and Environmental Health
BLM	Bureau of Land Management
BMC	Birds of Management Concern
BMPs	Best Management Practices
BOR	Bureau of Reclamation
BP	Before Present
CCP	Comprehensive Conservation Plan
CD	Compatibility Determination
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CIG	Climate Impacts Group
COASST	Coastal Observation and Seabird Survey Team
Complex	Washington Maritime National Wildlife Refuge Complex
COSEWIC	Committee on the Status of Endangered Wildlife in Canada
CWA	Clean Water Act
DAHP	Washington State Department of Archaeology and Historic Preservation
DAWACT	Dungeness Area Watershed Analysis Cooperative Team
DBH	Diameter at Breast Height
Director	Director of the U.S. Fish and Wildlife Service
DOE	U.S. Department of Energy
DRA	Dungeness Recreation Area
DWD	Downed Woody Debris
EA	Environmental Assessment
EDPU	Elwha-Dungeness Planning Unit
EE	Environmental Education
EIS	Environmental Impact Statement
ENSO	El Niño/Southern Oscillation
EO	Executive Order
ESA	Endangered Species Act
ESU	Evolutionarily Significant Unit
FIRFA	Federal Insecticide, Fungicide, and Rodenticide Act
FMP	Fire Management Plan
FR	Federal Register
FWA	Fish and Wildlife Act of 1956
FWS	U.S. Fish and Wildlife Service (also, Service, USFWS)

FY	Fiscal Year
GAO	Government Accountability Office
GHG	Greenhouse Gases
GIS	Geographic Information System
GPS	Global Positioning System
HMP	Habitat Management Plan
IAC	Interagency Committee for Outdoor Recreation
IBA	Important Bird Areas
IPCC	Intergovernmental Panel on Climate Change
IPM	Integrated Pest Management
LCC	Land Conservation Cooperative
LE	Law Enforcement
LWCF	Land and Water Conservation Fund
MHHW	Mean Higher High Water
MHW	Mean High Water
MLLW	Mean Lower Low Water
MLW	Mean Low Water
MOA	Memorandum of Agreement
MOU	Memorandum of Understanding
MSL	Mean Sea Level
MTL	Mean Tide Level
NAGPRA	Native American Graves Repatriation Act
NAS	National Academy of Sciences
NASA	National Aeronautics and Space Administration
NAVD88	North American Vertical Datum 1988
NAWMP	North American Waterfowl Management Plan
NCDC	National Climatic Data Center
NDLSA	New Dungeness Light Station Association
NEPA	National Environmental Policy Act
NGO	Non-governmental Organization
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOA	Notice of Availability
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NRC	Natural Resource Consultants
NRHP	National Register of Historic Places
NSRE	National Survey on Recreation and the Environment
NWR	National Wildlife Refuge
NWRS	National Wildlife Refuge System
OCBP	Ocean Carbon and Biogeochemistry Program
OCNMS	Olympic Coast National Marine Sanctuary
OFM	State of Washington's Office of Financial Management
OMB	Office of Management and Budget
ONF	Olympic National Forest (also Olympic NF)
ONP	Olympic National Park (also Olympic NP)
OPAS	Olympic Peninsula Audubon Society
PDO	Pacific Decadal Oscillation
PFT	Permanent full time

PIF	Partners in Flight
PLO	Public Land Order
PP	Presidential Proclamation
PRBO	Point Reyes Bird Observatory
PRPA	Paleontological Resources Protection Act
PSAT	Puget Sound Action Team
PSNERP	Puget Sound Nearshore Ecosystem Restoration Project
PSWQAT	Puget Sound Water Quality Action Team)
PTC	Peninsula Trails Coalition
PUP	Pesticide Use Proposal
R1	Region 1 of the FWS (WA, OR, HI, ID)
RC&DC	North Olympic Peninsula Resource Conservation & Development Council
RCO	Washington State Recreation and Conservation Office
RNA	Research Natural Area
ROC	Resource of Concern
SAMMS	Service Asset Management System
SCORP	Statewide Comprehensive Outdoor Recreation Plan
SDTF 2003	Spray Drift Task Force 2003
SHPO	State Historic Preservation Office
SLAMM	Sea Level Affecting Marshes Model
SO	Secretarial Order
SUP	Special Use Permit
T & E	Threatened or Endangered Species
TMDL	Total Maximum Daily Load
TNC	The Nature Conservancy
U.S.C.	United States Code
USC&GS	U.S. Coastal and Geodetic Survey
USCG	U.S. Coast Guard
USDA	U.S. Department of Agriculture
USDC	U.S. Department of Commerce
USDI	U.S. Department of the Interior
USEPA	U.S. Environmental Protection Agency (also, EPA)
USFS	U.S. Forest Service
USFWS	U.S. Fish and Wildlife Service
USGCRP	U.S. Global Change Research Program
USGS	U.S. Geological Survey
USHCN	U.S. Historical Climatology Network
WDEQ	Washington Department of Environmental Quality
WDFW	Washington Department of Fish and Wildlife
WDNR	Washington Department of Natural Resources
WDOE	Washington Department of Energy
WRCC	Western Regional Climate Center
WSDA	Washington Department of Agriculture

## I.2 Glossary

**Adaptive Management.** Refers to a process in which policy decisions are implemented within a framework of scientifically driven experiments to test predictions and assumptions inherent in a management plan. Analysis of results help managers determine whether current management should continue as is or whether it should be modified to achieve desired conditions.

**Alternative.** 1. A reasonable way to fix the identified problem or satisfy the stated need (40 CFR 1500.2). 2. Alternatives are different means of accomplishing refuge purposes and goals and contributing to the System mission (Service Manual 602 FW 1.6).

**Anadromous.** A fish that hatches in freshwater, migrates to the ocean to live and grow, and returns to freshwater to spawn.

**BIDEH.** Biological integrity, diversity and environmental health represented by native fish, wildlife, plants and their habitats as well as those ecological processes that support them.

**Biological Diversity.** The variety of life and its processes, including the variety of living organisms, the genetic differences among them, and the communities and ecosystems in which they occur (Service Manual 052 FW 1.12B). The System's focus is on indigenous species, biotic communities, and ecological processes. Also referred to as Biodiversity.

**Compatible Use.** A proposed or existing wildlife-dependent recreational use or any other use of a national wildlife refuge that, based on sound professional judgment, will not materially interfere with or detract from the fulfillment of the National Wildlife Refuge System mission or the purposes of the national wildlife refuge (Service Manual 603 FW 2.6). A compatibility determination supports the selection of compatible uses and identifies stipulations or limits necessary to ensure compatibility.

**Comprehensive Conservation Plan (CCP).** A document that describes the desired future conditions of a refuge or planning unit and provides long-range guidance and management direction to achieve the purposes of the refuge; helps fulfill the mission of the Refuge System; maintains and, where appropriate, restores the ecological integrity of each refuge and the Refuge System; and meets other mandates. (Service Manual 602 FW 1.6).

**Concern.** See definition of issue.

**Cover Type.** The type of vegetation in an area. Often referred to as percent cover or the % of ground covered by vegetation type (e.g. 20% shrub cover).

**Cultural Resources.** The remains of sites, structures, or objects used by people in the past.

**Cultural Resource Inventory.** A professionally conducted study designed to locate and evaluate evidence of cultural resources present within a defined geographic area. Inventories may involve various levels, including a background literature search, a comprehensive field examination to identify all exposed physical manifestations of cultural resources, or a sample inventory to project site distribution and density over a larger area. Evaluation of identified cultural resources to determine eligibility for the National Register follows the criteria found in 36 CFR 60.4 (Service Manual 614 FW 1.7).

**Demography.** The study of life-history parameters such as adult survival, fledgling success, number of broods raised per year.

**Disturbance.** Significant alteration of wildlife behavior or habitat structure and composition. May be natural (e.g., fire) or human-caused events (e.g., aircraft over flight).

**Ecosystem.** A dynamic and interrelating complex of plant and animal communities and their associated non-living environment.

**Ecosystem Management.** Management of natural resources using system-wide concepts to ensure that all plants and animals in ecosystems are maintained at viable levels in native habitats and basic ecosystem processes are perpetuated indefinitely.

**Endangered Species (Federal).** A plant or animal species listed under the Endangered Species Act that is in danger of extinction throughout all or a significant portion of its range.

**Endangered Species (State).** A plant or animal species in danger of becoming extinct or extirpated in Washington within the near future if factors contributing to its decline continue. Populations of these species are at critically low levels or their habitats have been degraded or depleted to a significant degree.

**Environmental Assessment (EA).** A concise public document, prepared in compliance with the National Environmental Policy Act, that briefly discusses the purpose and need for an action, alternatives to such action, and provides sufficient evidence and analysis of impacts to determine whether to prepare an environmental impact statement or finding of no significant impact (40 CFR 1508.9).

**Finding of No Significant Impact (FONSI).** A document prepared in compliance with the National Environmental Policy Act, supported by an environmental assessment, that briefly presents why a federal action will have no significant effect on the human environment and for which an environmental impact statement, therefore, will not be prepared (40 CFR 1508.13).

**Fire Regime.** A natural fire regime is a general classification of the role fire would play across a landscape in the absence of modern human mechanical intervention, but including the influence of aboriginal burning.

**Focal Resources.** Plant and animal species that are most representative of refuge purposes, BIDEH and other FWS and ecosystem priorities. Conservation and management of these species will guide refuge management in the future. See Priority Resources of Concern and Other Benefiting Species.

**Forb.** A broad-leaved, herbaceous plant; for example, a columbine.

**Goal.** A descriptive, open-ended, and often broad statement of desired future conditions that conveys a purpose, but does not define measurable units (Service Manual 602 FW 1.6).

**Habitat.** Suite of existing environmental conditions required by an organism for survival and reproduction. The place where an organism typically lives.

**Habitat Type.** See Vegetation Type.

**Habitat Restoration.** Management emphasis designed to move ecosystems to desired conditions and processes, and/or to healthy ecosystems.

**Invasive Species.** A nonnative species whose introduction causes or is likely to cause economic or environmental harm. Also referred to as exotic or non-native species.

**Inventory.** A survey that documents the presence, relative abundance, status and/or distribution of abiotic resources, species, habitats, or ecological communities at a particular time. Often referred to as baseline inventory.

**Issue.** Any unsettled matter that requires a management decision (e.g., a Service initiative, opportunity, resource management problem, a threat to the resources of the unit, conflict in uses, public concern, or the presence of an undesirable resource condition) (Service Manual 602 FW 1.6).

**Management Alternative.** See Alternative.

**Migration.** The seasonal movement from one area to another and back.

**Mission Statement.** Succinct statement of a unit's purpose and reason for being.

**Monitoring.** A survey repeated through time to determine changes in the status and/or demographics of abiotic resources, wildlife or plants, habitat, or ecological communities.

**National Environmental Policy Act of 1969 (NEPA).** Requires all agencies, including the Service, to examine the environmental impacts of their actions, incorporate environmental information, and use public participation in the planning and implementation of all actions. Federal agencies must integrate NEPA with other planning requirements, and prepare appropriate NEPA documents to facilitate better environmental decision making (40 CFR 1500).

**National Wildlife Refuge.** A designated area of land, water, or an interest in land or water within the National Wildlife Refuge System.

**National Wildlife Refuge System.** All lands, waters and interests therein administered by the Service as wildlife refuges, wildlife ranges, wildlife management areas, waterfowl production areas, and other areas for the protection and conservation of fish and wildlife, including those that are threatened with extinction.

**National Wildlife Refuge System Mission.** The mission is to administer a national network of lands and waters for the conservation, management, and where appropriate, restoration of the fish, wildlife, and plant resources and their habitats within the United States for the benefit of present and future generations of Americans.

**Native Species.** Species that normally live and thrive in a particular ecosystem.

**Noxious species.** Any plant or plant product that can directly or indirectly injure or cause damage to crops (including nursery stock or plant products), livestock, poultry, or other interests of agriculture,

irrigation, navigation, the natural resources of the United States, the public health, or the environment. Control of these species is mandated by law.

**Objective.** An objective is a concise target statement of what will be achieved, how much will be achieved, when and where it will be achieved, and who is responsible for the work. Objectives are derived from goals and provide the basis for determining management strategies. Objectives should be attainable and time-specific and should be stated quantitatively to the extent possible. If objectives cannot be stated quantitatively, they may be stated qualitatively (Service Manual 602 FW 1.6).

**Obligate Species.** Species that require a specific habitat type or plant species for their existence.

**Ocean Acidification.** The ongoing decrease in the pH of the Earth's oceans, caused by their uptake of anthropogenic carbon dioxide from the atmosphere.

**Other Benefiting Species.** Native species, other than priority resources of concern and focal resources, that will benefit from management actions.

**Paleontology.** The study of prehistoric life, including organisms' evolution and interactions with each other and their environments.

**Passerine.** See songbird

**Pinniped.** A suborder of carnivores that are marine mammals, have flippers, and eat mostly fish and marine invertebrates (e.g., sea lions, seals).

**Plant Association.** A classification of plant communities based on the similarity in dominants of all layers of vascular species in a climax community.

**Plant Community.** An assemblage of plant species unique in its composition; occurs in particular locations under particular influences; a reflection or integration of the environmental influences on the site such as soils, temperature, elevation, solar radiation, slope, aspect, and rainfall; denotes a general kind of climax plant community (e.g., Sitka spruce).

**Preferred Alternative.** This is the alternative determined (by the decision maker) to best: achieve a refuge's purpose(s), vision, and goals; contributes to the Refuge System mission; addresses the significant issues; and is consistent with principles of sound fish and wildlife management.

**Priority Resources of Concern.** Habitats that are most representative of refuge BIDEH, as well as other FWS and ecosystem priorities that were chosen as resources that will guide refuge management in the future. See Focal Resources.

**Priority Species.** Fish and wildlife species that the Washington Department of Fish and Wildlife believe require protective measures and/or management guidelines to ensure their perpetuation. Priority species include the following: (1) state listed and candidate species; (2) species or groups of animals susceptible to significant population declines within a specific area or statewide by virtue of their inclination to aggregate (e.g., seabird colonies); and (3) species of recreational, commercial, and/or Tribal importance.

**Public.** Individuals, organizations, and groups; officials of Federal, state, and local government agencies; Indian tribes; and foreign nations. It may include anyone outside the core planning team. It includes those who may or may not have indicated an interest in Service issues and those who do or do not realize that Service decisions may affect them.

**Purpose(s) of the Refuge.** The purpose of a refuge is specified in or derived from the law, proclamation, executive order, agreement, public land order, donation document, or administrative memorandum establishing, authorizing, or expanding a refuge, refuge unit, or refuge subunit (Service Manual 602 FW 1.6).

**Refuge Goal.** See Goal.

**Refuge Purposes.** See Purposes of the Refuge.

**Salish Sea.** A single estuarine ecosystem that extends from the north end of the Strait of Georgia to the west end of the Strait of Juan de Fuca and south to the southern extent of Puget Sound. It encompasses the inland marine waters of Southern British Columbia, Canada and northern Washington, USA (Freelan 2009).

**Seabird.** A group of birds that obtain at least some food from the ocean by traveling some distance over its surface. They also typically breed on islands and along coastal areas. Seabirds include: gulls, alcids, penguins, albatrosses, storm-petrels, and cormorants, among others.

**Songbirds.** (Also Passerines) A category of birds that are medium to small, perching land birds. Most are territorial singers and migratory.

**Step-down Management Plans.** Step-down management plans provide the details necessary to implement management strategies identified in the Comprehensive Conservation Plan (Service Manual 602 FW 1.6).

**Strategy.** A specific action, tool, or technique or combination of actions, tools, and techniques used to meet unit objectives (Service Manual 602 FW 1.6).

**Succession.** The observed process of change in the species structure of an ecological

**T-sheet.** A historic type of topographic map produced by the U.S. Coast and Geodetic Survey.

**Threatened Species (Federal).** Species listed under the Endangered Species Act that are likely to become endangered within the foreseeable future throughout all or a significant portion of their range.

**Threatened Species (State).** A plant or animal species likely to become endangered in Washington within the near future if factors contributing to population decline or habitat degradation or loss continue.

**Tidelands.** Submerged lands and beaches that are located between ordinary high tide and extreme low tide.

**Vegetation Type, Habitat Type, Forest Cover Type.** A land classification system based upon the concept of distinct plant associations.

**Vision Statement.** A concise statement of the desired future condition of the planning unit, based primarily upon the System mission, specific refuge purposes, and other relevant mandates (Service Manual 602 FW 1.6).

**I.3 Scientific Names**

The following tables contain the common and scientific names of plants and animals that are mentioned in this CCP.

**I-1. Common and Scientific Names of Plants Mentioned in this CCP**

Common Name	Scientific Name
American dunegrass	<i>Elymus mollis</i>
American glasswort	<i>Salicornia virginica</i>
Bigleaf maple	<i>Acer macrophyllum</i>
Black knotweed	<i>Polygonum paronychia</i>
Bohemian knotweed	<i>Polygonum bohemicum</i>
Bull thistle	<i>Cirsium vulgare</i>
Canada thistle	<i>Cirsium arvense</i>
Cattail	<i>Typha latifolia</i>
Caulerpa	<i>Caulerpa</i> ssp.
Cheatgrass	<i>Bromus tectorum</i>
Common cordgrass	<i>Spartina angelica</i>
Common eelgrass	<i>Zostera marina</i>
Dalmatian toadflax	<i>Linaria dalmatica</i>
Diffuse knapweed	<i>Centaurea diffusa</i>
Douglas-fir	<i>Pseudotsuga menziesii</i> ssp. <i>menziesii</i>
Dull Oregon grape	<i>Mahonia nervosa</i>
Dwarf mistletoe	<i>Arceuthobium campylopodum</i>
English holly	<i>Ilex aquifolium</i>
English ivy	<i>Hedera helix</i>
Evergreen blackberry	<i>Rubus laciniatus</i>
False lily-of-the-valley	<i>Maianthemum dilatatum</i>
Field bindweed	<i>Convolvulus arvensis</i>
Garlic mustard	<i>Alliaria petiolata</i>
Grand fir	<i>Abies grandis</i>
Herb Robert	<i>Geranium robertianum</i>
Himalayan blackberry	<i>Rubus armeniacus</i>
Japanese eelgrass	<i>Zostera japonica</i>
Japanese knotweed	<i>Polygonum cuspidatum</i>
Large-headed sedge	<i>Carex macrocephala</i>
Lawnweed	<i>Soliva sessilis</i>
Meadow knapweed	<i>Centaurea jacea</i> x <i>nigra</i>
Musk thistle	<i>Carduus nutans</i>
Oceanspray	<i>Holodiscus discolor</i>

<b>Common Name</b>	<b>Scientific Name</b>
Oxeye daisy	<i>Leucanthemum vulgare</i>
Pacific madrone	<i>Arbutus menziesii</i>
Pacific rhododendron	<i>Rhododendron macrophyllum</i>
Poison hemlock	<i>Conium maculatum</i>
Purple loosestrife	<i>Lythrum salicaria</i>
Red alder	<i>Alnus rubra</i>
Red elderberry	<i>Sambucus racemosa</i> ssp. <i>pubens</i>
Red fescue	<i>Festuca rubra</i>
Russian knapweed	<i>Centaurea repens</i>
Salal	<i>Gaultheria shallon</i>
Salmonberry	<i>Rubus spectabilis</i>
Sargassum	<i>Sargassum</i> ssp.
Scotch broom	<i>Cytisus scoparius</i>
Scotch thistle	<i>Onopordum ancanthium</i>
Sea lettuce	<i>Ulva</i> spp
Seashore saltgrass	<i>Distichlis spicata</i> var. <i>spicata</i>
Seaside plantain	<i>Plantago maritima</i> ssp. <i>juncoides</i>
Silver burweed	<i>Ambrosia chamissonis</i>
Slough sedge	<i>Carex obnupta</i>
Spotted knapweed	<i>Centaurea maculosa</i>
Spurge laurel	<i>Daphne laureola</i>
St. Johns wort	<i>Hypericum perforatum</i>
Sword fern	<i>Polystichum munitum</i>
Tansy Ragwort	<i>Senecio jacobea</i>
Western hemlock	<i>Tsuga heterophylla</i>
Western redcedar	<i>Thuja plicata</i>
Yellow sand-verbena	<i>Abronia latifolia</i>
Yellow toadflax	<i>Linaria vulgaris</i>

## I-2. Common and Scientific Names of Mammals Mentioned in this CCP

<b>Common Name</b>	<b>Scientific Name</b>
American black bear	<i>Ursus americanus</i>
Beaver	<i>Castor canadensis</i>
Black-tailed deer	<i>Odocoileus hemionus</i>
Bobcat	<i>Lynx rufus</i>
Domestic cat	<i>Felis catus</i>
Domestic dog	<i>Canis familiaris</i>
Elk	<i>Cervus elaphus</i>
Keen's myotis	<i>Myotis keenii</i>
Long-eared myotis	<i>Myotis evotis</i>
Long-legged myotis	<i>Myotis volans</i>
Northern elephant seal	<i>Mirounga angustirostris</i>
Nutria	<i>Myocastor coypus</i>
Pacific harbor seal	<i>Phoca vitulina</i>
Short-tailed weasel	<i>Mustela erminea</i>
Silver-haired bat	<i>Lasionycteris noctivagans</i>

Common Name	Scientific Name
Townsend's big-eared bat	<i>Corynorhinus townsendii</i>

**I-3. Common and Scientific Names of Birds Mentioned in this CCP**

Common Name	Scientific Name
American crow	<i>Corvus brachyrhynchos</i>
American wigeon	<i>Anas americana</i>
Bald eagle	<i>Haliaeetus leucocephalus</i>
Band-tailed pigeon	<i>Patagioenas fasciata</i>
Barrow's goldeneye	<i>Bucephala islandica</i>
Belted kingfisher	<i>Megaceryle alcyon</i>
Bewick's wren	<i>Thryomanes bewickii</i>
Black oystercatcher	<i>Haematopus bachmani</i>
Black scoter	<i>Melanitta nigra</i>
Black-bellied plover	<i>Pluvialis squatarola</i>
Brant	<i>Branta bernicla</i>
Bufflehead	<i>Bucephala albeola</i>
Bullock's oriole	<i>Icterus bullockii</i>
Canada goose	<i>Branta Canadensis</i>
Caspian tern	<i>Hydroprogne caspia</i>
Chestnut-backed chickadee	<i>Poecile rufescens</i>
Common goldeneye	<i>Bucephala clangula</i>
Cooper's hawk	<i>Accipiter cooperii</i>
Double-crested cormorant	<i>Phalacrocorax auritus</i>
Downy woodpecker	<i>Picoides pubescens</i>
Dunlin	<i>Calidris alpina</i>
Glaucous-winged gull	<i>Larus glaucescens</i>
Golden-crowned kinglet	<i>Regulus satrapa</i>
Great blue heron	<i>Ardea herodias</i>
Greater scaup	<i>Aythya marila</i>
Green-winged teal	<i>Anas carolinensis</i>
Hairy woodpecker	<i>Picoides villosus</i>
Harlequin duck	<i>Histrionicus histrionicus</i>
Heermann's gull	<i>Larus heermanni</i>
Hutton's vireo	<i>Vireo huttoni</i>
Least sandpiper	<i>Calidris minutilla</i>
Lesser scaup	<i>Aythya affinis</i>
Mallard	<i>Anas platyrhynchos</i>
Marbled murrelet	<i>Brachyramphus marmoratus</i>
Merlin	<i>Falco columbarius</i>
Mew gull	<i>Larus canus</i>
Northern harrier	<i>Circus cyaneus</i>
Northern pintail	<i>Anas acuta</i>
Northern saw-whet owl	<i>Aegolius acadicus</i>
Northern shoveler	<i>Anas clypeata</i>
Northwestern crow	<i>Corvus caurinus</i>
Orange-crowned warbler	<i>Oreothlypis celata</i>

<b>Common Name</b>	<b>Scientific Name</b>
Pacific-slope flycatcher	<i>Empidonax difficilis</i>
Pelagic cormorant	<i>Phalacrocorax pelagicus</i>
Peregrine falcon	<i>Falco peregrinus</i>
Pigeon guillemot	<i>Cepphus columba</i>
Pileated woodpeckers	<i>Dryocopus pileatus</i>
Pine siskin	<i>Carduelis pinus</i>
Red-breasted sapsucker	<i>Sphyrapicus ruber</i>
Rufus hummingbird	<i>Selasphorus rufus</i>
Sanderling	<i>Calidris alba</i>
Sharp-shinned hawk	<i>Accipiter striatus</i>
Short-eared owl	<i>Asio flammeus</i>
Snowy owl	<i>Bubo scandiacus</i>
Spotted towhee	<i>Pipilo maculatus</i>
Steller's jay	<i>Cyanocitta stelleri</i>
Surf scoter	<i>Melanitta perspicillata</i>
Townsend's warbler	<i>Dendroica townsendi</i>
Varied thrush	<i>Ixoreus naevius</i>
Western gull	<i>Larus occidentalis</i>
Western sandpiper	<i>Calidris mauri</i>
Western snowy plover	<i>Charadrius alexandrinus nivosus</i>
Whimbrel	<i>Numenius phaeopus</i>
White-winged scoter	<i>Melanitta fusca</i>
Wood duck	<i>Aix sponsa</i>

#### **I-4. Common and Scientific Names of Amphibians Mentioned in this CCP**

<b>Common Name</b>	<b>Scientific Name</b>
American bullfrog	<i>Rana catesbeiana</i>
Cascades frog	<i>Rana cascadae</i>
Coastal tailed frog	<i>Ascaphus truei</i>
Cope's giant salamander	<i>Dicamptodon copei</i>
Ensatina	<i>Ensatina eschscholtzii</i>
Long-toed salamander	<i>Ambystoma macrodactylum</i>
Northwestern salamander	<i>Ambystoma gracile</i>
Olympic torrent salamander	<i>Rhyacotriton olympicus</i>
Pacific chorus frog	<i>Pseudacris regilla</i>
Red-legged frog	<i>Rana aurora</i>
Rough-skinned newt	<i>Taricha granulosa</i>
Western red-backed salamander	<i>Plethodon vehiculum</i>
Western toad	<i>Bufo boreas</i>

#### **I-5. Common and Scientific Names of Insects Mentioned in this CCP**

<b>Common Name</b>	<b>Scientific Name</b>
Amber spurge flea beetle	<i>Apthona flava</i>
Broad-nosed seed head weevil	<i>Bangasternus fausti</i>
Brown-legged spurge flea beetle	<i>Apthona lacertosa</i>
Bull thistle seed head gall fly	<i>Urophora stylata</i>

<b>Common Name</b>	<b>Scientific Name</b>
Carpenter ant	<i>Camponotus</i> spp.
Field bindweed moth	<i>Tyta luctuosa</i>
Field bindweed mite	<i>Aceria malherbae</i>
Foliage beetle	<i>Chrysolina hyperici</i>
Klamath weed beetle	<i>Chrysolina quadrigemina</i>
Knapweed flower head weevil	<i>Larinus minutus</i>
Knapweed seed head fly	<i>Urophora affinis</i>
Knapweed seed head gall fly	<i>Urophora quadrifasciata</i>
Knapweed weevil	<i>Cyphocleonus achates</i>
Leaf bud gall-forming midge	<i>Zeuxidiplosis giardi</i>
Leaf-feeding flea beetle	<i>Altica carduorum</i> Guer
Musk thistle seed head weevil	<i>Rhinocyllus conicus</i>
Musk thistle rosette weevil	<i>Trichosirocalus horridus</i>
Root-boring beetle	<i>Agrius hyperici</i>
Root-boring/gall beetle	<i>Sphenoptera jugoslavica</i>
Sand-verbena moth	<i>Copablepharon fuscum</i>
Scotch broom seed weevil	<i>Apion fuscirostre</i>
Stem-mining weevil	<i>Ceutorhynchus litura</i> F
St. Johnswort inchworm	<i>Aplocera plagiata</i>
Sulphur knapweed moth	<i>Agapeta zoegana</i>
Taylor's checkerspot	<i>Euphydryas editha taylori</i>
Thistle gall fly	<i>Urophora cardui</i> L
Toadflax defoliating moth	<i>Calophasia lunula</i>
Twig-mining moth	<i>Leucoptera spartifoliella</i>

#### **I-6. Common and Scientific Names of Fish and Shellfish Mentioned in this CCP**

<b>Common Name</b>	<b>Scientific Name</b>
Bull trout	<i>Salvelinus confluentus</i>
Coho salmon	<i>Oncorhynchus kisutch</i>
Chinook salmon	<i>Oncorhynchus tshawytscha</i>
Chum salmon	<i>Oncorhynchus keta</i>
Cutthroat trout	<i>Oncorhynchus clarkii</i>
Dungeness crab	<i>Metacarcinus magister</i>
European green crab	<i>Carcinus maenas</i>
Littleneck clam	<i>Protothaca staminea</i>
Pacific herring	<i>Clupea pallasii</i>
Pacific sand lance	<i>Ammodytes hexapterus</i>
Pink salmon	<i>Oncorhynchus gorbuscha</i>
Steelhead trout	<i>Oncorhynchus mykiss</i>
Surf smelt	<i>Hypomesus pretiosus</i>

**Document continues on next page.**

## Appendix J. CCP Team Members

The CCP was developed and prepared primarily by a core team comprised of refuge and regional office staff. There was some turnover of regional office staff core team members during the planning process. The core team sought technical expertise and review from other professionals both within and outside of the Fish and Wildlife Service throughout the CCP process. Extended team members provided critical input during wildlife and habitat review early in the process and continued to provide review and comment as the document evolved. The List of Preparers below includes the core team members as well as other persons responsible for writing specific portions of the plan. Many others provided assistance in developing and reviewing the CCP and associated products and in providing advice throughout the planning process. These people are captured in the List of Reviewers and Advisors.

**Table J-1. List of Preparers**

Name and Title	Organization	CCP Contributions
Kevin Ryan, Project Leader	Washington Maritime National Wildlife Refuge Complex, USFWS	Supervision; decision-making; responsible for overall coordination and development of the CCP; public involvement; writer/reviewer; research/analysis: communication plan; appropriateness findings and compatibility determinations; compliance with NEPA, ESA, NHPA, etc.; Federal and State agency, and Tribal coordination.
Lorenz Sollmann, Deputy Project Leader	Washington Maritime National Wildlife Refuge Complex, USFWS	Writer/reviewer: wildlife & habitat goals and objectives, affected environment and environmental consequences, contaminants, integrated pest management plan; research/analysis: invasive species, fire management, and habitats; public involvement: communication plan, wildlife & habitat review, and public meetings.
Sue Thomas, Refuge Biologist	Washington Maritime National Wildlife Refuge Complex, USFWS	Writer/reviewer: wildlife & habitat goals and objectives, affected environment and environmental consequences; research/analysis: priority resources of concern, habitats, wildlife, biological integrity, diversity, and environmental health; public involvement: communication plan, wildlife & habitat review, and public meetings.
Dave Falzetti, Refuge Law Enforcement Officer and Visitor Services Manager	Washington Maritime National Wildlife Refuge Complex, USFWS	Writer/reviewer: visitor services goals and objectives, refuge facilities, sign inventory and maintenance plans, regional recreation opportunities and forecasts, illegal uses, refuge visitation, and environmental consequences; public involvement: communication plan and public meetings.

Name and Title	Organization	CCP Contributions
Sue Mayo, Administrative Assistant	Washington Maritime National Wildlife Refuge Complex, USFWS	Researcher/writer: refuge vision; list of common and scientific species names, abbreviations and glossary; public involvement: CCP mailing list and public meetings.
Jane Bardolf, Conservation Planner	(formerly) Division of Planning, Visitor Services, and Transportation, Region 1, USFWS	CCP Lead Planner (through 08/2011) responsible for regional office coordination, and process and policy guidance for development of the CCP; CCP schedule and status reports; team meeting facilitator; document layout, management, and review; planning record; public involvement: communications plan.
Khemarith So, Geographer and Conservation Planner	Division of Planning, Visitor Services, and Transportation, Region 1, USFWS	CCP Lead Planner (starting 10/2011) responsible for regional office coordination, and process and policy guidance for development of the CCP; CCP schedule and status reports; team meeting facilitator; document layout, management, and review; planning record; public involvement: public meetings, scoping comments compilation, scoping report. Development of working, public involvement, and document maps; GIS data gathering and analysis; researcher/writer: physical environment, climate change, environmental consequences, wilderness review.
Virginia Parks, Archaeologist	Division of Natural and Cultural Resources, Region 1, USFWS	Researcher/writer: cultural resources objectives, affected environment, and environmental consequences.
Erin Carver, Economist	Division of Economics, Washington Office	Researcher/writer: socioeconomics, environmental consequences.
David Patte, Climate Change Coordinator	Science Applications, Region 1, USFWS	Researcher/writer/reviewer: climate change.
Staci McCorkle, Natural Resources Scientist	SWCA Environmental Consultants	Writer/editor: wildlife & habitat and visitor services goals and objectives, refuge public uses.
Nicole Garner, Writer/Editor	Division of Planning, Visitor Services, and Transportation, Region 1, USFWS	Technical edit review of CCP document and Federal Register Notices; design and edit of planning updates.
Lara Bjork, Technical Editor	SWCA Environmental Consultants	Technical edit review of CCP document.

<b>Name and Title</b>	<b>Organization</b>	<b>CCP Contributions</b>
Pat Stark, Visual Information Specialist	Division of Planning, Visitor Services, and Transportation, Region 1, USFWS	CCP cover design and print management.

**Table J-2. List of Reviewers and Advisors**

<b>Name and Title</b>	<b>Organization</b>	<b>CCP Contributions</b>
Robyn Thorson, Regional Director	Region 1, USFWS	Final decision-maker, CCP/EA and Federal Register notice approvals.
Robin West, Regional Chief of Refuges	National Wildlife Refuges, Region 1, USFWS	Major decisions on CCP direction, CCP/EA and Federal Register notice approvals.
Ben Harrison, Assistant Regional Chief of Refuges	National Wildlife Refuges, Region 1, USFWS	CCP Advisor: policy, appropriateness findings, compatibility determinations, environmental consequences review.
Bob Flores, Refuge Supervisor	National Wildlife Refuges, Region 1, USFWS	Refuge workload assistance; reviewer; decision-maker.
Bob Peyton, Assistant Refuge Supervisor	National Wildlife Refuges, Region 1, USFWS	Refuge workload assistance; reviewer; decision-maker.
Chuck Houghten, Division Chief of Planning, Visitor Services, and Transportation	Division of Planning, Visitor Services, and Transportation, Region 1, USFWS	CCP Advisor for planning policy and guidance; reviewer; coordination with other divisions and Washington Office.
Scott McCarthy, Branch Chief of Planning	Division of Planning, Visitor Services, and Transportation, Region 1, USFWS	CCP Advisor for planning policy and guidance; reviewer; planning workload priorities; coordination with other divisions.
Mike Marxen, Branch Chief of Visitor Services and Communication	Division of Planning, Visitor Services, and Transportation, Region 1, USFWS	Visitor Services review and guidance design, public use goals and objectives; public involvement assistance.
Joe Engler, Assistant Regional Refuge Biologist	Division of Natural and Cultural Resources, Region 1, USFWS	Development and review of biological goals and objectives and biological integrity, diversity, and environmental health analysis.
Bridgette Flanders- Wanner, Assistant Regional Refuge Biologist	Division of Natural and Cultural Resources, Region 1, USFWS	Development and review of biological goals and objectives and biological integrity, diversity, and environmental health analysis.
Brian Root, Zone Inventory and Monitoring Biologist	Nisqually National Wildlife Refuge Complex, USFWS	Wildlife and habitat review.

<b>Name and Title</b>	<b>Organization</b>	<b>CCP Contributions</b>
Bill Ritchie, Refuge Biologist	Willapa National Wildlife Refuge Complex, USFWS	Habitat assessment of Dawley Unit for suitability for marbled murrelet.
Cathy Sheppard, Division Chief, Realty and Refuge Information	Division of Realty and Refuge Information, Region 1, USFWS	Advice on realty issues; CCP review.
Wayne Hill, Branch Chief, Realty	Division of Realty and Refuge Information, Region 1, USFWS	Advice on realty issues; CCP review.
Joan Jewett, External Affairs	External Affairs, Region 1, USFWS	News release review and distribution.
Greg Hagedorn, Fire Management Officer	Region 1, USFWS	Advice on fire management.
Pat Gonzales-Rogers, Tribal Liaison	External Affairs, Region 1, USFWS	Identification of and coordination with Indian Tribes.
Anita McMillan, Biologist	WDFW	WDFW contact for CCP coordination (local).
Mick Cope, Regional Wildlife Program Manager	WDFW	WDFW contact for CCP coordination (Region 6).
Greg Schirato	WDFW	WDFW contact for CCP coordination and comment (Headquarters office).
Don Kraege	WDFW	WDFW contact for CCP coordination and comment (Headquarters office).
Shelly Ament, Wildlife Biologist	WDFW	WDFW contact for CCP coordination (local).
Peter Dunwiddie, Botanist	University of Washington	Wildlife and habitat review.
Susan Piper, Wildlife Supervisor	Olympic National Forest, USFS	Wildlife and habitat review.
Chris Dowling, Silviculturalist	Olympic National Forest, USFS	Wildlife and habitat review.
Curtis Tanner, Fish and Wildlife Biologist	Western Washington Fish and Wildlife Office, USFWS	Advice on wildlife and habitat.
Scott Chitwood, Natural Resources Director	Jamestown S' Klallam Tribe	Tribal consultation.
Ron Thom, Ecologist	Battelle National Laboratory	Advice on eelgrass.
Roger Peters, Fisheries Biologist	Western Washington Fisheries Office, USFWS	Preliminary assessment of refuge reach of Dean Creek for salmonids.

<b>Name and Title</b>	<b>Organization</b>	<b>CCP Contributions</b>
Brian Turner, District Manager	WDNR	Advice on forest management.
Hugh Shipman, Coastal Geologist	WDOE	Advice on bluff and beach management.

**Document continues on next page.**

## **Appendix K. Public Involvement**

Public involvement was sought throughout the development of the CCP, starting in April 2011 with the preparation of a Communications Plan. Public involvement strategies included face-to-face meetings or phone conversations with community organizations, local, state and federal agencies, elected officials (or their aides), Tribal representatives, and local refuge users. For the broader public, the Refuge also held open houses and provided planning updates intended to inform, invite discussion and solicit feedback. The Refuge also maintains a website where CCP information can be found and where the public could print out comment forms or submit emails during the scoping phase and preliminary draft alternatives comment period.

A mailing list of approximately 353 persons and organizations is maintained at the Refuge and was used to distribute planning updates and public meeting announcements. Below is a brief summary of the events, meetings, and outreach tools that were used in our public involvement efforts.

### **Meetings with Elected Officials and/or their Aides:**

- December 12, 2011. Met with Judith Morris, legislative aide for Congressman Norm Dicks, 6<sup>th</sup> District.

### **Meetings with Federal Agency Representatives:**

- April 14, 2011. Met with William Ritchie, USFWS Wildlife Biologist, Willapa NWR to assess habitat suitability in the Dawley Unit for marbled murrelet.
- July 18, 2011. Met with Roger Peters, USFWS Fisheries Biologist, Western Washington Fish and Wildlife Office to preliminary assess Dean Creek for salmonids and schedule formal assessment.
- December 12, 2011. Met with Karen Gustin, Superintendent, Olympic National Park.

### **Meetings with Tribal Representatives:**

- December 8, 2011. Met with Jamestown S'Klallam Tribe. 6 participants.

### **Meetings/Contacts with State Agency Representatives:**

- May 10, 2011. CCP Coordination Meeting with Don Kraege and Greg Schirato, Washington Department of Fish and Wildlife.
- November 9, 2011. Phone conversation with Brian Turner, Washington Department of Natural Resources. Discussed CCP and planning process with emphasis on Dawley Unit forest and adjacent WDNR forest habitats.
- March 30, 2012. Personal communication with follow-up e-mail with Hugh Shipman, Coastal Geologist with Washington Department of Ecology. Sandy bluffs, barrier beach and inventory and monitoring goals and objectives were reviewed from a coastal geological perspective. January 24, 2012. E-mail from Anita McMillan, WDFW, regarding review of preliminary goals and objectives.

### **Meetings with Multiple Agency Workgroups or Committees:**

- January 11, 2012. Made a public announcement at the Dungeness River Management Team monthly meeting about the upcoming public meeting on the draft alternatives. There were 33 participants, including representatives from North Olympic Land Trust, Jamestown S'Klallam Tribe, Dungeness Beach Association, Clallam County, Sports Fisheries, Clallam

Conservation District, Protect the Peninsula's Future, City of Sequim, Riverside Property Owners, WDOE, USFS, Water Users Association, PUD#1, WDFW, StreamKeepers, OPAS, Clallam County Environmental Health, Olympic Park Associates, Sequim Gazette, Dungeness River Audubon Center staff, and people from general public.

- January 25, 2012. Sent a follow-up email message to all on the Dungeness River Management Team general email list about the rescheduled public meeting for the draft alternatives. This was necessary as the original meeting had a very low turnout due to a snow storm.
- March 1, 2012. Made an announcement to the Clean Water Working Group members concerning the draft CCP and that the Refuge would appreciate if they could review this document when it comes out in the spring. There were 9 participants, including representatives from Clallam county, Jamestown S'Klallam Tribe, Clallam Conservation District, and private citizens.

**Meetings with Non-government Organizations:**

- October 31, 2011. Met with Olympic Peninsula Audubon Society. 9 participants.

**Notice to Refuge Volunteers:**

- April 8, 2011. New and returning Dungeness NWR Volunteers were given a presentation on the CCP process, alternatives being considered, and how they could get involved and offer input. 97 participants.
- Prior to the public open houses, all refuge volunteers were provided with the Preliminary Draft Alternatives and invited to the public meetings. 130 people.

**Workshops / Field Review:**

- February 7-8, 2011. Wildlife and Habitat Management Field Review on the Refuge. 11 participants, including representatives from the Washington Department of Fish and Wildlife, U.S. Forest Service, and University of Washington.

**Public Open Houses/Scoping Sessions:**

- January 19, 2012. Public Preliminary Draft Alternatives meetings at the Sequim Prairie Grange Hall, Sequim, WA.  
Purpose and format: To provide information on CCP process and preliminary draft alternatives. The public meeting was in an open-house format. At the open house, refuge staff explained the CCP process and progress to date; refuge purposes, and management; preliminary draft alternatives; and future opportunities for public input. The public was invited to submit comments either in writing or verbally. The attendees then had the opportunity to visit tables staffed by refuge staff and the lead planner. Each table had a scribe to record verbal comments.  
Attendance: A total of 5 private citizens and representatives from various organizations attended the open houses, providing comments on the issues and opportunities presented.
- February 2, 2012. Public Preliminary Draft Alternatives meetings at the Dungeness Schoolhouse, Sequim, WA.  
Purpose and format: To provide information on CCP process and preliminary draft alternatives. The public meeting was in an open-house format. At the open house, refuge staff explained the CCP process and progress to date; refuge purposes, and management; preliminary draft alternatives; and future opportunities for public input. The public was invited to submit comments either in writing or verbally. The attendees then had the

opportunity to visit tables staffed by refuge staff and the lead planner. Each table had a scribe to record verbal comments.

Attendance: A total of 28 private citizens and representatives from various organizations attended the open houses, providing comments on the issues and opportunities presented.

**U.S. Fish and Wildlife Service Coordination:**

The core planning team coordinates frequently within the agency during the planning process. The core team also relies on specialists from various Service programs for their expertise. Additional coordination occurs with the Regional Office Management at key phases in the process including:

*R1, Pacific Regional Office Management Reviews*

- Preplanning Briefing meeting – April 14, 2011
- Alternative Briefing meeting – November 1, 2011
- Administrative Draft Briefing meeting – May 10, 2012

**Planning Updates:**

- October 2011. Hardcopies of Planning Update 1 mailed to approximately 320 persons, organizations, and officials on the mailing list and additional updates were hand delivered to R1 FWS staff. Throughout scoping, Planning Update 1 was provided to refuge office visitors and partners and mailed to interested parties. Planning Update 1 included background information on the Refuge, refuge purposes, preliminary issues, vision, goals, land status map, and a mail-in comment form with the following questions:
  - What do you see as the primary issues that need to be addressed in the Comprehensive Conservation Plan?
  - What are your thoughts on the visions and goals for Dungeness National Wildlife Refuge?
  - Do you have additional comments at this time?
- January 2012. Hardcopies of Planning Update 2 mailed to approximately 350 persons, organizations, and officials on the mailing list and additional updates were hand delivered to R1 FWS staff. Planning Update 2 was also provided to refuge office visitors, partners, and attendees of the January 19, 2012 and February 2, 2012 public meetings. Planning Update 2 included a summary of public scoping comments, a summary of Preliminary Draft Alternatives, information on the open house meetings, and contact information.

**Press Coverage:**

- Fall 2011. Refuge staff sent a news release to local media and made follow up contacts. Various notices of CCP scoping period were printed in the Peninsula Daily News, News Tribune, Bellingham Herald, and Port Angeles Daily News.
- Winter 2012. Refuge staff sent a news release to local media and made follow up contacts. Various articles and notices of preliminary draft alternatives were printed in the Sequim Gazette.

**Other Tools:**

- Website at <http://www.fws.gov/pacific/planning/main/docs/WA/Dungeness/> featuring CCP information and scoping forms.

***Federal Register Notices:***

- October 4, 2011. *Federal Register* published Notice of Intent to prepare a comprehensive conservation plan and environmental assessment, and included background information on the Refuge and preliminary issues with request for scoping comments.
- November 19, 2012. *Federal Register* published Notice of Availability of the Draft Comprehensive Conservation Plan and Environmental Assessment; and request for comments.

## Appendix L. References Cited

- AgDrift. 2001. A user's guide for AgDrift 2.04: a tiered approach for the assessment of spray drift of pesticides. Spray Drift Task Force. Macon, MO.
- Agee, J.K. 1993. Fire ecology of Pacific Northwest forests. Washington, D.C.: Island Press.
- Akcakaya, H.R., S.H.M. Butchart, G.M. Mace, S.N. Stuart, and C. Hilton-Taylor. 2006. Use and misuse of the IUCN Red List Criteria in projecting climate change impacts on biodiversity. *Global Change Biology* 12:2037-2043.
- Aldous, A., P. Gonzalez, and K. Popper. 2007. A method for incorporating climate change into conservation action plans: an example from Oregon. The Nature Conservancy in Oregon and The Nature Conservancy Global Climate Change Initiative. Portland, OR. 17 pp.
- Altman, B. 1999. Conservation strategy for landbirds in coniferous forests of Western Oregon and Washington. Version 1.0. Partners in Flight. Portland, OR. 111 pp.
- Anderson, M., P. Bourgeron, M.T. Bryer, R. Crawford, L. Engelking, D. Faber-Langendoen, M. Gallyoun, K. Goodin, D.H. Grossman, S. Landaal, K. Metzler, K.D. Patterson, M. Pyne, M. Reid, L. Sneddon, and A.S. Weakley. 1998. International classification of ecological communities: terrestrial vegetation of the United States. Volume II. The National Vegetation Classification System: list of types. The Nature Conservancy. Arlington, VA. 502 pp.
- ATSDR (Agency for Toxic Substances and Disease Registry) U.S. Department of Health and Human Services. 2004. Guidance manual for the assessment of joint toxic action of chemical mixtures. U.S. Department of Health and Human Services, Public Health Service, ATSDR, Division of Toxicology. 62 pp. (+ appendices).
- Aubry, K.B., L.L.C. Jones, and P.A. Hall. 1988. Use of woody debris by Plethodontid salamanders in Douglas-fir in Washington. Pages 32-37 in: R. Szaro, K. Severson, and D. Patton, eds. Management of amphibians, reptiles and small mammals in North America. RMGTR-166. U.S. Forest Service, Flagstaff, AZ. 37 pp.
- Babcock, R., R. Burmester, D. Engebretson, A. Warnock, and K. Clark. 1992. A rifted margin origin for the Crescent basalts and related rocks in the northern Coast Range volcanic province, Washington and British Columbia. *Journal of Geophysical Research* 97:6799-6821.
- Bach, A. 2004. Explorations in environmental studies: northwest Washington climate. Western Washington University. Bellingham, WA. 6 pp.
- Baehr, C.H. and C. Habig. 2000. Statistical evaluation of the UTAB database for use in terrestrial nontarget organism risk assessment. Presentation at the American Society for Testing and Materials (ASTM) Tenth Symposium on Environmental Toxicology and Risk Assessment, April 2000, Toronto, Canada.
- Bainbridge, D.A. 1974. Trail management. *Ecological Society of America Bulletin* 55:8-10.

- Baker, J. and G. Miller. 1999. Understanding and reducing pesticide losses. Extension Publication PM 1495. Iowa State University Extension. Ames, IA. 6 pp.
- Barry, T. 2004. Characterization of propanil prune foliage residues as related to propanil use patterns in the Sacramento Valley, CA. Proceedings of the International Conference on Pesticide Application for Drift Management. Waikoloa, HI. 15 pp.
- Barton, B.R. 1998. Notes on the new Washington State fossil, *Mammuthus columbi*. Washington Geology 26(2/3):68-69.
- Battaglin, W.A., E.M. Thurman, S.J. Kalkhoff, and S.D. Porter. 2003. Herbicides and transformation products in surface waters of the midwestern United States. Journal of the American Water Resources Association (JAWRA) 39(4):743-756.
- Bax, N., A. Williamson, M. Aguero, E. Gonzalez, and W. Geeves. 2003. Marine invasive alien species: a threat to global biodiversity. Marine Policy 27(4):313-323.
- Beck, K.G. 1993. How do weeds affect us all. Pages 5-13 in: Proceedings of the Eighth Grazing Lands Forum. December 2, 1993. Washington, D.C.
- Belden, L.K. and A.R. Blaustein. 2002. Population differences in sensitivity to UV-B radiation for larval long-toed salamanders. Ecology 83(6):1586-1590.
- Bell, D.V. and L.W. Austin. 1985. The game-fishing season and its effects on overwintering wildfowl. Biological Conservation 33:65-80.
- Bennett, K.A. and E. Zuelke. 1999. The effects of recreation on birds: a literature review. Delaware Natural Heritage Program. Smyrna, DE.
- Bergland, E. 1984. Summary prehistory and ethnography of the Olympic National Park, Washington. National Park Service Pacific Northwest Region, Cultural Resource Division. Seattle, WA. 89 pp.
- Berry, H.D., A.T. Sewell, S. Wyllie-Echeverria, B.R. Reeves, T.F. Mumford, Jr., J.R. Skalski, R.C. Zimmerman, and J. Archer. 2003. Puget Sound submerged vegetation monitoring project: 2000-2002 monitoring report. Nearshore Habitat Program, Washington State Department of Natural Resources. Olympia, WA. 60 pp. (+ appendices).
- Beyer, W.N., E.E. Connor, and S. Gerould. 1994. Estimates of soil ingestion by wildlife. Journal of Wildlife Management 58:375-382.
- Blaustein, A.P., J.J. Beatty, D.H. Olson, and R.M. Storm. 1995. The biology of amphibians and reptiles in old-growth forests in the Pacific Northwest. General Technical Report PNW-GTR-337. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. Portland, OR. 98 pp.
- Blewett, C.M. and J.M. Marzluff. 2005. Effects of urban sprawl on snags and the abundance and productivity of cavity-nesting birds. Condor 107:677-692.

- BLM (Bureau of Land Management). 2007. Vegetation treatments using herbicides on Bureau of Land Management Lands in 17 western states Programmatic EIS (PEIS). Bureau of Land Management. Washington, D.C. 539 pp.
- Bonanno, S.E. 1992. Vegetation of a Lake Ontario dune barrier, Oswego and Jefferson Counties, New York, under high and low recreation pressure. Master's thesis. Syracuse State University, Syracuse, NY.
- BOR (Bureau of Reclamation). 2002. Physical processes, human impacts, and restoration issues of the Lower Dungeness River. Prepared for the Jamestown S'Klallam Tribe. U.S. Department of Interior, Bureau of Reclamation. 112 pp. (+ appendices). Available at: [http://www.jamestowntribe.org/programs/nrs/5-BOR\\_Dungeness\\_River\\_Main\\_Report.pdf](http://www.jamestowntribe.org/programs/nrs/5-BOR_Dungeness_River_Main_Report.pdf). Accessed June 8, 2012.
- Boren, L., K. Barton, and N. Gemmell. 2003. Results of review on the impacts of viewing New Zealand fur seals in Kaikoura and Abel Tasman, New Zealand. In: Viewing marine mammals in the wild: emerging issues, research and management needs. 15th Biennial Conference on the Biology of Marine Mammals, Greensboro, NC. NOAA Fisheries. 85 pp.
- Bortleson, G.C., M.J. Chrzastowski, and A.K. Helgerson. 1980. Historical changes of shoreline and wetland at eleven major deltas in the Puget Sound region, Washington. Atlas HA-617. U.S. Geological Survey. Seattle, WA. 11 sheets.
- Bouffard, S.H. 1982. Wildlife values versus human recreation: Ruby Lake National Wildlife Refuge. Transactions of the Forty-Seventh North American Wildlife and Natural Resources Conference 47:553-556.
- Boyle, S.A. and F.B. Samson. 1985. Effects of non-consumptive recreation on wildlife: a review. Wildlife Society Bulletin 13:110-116.
- Brandon, M.T., M.K. Roden-Tice, and J.I. Garver. 1998. Late Cenozoic exhumation of the Cascadia accretionary wedge in the Olympic Mountains, northwest Washington State. GSA Bulletin 110(8):985-1009.
- Bray, M.J. and J.M. Hooke. 1997. Prediction of soft-cliff retreat with accelerating sea level rise. Journal of Coastal Research 13(2):453-467.
- Bright, J.A. 1986. Hiker impact on herbaceous vegetation along trails in evergreen woodland of central Texas. Biological Conservation 36:53-69.
- Bromirski, P.D., A.J. Miller, R.E. Flick, and G. Auad. 2011. Dynamical suppression of sea level rise along the Pacific coast of North America: indications for imminent acceleration. Journal of Geophysical Research 116: C07005. doi: 10.1029/2010JC006759.
- Brooks, M.L., C.M. D'Antonio, D.M. Richardson, J.B. Grace, J.E. Keeley, J.M. DiTomaso, R.J. Hobbs, M. Pellant, and D. Pyke. 2004. Effects of invasive alien plants on fire regimes. BioScience 54:77-88.
- Brown, S., C. Hickey, B. Harrington, and R. Gill, eds. 2001. United States shorebird conservation plan. 2nd edition. Manomet Center for Conservation Sciences. Manomet, MA. 60 pp.

- Buchanan, J.B. 2006. Nearshore birds in Puget Sound. Puget Sound Nearshore Partnership Report number 2006-05. Seattle District, U.S. Army Corps of Engineers. Seattle, WA. 17 pp.
- Bull, E.L., A.A. Clark, and J.F. Shepherd. 2005. Short-term effects of fuel reduction on pileated woodpeckers in northeastern Oregon - a pilot study. Research Paper PNW-RP-564. U.S. Department of Agriculture, Forest Service, Pacific Northwest Research Station. Portland, OR. 17 pp.
- Bull, Evelyn L. and Jerome A. Jackson. 2011. Pileated Woodpecker (*Dryocopus pileatus*), The Birds of North America Online (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/148doi:10.2173/bna.148>; Accessed July 3, 2011.
- Burdick, D.M., F.T. Short, and J. Wolf. 1993. An index to assess and monitor the progression of wasting disease in eelgrass, *Zostera marina*. Marine Ecology Progress Series 94:83-90.
- Burger, J. 1981. The effect of human activity on birds at a coastal bay. Biological Conservation 21:231-241.
- Burger, J., B. Harrington, J. Rodgers, and H. Smith. 1999. Minimum recommended set-back (RS) distances for various disturbances approaching directly towards waterbirds to prevent flushing.
- Butler, T., W. Martinkovic, and O.N. Nesheim. 1998. Factors influencing pesticide movement to ground water. Extension Publication PI-2. University of Florida, Cooperative Extension Service. Gainesville, FL. 4 pp.
- Calabrese, E.J. and L.A. Baldwin. 1993. Performing ecological risk assessments. Chelsea, MI: Lewis Publishers.
- Calambokidis, J. and R.W. Baird. 1994. Status of marine mammals in the Strait of Georgia, Puget Sound and the Juan de Fuca Strait and potential human impacts. Canadian Technical Report of Fisheries and Aquatic Sciences 1948:282-300.
- Calambokidis, J., G.H. Steiger, J.R. Evenson, and S.J. Jeffries. 1991. Censuses and disturbance of harbor seals at Woodard Bay and recommendations for protection. Final report. Washington Department of Natural Resources. Olympia, WA. 45 pp.
- Calambokidis, J., K. Bowman, S. Carter, J. Cabbage, P. Dawson, T. Fleischner, J. Schuett-Hames, J. Skidmore, and B. Taylor. 1978. Chlorinated hydrocarbon concentrations and the ecology and behavior of harbor seals in Washington State waters. Evergreen State College. Olympia, WA. 121 pp.
- Carlton, J.T. and J.B. Geller. 1993. Ecological roulette: biological invasions and the global transport of nonindigenous marine organisms. Science 261:78-82.
- Carver, E. and J. Caudill. 2007. Banking on nature 2006: the economic benefits to local communities of national wildlife refuge visitation. U.S. Department of the Interior, Fish and Wildlife Service, Division of Economics. Washington, D.C. 372 pp.

Center, T.D., J.H. Frank, and F.A. Dray, Jr. 1997. Biological control. Pages 245-263 in: D. Simberloff, D.C. Schmitz, and T.C. Brown, eds. *Strangers in paradise: impact and management of nonindigenous species in Florida*. Washington, D.C.: Island Press.

CEQ (Council on Environmental Quality). 1997. *Considering cumulative effects under the National Environmental Policy Act*. Executive Office of the President, Council on Environmental Quality. Washington, D.C. 64 pp. (+ appendices).

Chabreck, R.A. 1988. *Coastal marshes: ecology and wildlife management*. Minneapolis, MN: University of Minnesota Press.

Chappell, C.B. and R.C. Crawford. 1997. Native vegetation of the south Puget Sound prairie landscape. Pages 107-122 in: P. Dunn and K. Ewing, eds. *Ecology and conservation of the South Puget Sound prairie landscape*. Seattle, WA: The Nature Conservancy of Washington.

Chappell, C.B., M.S. Mohn Gee, B. Stephens, R. Crawford, and S. Farone. 2001. Distribution and decline of native grasslands and oak woodlands in the Puget Lowland and Willamette Valley ecoregions, Washington. Pages 124-139 in: S.H. Reichard, P.W. Dunwiddie, J.G. Gamon, A.R. Kruckeberg, and D.L. Salstrom, eds. *Conservation of Washington's rare plants and ecosystems*. Seattle, WA: Washington Native Plant Society.

Chen, J.L., C.R. Wilson, and B.D. Tapley. 2006. Satellite gravity measurements confirm accelerated melting of Greenland Ice Sheet. *Science* 313(5795):1958-1960.

Churchhill, A.C., G. Nieves, and A.H. Brenowitz. 1985. Flotation and dispersal of eelgrass seeds by gas bubbles. *Estuaries* 8(4):352-354.

CIG (Climate Impacts Group). 2004. Overview of climate change impacts in the U.S. Pacific Northwest. Background paper prepared for the West Coast Governors' Climate Change Initiative. Available at: <http://cses.washington.edu/db/pdf/cigoverview353.pdf>. Accessed May 4, 2010.

CIG. 2011a. About El Niño/La Niña. Available at: <http://cses.washington.edu/cig/pnwc/aboutenso.shtml>. Accessed April 8, 2011.

CIG. 2011b. Climate variability. Available at: <http://cses.washington.edu/cig/pnwc/clvariability.shtml>. Accessed April 20, 2011.

Clague, J.J. and T.S. James. 2002. History and isostatic effects of the last ice sheet in southern British Columbia. *Quaternary Science Reviews* 21:71-87.

Clallam County Parks, Fair and Facilities Department. 2008. Dungeness Recreation Area plan. Available at: [http://www.clallam.net/countyparks/html/parks\\_day\\_dungeness\\_plan.htm](http://www.clallam.net/countyparks/html/parks_day_dungeness_plan.htm). Accessed June 8, 2012.

Clallam County Parks, Fair and Facilities Department. 2012a. Dungeness Recreation Area (DRA). Available at: <http://www.clallam.net/Parks/Dungeness.html>. Accessed March 31, 2012.

Clallam County Parks, Fair and Facilities Department. 2012b. Day use parks. Available at: <http://www.clallam.net/Parks/DayUseParks.html>. Accessed March 31, 2012.

ClallamSMP\_Vision\_Report\_Draft\_6-27-11.pdf. Accessed October 4, 2011.

Clough, J.S. and E.C. Larson. 2010. Application of the sea-level affecting marshes model (SLAMM 6) to Dungeness NWR. Prepared for the U.S. Fish and Wildlife Service. Warren Pinnacle Consulting, Inc. Warren VT. 70 pp.

Clough, J.S., R.A. Park, and R. Fuller. 2010. SLAMM technical documentation, release 6.0 beta, draft, January 2010. Available at: <http://warrenpinnacle.com/prof/SLAMM/index.html>.

Clowes, R.M., M.T. Brandon, A.G. Green, C.J. Yorath, A. Sutherland Brown, E.R. Kanasewich, and C. Spencer. 1987. LITHOPROBE—southern Vancouver Island: Cenozoic subduction complex imaged by deep seismic reflections. *Canadian Journal of Earth Sciences* 24:31-51.

CLRChoice, Inc. 2010. Sequim population growth and population statistics. Available at [http://www.clrsearch.com/Sequim\\_Demographics/WA/Population-Growth-and-Population-Statistics?compare=Olympic+peninsula](http://www.clrsearch.com/Sequim_Demographics/WA/Population-Growth-and-Population-Statistics?compare=Olympic+peninsula). Accessed April 18, 2012.

Coe, D. 2004. The hydrologic impacts of roads at varying spatial and temporal scales: a review of published literature as of April 2004. Available at: [http://www.dnr.wa.gov/Publications/fp\\_cmer\\_04\\_410.pdf](http://www.dnr.wa.gov/Publications/fp_cmer_04_410.pdf). Accessed April 27, 2012.

Cole, D.N. 1983. Campsite conditions in the Bob Marshall Wilderness, Montana. Research Paper INT-312. U.S. Department of Agriculture, Forest Service, Intermountain Forestry and Range Experimental Station. Ogden, UT. 18 pp.

Cole, D.N. 1990. Ecological impacts of wilderness recreation and their management. Pages 425-466 in: J.C. Hendee, G.H. Stankey, and R.C. Lucas, eds. *Wilderness Management*. Golden, CO: North American Press.

Collins, B. 2005. Historical geomorphology and ecology of the Dungeness River delta and nearshore environments from the Dungeness Spit to Washington Harbor. Prepared for the Jamestown S’Klallam Tribe. Department of Earth and Space Sciences, University of Washington. Seattle, WA. 76 pp.

Comer, P., D. Faber-Langendoen, R. Evans, S. Gawler, C. Josse, G. Kittel, S. Menard, M. Pyne, M. Reid, K. Schulz, K. Snow, and J. Teague. 2003. *Ecological systems of the United States: a working classification of U.S. terrestrial systems*. NatureServe. Arlington, VA. 75 pp.

Conlan, R. and R. Service. 2000. El Niño and La Niña: tracing the dance of ocean and atmosphere. Available at: [http://www7.nationalacademies.org/opus/el\\_nino\\_PDF.pdf](http://www7.nationalacademies.org/opus/el_nino_PDF.pdf). Accessed December 20, 2006.

Cooke, A.S. 1987. Disturbance by anglers of birds at Grafam Water. *ITE Symposium* 19:15-22.

Coombs, E.M., J.K. Clark, G.L. Piper, and A.F. Cofrancesco, Jr. 2004. *Biological control of invasive plants in the United States*. Corvallis, OR: Oregon State University Press.

COSEWIC (Committee on the Status of Endangered Wildlife in Canada). 2003. COSEWIC assessment and status report on the sand-verbena moth *Copablepharon fuscum* in Canada. Committee on the Status of Endangered Wildlife in Canada. Ottawa, Ontario, Canada. vii + 39 pp.

- Coumou, D. and S. Rahmstorf. 2012. A decade of weather extremes. Nature climate change, perspective. Available at: <http://sciences.blogs.liberation.fr/files/10-ans-dextremes-climatiques.pdf>. Accessed April 27, 2012.
- Cowardin, L.M., V.Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Department of the Interior; Fish and Wildlife Service. Washington, D.C. 130 pp.
- Cox, R.D. and V.J. Anderson. 2004. Increasing native diversity of cheatgrass-dominated rangeland through assisted succession. *Journal of Range Management* 57:203-210.
- Cullinan, T. 2001. Important bird areas of Washington. Audubon Washington. Olympia, WA. 170 pp.
- Dahl, T.E. 1990. Wetland losses in the United States 1780s to 1980s. U.S. Department of the Interior, Fish and Wildlife Service. Washington, D.C. 13 pp.
- Dahl, T.E. 2006. Status and trends of wetlands in the conterminous United States 1998 to 2004. U.S. Department of the Interior, Fish and Wildlife Service, Washington, D.C. 112 pp.
- DAHP (Washington State Department of Archaeology and Historic Preservation). 2012. Washington State Department of Archaeology and Historic Preservation information database. Available at: <https://secureaccess.wa.gov/dahp/wisaard/>. Accessed February 17, 2012.
- Dauphine, N. and R.J. Cooper. 2008. Impacts of free-ranging domestic cats (*Felis catus*) on birds in the United States: a review of recent research with conservation and management recommendations. Pages 205-219 in: Proceedings of the Fourth International Partners in Flight Conference: Tundra to Tropics, 13-16 February 2008, McAllen, TX. Partners in Flight. Laurel, Maryland. 712 pp.
- Davis, S., C. Beard, N. Tilley, and B. Ryndak. Climate change education partnership visitor survey technical report: Dungeness National Wildlife Refuge. Available at: <http://climatechangepartnership.org/sites/default/files/downloads/Dungeness%20CCEP%20Visitor%20Survey%20Report.pdf>. Accessed July 23, 2012.
- DAWACT (Dungeness Area Watershed Analysis Cooperative Team). 1995. Dungeness area watershed analysis, including Gray Wolf River and MacDonald, Siebert and Johnson Creek. Prepared for the U.S. Department of Agriculture, Forest Service, Olympic National Forest. 234 pp.
- De Santo, T.L. and S.K. Nelson. 1995. Comparative reproductive ecology of the auks (family *Alcidae*) with emphasis on the marbled murrelet. Pages 33-47 in: C.J. Ralph, G.L. Hunt, M. Raphael, and J.F. Piatt, eds. Ecology and conservation of the marbled murrelet. General Technical Report PSW-GTR-152. USDA Forest Service. 420 pp.
- DeBano, L.F., D.G. Neary, and P.F. Ffolliott. 1998. Fire's effects on ecosystems. New York, NY: Wiley.
- DeCock, A.W.A.M. 1980. Flowering, pollination and fruiting in *Zostera marina* L. *Aquatic Botany* 9:201-220.

- DeLong, A. 2002. Managing visitor use and disturbance of waterbirds. a literature review of impacts and mitigation measures. Appendix L in: Stillwater National Wildlife Refuge Complex final environmental impact statement for the comprehensive conservation plan and boundary revision, Volume 2. U.S. Department of the Interior, Fish and Wildlife Service, Region 1, Portland, OR. 114 pp.
- Dethier, M.N. 1990. A marine and estuarine habitat classification system for Washington State. Washington Natural Heritage Program, Department of Natural Resources. Olympia, WA. 56 pp.
- Dibrell, W.C. 1908. Descriptive report, topographic sheets no. 2807, 2808, and 2809, Juan de Fuca Strait. U.S. Coast and Geodetic Survey.
- Dobb, E. 1998. Reality check: the debate behind the lens. Audubon 100(1):44-51, 98-99.
- DOE (U.S. Department of Energy). 2012. Carbon dioxide information analysis center. Available at: <http://cdiac.ornl.gov/whatsnew.html>. Accessed May 7, 2012.
- Dominguez, F., E. Rivera, D.P. Lettenmaier, and C.L. Castro. 2012. Changes in winter precipitation extremes for the western United States under a warmer climate as simulated by regional climate models. Geophysical Research Letters 39(L05803). doi:10.1029/2011GL050762.
- Doney, S.C., V.J. Fabry, and R.A. Feely. 2009. Ocean acidification: the other CO<sub>2</sub> problem. Annual Review of Marine Science 2009(1):169-192. Available at: <http://www.annualreviews.org/doi/pdf/10.1146/annurev.marine.010908.163834>.
- Douglas, B.C. 1991. Global sea level rise. Journal of Geophysical Research 96(C4):6981-6992.
- Dowling, B. and M.A. Weston. 1999. Managing a breeding population of the hooded plover *Thinornis rubricollis* in a high-use recreational environment. Bird Conservation International 9:253-270.
- Dowty, P., B. Reeves, H. Berry, S. Wyllie-Echeverria, T. Mumford, A. Sewell, P. Milos, and R. Wright. 2005. Puget Sound submerged vegetation monitoring project 2003-2004 monitoring report. Washington Department of Natural Resources. Olympia, WA. 101 pp.
- Dragovich, J.D., G.T. Petro, G.W. Thorsen, S.L. Larson, G.R. Foster, and D.K. Norman. 2005. Geologic map of the Oak Harbor, Crescent Harbor, and part of the Smith Island 7.5-minute quadrangles, Island County, Washington. Geologic map GM-59. Scale 1:24,000. Washington Department of Natural Resources, Division of Geology and Earth Resources. Two 42 x 36 inch color sheets.
- Driver, C.J., M.W. Ligothke, P. Van Voris, B.D. McVeety, B.J. Greenspan, and D.B. Brown. 1991. Routes of uptake and their relative contribution to the toxicologic response of northern bobwhite (*Colinus virginianus*) to an organophosphate pesticide. Environmental Toxicology and Chemistry 10:21-33.
- Drut, M. and J.B. Buchanan. 2000. U.S. shorebird conservation plan: Northern Pacific Coast regional shorebird management plan. Portland, OR: Fish and Wildlife Service, U.S. Department of the Interior. 31 pp.

- Duncan, K. 2012. Jamestown S'Klallam history on Jamestown S'Klallam website: [http://www.jamestowntribe.org/history/hist\\_massacre.htm](http://www.jamestowntribe.org/history/hist_massacre.htm). Accessed February 21, 2012.
- Dunning, J.B. 1984. Body weights of 686 species of North American birds. Western Bird Banding Association. Monograph No. 1. Cave Creek, AZ: Eldon Publishing.
- EDPU (Elwha-Dungeness Planning Unit). 2005. Elwha-Dungeness Watershed plan, water resource inventory area 18 (WRIA 18) and Sequim Bay in West WRIA 17. Clallam County. Port Angeles, WA. 2 vols.
- Edwards, R.W. and D.V. Bell. 1985. Fishing in troubled waters. *New Science* 1446(7 March):19-21.
- Eissinger, A. 2009. Puget Sound marine invasive species identification guide. Publication # PSP09-02. Washington Department of Fish and Wildlife. Olympia, WA. 36 pp.
- Emery, K.O. and G.G. Kuhn. 1982. Sea cliffs: their processes, profiles, and classification. *Geological Society of America Bulletin* (93):644-654.
- ESA. 2011. Draft Clallam County shorelines in transition: a vision statement for the Clallam County Shoreline Master Program update. Available at: <http://www.clallam.net/RealEstate/assets/applets/>
- Evenson, J.R. and J.B. Buchanan. 1997. Seasonal abundance of shorebirds at Puget Sound estuaries. *Washington Birds* 6:34-62.
- EXTOXNET. 1993. Movement of pesticides in the environment. Pesticide Information Project of Cooperative Extension Offices of Cornell University, Oregon State University, University of Idaho, University of California – Davis, and the Institute for Environmental Toxicology, Michigan State University. 4 pp.
- Falxa, G.A., J. Baldwin, D. Lynch, S.K. Nelson, S.L. Miller, S.F. Pearson, M.G. Raphael, C. Strong, T. Bloxton, B. Galleher, B. Hogoboom, M. Lance, and R. Young. 2009. Marbled murrelet effectiveness monitoring. Northwest Forest Plan: 2008 summary report. 19 pp.
- Fernández, G., J.B. Buchanan, R.E. Gill, Jr., R. Lanctot, and N. Warnock. 2010. Conservation plan for dunlin with breeding populations in North America (*Calidris alpina arctica*, *C. a. pacifica*, and *C. a. hudsonia*), version 1.1. Manomet Center for Conservation Sciences. Manomet, MA. 76 pp.
- Flemming, S.P., R.D. Chiasson, P.C. Smith, P.J. Austin-Smith, and R.P. Bancroft. 1988. Piping plover status in Nova Scotia related to its reproductive and behavioral response to human disturbance. *Journal of Field Ornithology* 59:321-330.
- Fletcher, J.S., J.E. Nellessen, and T.G. Pfleeger. 1994. Literature review and evaluation of the EPA food-chain (Kanaga) nomogram, and instrument for estimating pesticide residue on plants. *Environmental Toxicology and Chemistry* 13:1381-1391.
- Floberg, J., M. Goering, G. Wilhere, C. MacDonald, C. Chappell, C. Rumsey, Z. Ferdana, A. Holt, P. Skidmore, T. Horsman, E. Alverson, C. Tanner, M. Bryer, P. Iachetti, A. Harcombe, B. McDonald, T. Cook, M. Summers, and D. Rolph. 2004. Willamette Valley-Puget Trough-Georgia Basin ecoregional assessment, volume one: report. Prepared by The Nature Conservancy with support from The Nature Conservancy of Canada, Washington Department of Fish and Wildlife, Washington

Department of Natural Resources (Natural Heritage and Nearshore Habitat programs), Oregon State Natural Heritage Information Center and the British Columbia Conservation Data Centre. 150 pp.

Fordham, D.A., H.R. Akcakaya, M.B. Araujo, J. Elith, D.A. Keith, R. Pearson, T.D. Auld, C. Mellin, J.W. Morgan, T.J. Regan, M. Tozer, M. Watts, M. White, B.A. Wintle, C. Yates, and B.W. Brook. 2012. Plant extinction risk under climate change: are forecast range shifts alone a good indicator of species vulnerability to global warming? *Global Change Biology* 18(4):1357-1371. doi: 10.1111/j.1365-2486.2011.02614.x.

Frandsen, P.R. 1974. Dungeness National Wildlife Refuge interpretive master plan. M.S. thesis. University of Washington, Seattle.

Freelan, S. 2009. The Salish Sea map. Western Washington University, Bellingham, WA. Available at: <http://myweb.facstaff.wwu.edu/~stefan/SalishSea.htm>. Accessed February 8, 2010.

Fresh, K.L. 2006. Juvenile Pacific salmon in Puget Sound. Puget Sound Nearshore Partnership Report No. 2006-06. Seattle District, U.S. Army Corps of Engineers. Seattle, WA. 28 pp.

Fu, G., M.E. Barber, and S. Chen. 2010. Hydro-climatic variability and trends in Washington State for the last 50 years. *Hydrological Processes* 24:866-878.

Gabrielsen, G.W. and E.N. Smith. 1995. Physiological responses of wildlife to disturbance. Pages 95-107 in: R.L. Knight and K.J. Gutzwiller, eds. *Wildlife and recreationists: coexistence through management and research*. Washington, D.C.: Island Press.

Gaeckle, J., P. Dowty, H. Berry, and L. Ferrier. 2011. Puget Sound submerged vegetation monitoring project 2009 report. Washington Department of Natural Resources. Olympia, WA. 83 pp.

Ganguly, A., K. Steinhäuser, D. Erickson, M. Branstetter, E. Parish, N. Singh, J. Drake, and L. Buja. 2009. Higher trends but larger uncertainty and geographic variability in 21st century temperature and heat waves. *Proceedings of the National Academy of Sciences of the United States of America* 106:15555-15559

Gedalof, Z., D.L. Peterson, and N.J. Mantua. 2005. Atmospheric, climatic, and ecological controls on extreme wildfire years in the northwestern United States. *Ecological Applications* 15:154-174.

Geyer, J., I. Kiefer, S. Kreft, V. Chavez, N. Salafsky, F. Jeltsch, and P.L. Ibsch. 2011. Classification of climate-change-induced stresses on biological diversity. *Conservation Biology* 25:708-715. doi: 10.1111/j.1523-1739.2011.01676.x.

Glick, P., J. Clough, and B. Nunley. 2007. Sea-level rise and coastal habitats in the Pacific Northwest: an analysis for Puget Sound, Southwestern Washington, and Northwestern Oregon. Available at: <http://www.nwf.org/Global-Warming/Effects-on-Wildlife-and-Habitat/Estuaries-and-Coastal-Wetlands/~media/PDFs/Global%20Warming/Reports/PacificNWSeaLevelRise.ashx>. Accessed July 19, 2012.

Gosselink, J. 1980. Tidal marshes: the boundary between land and ocean. FWS/OBS-80/15. Biological Services Program, U.S. Fish and Wildlife Service. Washington, D.C. 13 pp.

Grabherr, G. 1986. Damage to vegetation by recreation in the Austrian and German Alps. Pages 74-91 in: N.G. Bayfield and G.C. Barrow, eds. The ecological impacts of outdoor recreation on mountain areas in Europe and North America. Ecology Research Group Report 9: 74-91. Wye College, Ashford, England.

Graham, K.L. 1997. Habitat use by long-toed salamanders (*Ambystoma macrodactylum*) at three different scales. M.S. thesis. University of Guelph, Ottawa, Ontario, Canada.

Graham, K. L., and G. L. Powell. 1999. Status of the Long-toed Salamander (*Ambystoma macrodactylum*) in Alberta. Alberta Environmental Protection, Fisheries and Wildlife Management Division, and Alberta Conservation Association, Wildlife Status Report No. 22, Edmonton, AB. 19 pp.

Grella, L., J. Mortenson, M. Brown, J. Roletto, and L. Culp. 2001. SEALS: Harbor seal protection and disturbance study. Pages 47-50 in: Viewing marine mammals in the wild: a workshop to discuss responsible guidelines and regulations for minimizing disturbance. 14th Biennial Conference on the Biology of Marine Mammals, Vancouver, B.C. NOAA Fisheries. 122 pp.

Grossman, D.H., D. Faber-Langendoen, A.S. Weakley, M. Anderson, P. Bourgeron, R. Crawford, K. Goodin, S. Landaal, K. Metzler, K.D. Patterson, M. Pyne, M. Reid, and L. Sneddon. 1998. International classification of ecological communities: terrestrial vegetation of the United States. Volume I, the National Vegetation Classification System: development, status, and applications. The Nature Conservancy. Arlington, VA. 126 pp.

Hamer, T.E. 1995. Inland habitat associations of marbled murrelets in western Washington. Pages 163-175 in: C.J. Ralph, G.L. Hunt, M. Raphael, and J.F. Piatt, eds. Ecology and conservation of the marbled murrelet. General Technical Report PSW-GTR-152. USDA Forest Service. Albany, CA. 420 pp.

Hamer, T.E. and S.K. Nelson. 1995. Characteristics of marbled murrelet nest trees and nesting stands. Pages 69-82 in: C.J. Ralph, G.L. Hunt, M. Raphael, and J.F. Piatt, eds. Ecology and conservation of the marbled murrelet. General Technical Report PSW-GTR-152. USDA Forest Service. Albany, CA. 420 pp.

Hamlet, A.F. and D.P. Lettenmaier. 2007. Effects of 20th century warming and climate variability on flood risk in the western U.S. Water Resources Research 43(W06427). doi: 10.1029/2006WR005099.

Hamlet, A.F., E.P. Salathé, and P. Carrasco. 2010. Statistical downscaling techniques for global climate model simulations of temperature and precipitation with application to water resources planning studies. Chapter 4 in: A.F. Hamlet, P. Carrasco, J. Deems, M.M. Elsner, T. Kamstra, C. Lee, S. Lee, G.S. Mauger, E.P. Salathé, I. Tohver, L.W. Binder. Final report for the Columbia Basin Climate Change Scenarios Project. Climate Impacts Group, Center for Science in the Earth System, Joint Institute for the Study of the Atmosphere and Ocean. University of Washington, Seattle. 27 pp.

Hammitt, W.E. and D.N. Cole. 1987. Wildland recreation: ecology and management. New York, NY: John Wiley and Sons.

- Harrod, R.J., D.W. Peterson, N.A. Povak, and E.K. Dodson. 2009. Thinning and prescribed fire effects on overstory tree and snag structure in dry coniferous forests of the interior Pacific Northwest. *Forest Ecology and Management* 258:712-721.
- Hasan, S. and P.G. Ayres. 1990. The control of weeds through fungi: principles and prospects. *Tansley Review* 23:201-222.
- Hellman, J.J., J. Byers, B.G. Bierwagen, and J.S. Duke. 2008. Five potential consequences of climate change for invasive species. *Conservation Biology* 22(3):534-543.
- Hellwig, J.L. 2010. The interaction of climate, tectonics, and topography in the Olympic Mountains of Washington State: the influence of erosion on tectonic steady-state and the synthesis of the alpine glacial history. M.S. thesis. University of Illinois at Urbana-Champaign.
- Hendee, J.C., G.H. Stankey, and R.C. Lucas. 1990. *Wilderness management*. Golden, CO: North American Press.
- Holman, M., B. Lyons, L. Kaufman, and N. Rice. 2009. Creosote beach log removal and assessment of leaching into beach sediments in Puget Sound. Proceedings of the 2009 Puget Sound Georgia Basin Ecosystem Conference. Available at: [http://depts.washington.edu/uwconf/psgb/proceedings/papers/p9\\_holman.pdf](http://depts.washington.edu/uwconf/psgb/proceedings/papers/p9_holman.pdf). Accessed June 8, 2012.
- Holman, M.L. and B.L. Lyons. 2009. Creosote assessment in Puget Sound beaches. Unpublished report for NOAA Restoration Center, Community-based Restoration Program. The Nature Conservancy. Seattle, WA. 13 pp.
- Hönisch, B., A. Ridgwell, D.N. Schmidt, E. Thomas, S.J. Gibbs, A. Sluijs, R. Zeebe, L. Kump, R.C. Martindale, S.E. Greene, W. Kiessling, J. Ries, J.C. Zachos, D.L. Royer, S. Barker, T.M. Marchitto, Jr., R. Moyer, C. Pelejero, P. Ziveri, G. Foster, and B. Williams. 2012. The geological record of ocean acidification. *Science* 335 (2 March 2012):1058-1063.
- Huber, M. and R. Knutti. 2011. Anthropogenic and natural warming inferred from changes in Earth's energy balance. *Nature Geoscience* 5:31-36. doi: 10.1038/ngeo1327.
- Huddleston, J.H. 1996. How soil properties affect groundwater vulnerability to pesticide contamination. EM 8559. Oregon State University Extension Service. Corvallis, OR. 4 pp.
- Huffman, K. 1999. San Diego South Bay survey report-effects of human activity and water craft on wintering birds in South San Diego Bay. USFWS. 45 pp.
- IAC (Washington Interagency Committee for Outdoor Recreation). 1995. *Washington Outdoors: assessment and policy plan 1995-2001*. Washington Interagency Committee for Outdoor Recreation. Olympia, WA. 39 pp.
- IAC. 2003. *Estimates of future participation in outdoor recreation in Washington State*. Washington Interagency Committee for Outdoor Recreation. Olympia, WA. 62 pp.
- IPCC (Intergovernmental Panel on Climate Change). 1996. *Climate change 1995: synthesis report*. Cambridge University Press. Cambridge, United Kingdom, and New York, NY. 572 pp.

- IPCC. 2001. Climate change 2001: the scientific basis. J.T. Houghton, Y. Ding, D.J. Griggs, M. Noguer, P.J. van der Linden, X. Dai, K. Maskell, and C.A. Johnson, eds. Contribution of Working Group I to the third assessment report of the Intergovernmental Panel on Climate Change. Cambridge University Press. Cambridge, United Kingdom and New York, NY. 881 pp.
- IPCC. 2007a. Climate change 2007: the physical science basis. S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller, eds. Contribution of Working Group I to the fourth assessment report of the Intergovernmental Panel on Climate Change. Cambridge University Press. Cambridge, United Kingdom and New York, NY. 996 pp.
- IPCC. 2007b. Climate change 2007: synthesis report. Core Writing Team, R.K. Pachauri, and A. Reisinger, eds. Contribution of Working Groups I, II, and III to the fourth assessment report of the Intergovernmental Panel on Climate Change. IPCC. Geneva, Switzerland. 104 pp.
- IPCC. 2007c. Summary for policymakers. Pages 1-18 in: S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller, eds. Climate change 2007: the physical science basis. Contribution of Working Group I to the fourth assessment report of the Intergovernmental Panel on Climate Change. Cambridge University Press. Cambridge, UK, and New York, NY. 996 pp.
- Isaak, D.J., S. Wollrab, D. Horan, and G. Chandler. 2011. Climate change effects on stream and river temperatures across the Northwest U.S. from 1980-2009 and implications for salmonid fishes. *Climatic Change* 113(2):499-524. doi: 10.1007/s10584-011-0326-z.
- Jacob, T., J. Wahr, T.W. Pfeffer, and S. Swenson. 2012. Recent contributions of glaciers and ice caps to sea level rise. *Nature* 482(23 February 2012):514-518. doi: 10.1038/nature10847.
- Jahn, L.R. and R.A. Hunt. 1964. Duck and coot ecology and management in Wisconsin. Technical Bulletin No. 33. Wisconsin Conservation Department. Madison, WI. 212 pp.
- Jamestown S'Klallam Tribe. 1994. Dungeness-Quilcene water resources management plan. Prepared for the Regional Planning Group. Available at: <https://fortress.wa.gov/ecy/publications/publications/94wrmp1718.pdf>. Accessed June 8, 2012.
- Jamestown S'Klallam Tribe. 2012. Jamestown S'Klallam history. Available at: [http://www.jamestowntribe.org/history/hist\\_jst.htm](http://www.jamestowntribe.org/history/hist_jst.htm). Accessed February, 21 2012.
- Jeffries, S., H. Harriet, J. Calambokidis, and J. Laake. 2003. Trends and status of harbor seals in Washington State 1978-1999. *Journal of Wildlife Management* 67(1):208-219.
- Jeffries, S.J., P.J. Gearin, H.R. Huber, D.L. Saul, and D.A. Pruett. 2000. Atlas of seal and sea lion haulout sites in Washington. Washington Department of Fish and Wildlife, Wildlife Science Division. Olympia, WA. 150 pp.
- Jennings, M., O. Loucks, D. Glenn-Lewin, R. Peet, D. Faber-Langendoen, D. Grossman, A. Damman, M. Barbour, R. Pfister, M. Walker, S. Talbot, J. Walker, G. Hartshorn, G. Waggoner, M. Abrams, A. Hill, D. Roberts, D. Tart, and M. Rejmanek. 2003. Guidelines for describing associations and alliances of the U.S. National Vegetation Classification. Version 3.0 November 2003. The Ecological Society of America, Vegetation Classification Panel. Washington, D.C. 100 pp. (+ appendices).

- Johannessen, J. and A. MacLennan. 2007. Beaches and bluffs of Puget Sound. Puget Sound Nearshore Partnership Report No. 2007-04. Seattle District, U.S. Army Corps of Engineers. Seattle, WA. 27 pp.
- Johnson, D.H. and T.A. O'Neil (managing directors). 2001. Wildlife-habitat relationships in Oregon and Washington. Corvallis, OR: Oregon State University Press.
- Jordan, K.M. and S.K. Hughes. 1995. Characteristics of three marbled murrelet tree nests, Vancouver Island, British Columbia. *Northwestern Naturalist* 76:29-32.
- Kaval, P. and J. Loomis. 2003. Updated outdoor recreation use values with emphasis on national park recreation. U.S. Department of the Interior, National Park Service. Fort Collins, CO. 48 pp.
- Kennedy, H. 1981. Letter report to Ellie Henke, Nisqually National Wildlife Refuge, Olympia, Washington, on a cultural resource survey at Dungeness National Wildlife Refuge. Unpublished report on file at the Cultural Resources Team office, U.S. Fish and Wildlife Service, Region 1, Sherwood, OR.
- Kerle, E.A., J.J. Jenkins, and P.A. Vogue. 1996. Understanding pesticide persistence and mobility for groundwater and surface water protection. EM 8561. Oregon State University Extension Service. Corvallis, OR. 8 pp.
- Klein, M.L. 1989. Effects of high levels of human visitation on foraging waterbirds at J.N. "Ding" Darling National Wildlife Refuge, Sanibel, Florida. Final report to the U.S. Fish and Wildlife Service. Gainesville, FL. 103 pp.
- Klein, M.L. 1993. Waterbird behavioral responses to human disturbances. *Wildlife Society Bulletin* 21:31-39.
- Knight, R.L. and D.N. Cole. 1995. Factors that influence wildlife responses to recreationists. Pages 71-79 in: R.L. Knight and K.J. Gutzwiller, eds. *Wildlife and recreationists: coexistence through management and research*. Washington, D.C.: Island Press
- Knight, R.L. and D.N. Cole. 1995. Wildlife responses to recreationists. Pages 51-70 in: R.L. Knight and K.J. Gutzwiller, eds. *Wildlife and recreationists: coexistence through management and research*. Washington, D.C.: Island Press.
- Knight, R.L. and S.K. Skagen. 1988. Effects of recreational disturbance on birds of prey: a review. Pages 355-359 in: R.L. Glinski, B.G. Pendleton, M.B. Moss, M.N. LeFranc, Jr., B.A. Millsap and S.W. Hoffman, eds. *Proceedings of the Southwest Raptor Management Symposium and Workshop, 21-24 May 1986, University of Arizona, Tucson*. National Wildlife Federation Scientific and Technical Series No.11. Washington, D.C. 395 pp.
- Knight, R.L., D.P. Anderson, and N.Y. Marr. 1991. Responses of an avian scavenging guild to anglers. *Biological Conservation* 56:195-205.
- Kroll, A.M. 1993. Haul out patterns and behavior of harbor seals, *Phoca vitulina*, during the breeding season at Protection Island, Washington. M.S. thesis. University of Washington, Seattle.

- Lafferty, K.D. 2001. Disturbance to wintering western snowy plovers. *Biological Conservation* 101:315-325.
- Lawler, J.J. and M. Mathias. 2007. Climate change and the future of biodiversity in Washington. Report prepared for the Washington Biodiversity Council. Olympia, WA. 42 pp.
- Lawler, J.J., M. Mathias, A. Yahnke, and E. Girvetz, 2008, Oregon's biodiversity in a changing climate. Report prepared for the Climate Leadership Initiative, University of Oregon. University of Washington, Seattle, WA. 55 pp.
- Lee, R.G. 1975. The management of human components in the Yosemite National Park ecosystem. Yosemite National Park, CA. 134 pp.
- Leung, L.R. and Y. Qian. 2003. Changes in seasonal and extreme hydrologic conditions of the Georgia Basin/Puget Sound in an ensemble regional climate simulation for the mid-century. *Canadian Water Resource Journal* 28(4):605-631.
- Leung, L.R., Y. Qian, X. Bin, W.M. Washington, J. Han, and J.O. Roads. 2004. Mid-century ensemble regional climate change scenarios for the western United States. *Climatic Change* 62:75-11.
- Lovejoy, T.E. and L. Hannah, eds. 2005. Climate change and biodiversity. New Haven, CT: Yale University Press.
- Martin, T.E. and J.L. Marin. 2012. Climate impacts on bird and plant communities from altered animal-plant interactions. *Nature Climate Change* 2:195-200. doi: 10.1038/nclimate1348.
- Masters, R.A. and R.L. Sheley. 2001. Invited synthesis paper: principles and practices for managing rangeland invasive plants. *Journal of Range Management* 54:502-517.
- Masters, R.A., S.J. Nissen, R.E. Gaussoin, D.D. Beran, and R.N. Stougaard. 1996. Imidazolinone herbicides improve restoration of Great Plains grasslands. *Weed Technology* 10:392-403.
- Maxwell, B.D., E. Lehnhoff, and L.J. Rew. 2009. The rationale for monitoring invasive plant populations as a crucial step for management. *Invasive Plant Science and Management* 2:1-9
- McKay, N.P., J.T. Overpeck, and B.L. Otto-Bliesner. 2011. The role of ocean thermal expansion in Last Interglacial sea level rise. *Geophysical Research Letters* 38: L14605. doi: 10.1029/2011GL048280.
- McLaughlin, J.F., J.J. Hellmann, C.L. Boggs, and P.R. Ehrlich. 2002. Climate change hastens population extinctions. *Proceedings of the National Academy of Sciences* 99(9):6070-6074.
- McQuaid-Cook, J. 1978. Effects of hikers and horses on mountain trails. *Journal of Environmental Management* 6:209-212.
- Meehl, G.A., T.F. Stocker, W.D. Collins, P. Friedlingstein, A.T. Gaye, J.M. Gregory, A. Kitoh, R. Knutti, J.M. Murphy, A. Noda, S.C.B. Raper, I.G. Watterson, A.J. Weaver, and Z.C. Zhao. 2007. Global climate projections. Pages 747-845 in: S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller, eds. *Climate change 2007: the physical science*

basis. Contribution of Working Group I to the fourth assessment report of the Intergovernmental Panel on Climate Change. Cambridge University Press. Cambridge, UK, and New York, NY. 996 pp.

Mellen-McLean, K. 2011. USFS management indicator species information sheet: pileated woodpecker (*Dryocopus pileatus*). U.S. Forest Service, Pacific Northwest Region. Portland, OR. 18 pp.

Melvin, D., D. Sargeant, G. Schriever, L. Muench, and V. Wilson. 2001. Final CAP report for the Dungeness National Wildlife Refuge. Dungeness National Wildlife Refuge. Sequim, WA. 21 pp.

Menge, B.A., F. Chan, and J. Lubchenco. 2008. Response of a rocky intertidal ecosystem engineer and community dominant to climate change. *Ecology Letters* 11:151-162.

Miller, R.E. and P.D. Blair. 1985. Input-output analysis: foundations and extensions. Englewood Cliffs, NJ: Prentice-Hall.

Miller, S.G., R.L. Knight, and C.K. Miller. 1998. Influence of recreational trails on breeding bird communities. *Ecological Applications* 8:162-169.

Mills, K.L., W.J. Sydeman, and P. J. Hodum, eds. 2005. The California current marine bird conservation plan, v. 1. PRBO Conservation Science. Stinson Beach, CA.

Mineau, P., B.T. Collins, and A. Baril. 1996. On the use of scaling factors to improve interspecies extrapolation to acute toxicity in birds. *Regulatory Toxicology and Pharmacology* 24:24-29.

Minnesota IMPLAN Group, Inc. 2004. User's guide, analysis guide, data guide. 3rd edition. Stillwater, MN: Minnesota IMPLAN Group.

Minnesota IMPLAN Group, Inc. 2008. IMPLAN system (2008 data and software). Stillwater, MN. Minnesota IMPLAN Group.

Monaghan, A.J., D.H. Bromwich, R.L. Fogt, S-H. Wang, P.A. Mayewski, D.A. Dixon, A.A. Ekaykin, M. Frezzotti, I.D. Goodwin, E. Isaksson, S.D. Kaspari, V.I. Morgan, H. Oerter, T.D. van Ommen, C.J. van der Veen, and J. Wen. 2006. Insignificant change in Antarctic snowfall since the International Geophysical Year. *Science* 313:827-831.

Moody, M.E. and R.N. Mack. 1988. Controlling the spread of plant invasions: the importance of nascent foci. *Journal of Applied Ecology* 25:1009-1021.

Moore, K.A. and F.T. Short. 2006. *Zostera*: Biology, ecology, and management. Pages 361-386 in: A.W.D. Larkum, R.J. Orth, and C.M. Duarte, eds. *Seagrasses: biology, ecology and conservation*. Dordrecht, The Netherlands: Springer.

Moore, R.L. 1994. Conflicts on multiple-use trails: synthesis of the literature and state of the practice. Federal Highway Administration Report No. FHWA-PD-94-031. Report Date: August 1994. Federal Highway Administration. Washington, D.C. 68 pp.

Moorhead, K.K. and M.M. Brinson. 1995. Response of wetlands to rising sea level in the lower coastal plain of North Carolina. *Ecological Applications* 5:261-271.

- Morse, L.E., J.M. Randall, N. Benton, R. Hiebert, and S. Lu. 2004. An invasive species assessment protocol: evaluating non-native plants for their impact on biodiversity. Version 1. NatureServe, Arlington, VA. 40 pp.
- Morton, J.M. 1995. Management of human disturbance and its effects on waterfowl. Pages F59- F86 in: W.R. Whitman, T. Strange, L. Widjeskog, R. Whittemore, P. Kehoe, and L. Roberts, eds. Waterfowl habitat restoration, enhancement and management in the Atlantic flyway. 3rd edition. Dover, DE: Environmental Management Committee, Atlantic Flyway Council Technical Section, and the Delaware Division of Fish and Wildlife.
- Mote, P., A. Petersen, S. Reeder, H. Shipman, and L. Whitely-Binder. 2008. Sea level rise in the coastal waters of Washington State. University of Washington Climate Impacts Group and the Washington Department of Ecology. 11 pp.
- Mote, P.W. 2003. Trends in temperature and precipitation in the Pacific Northwest during the twentieth century. *Northwest Science* 77:271-282.
- Mote, P.W. and E.P. Salathé. 2009. Future climate in the Pacific Northwest. Chapter 1 in: J. Littell, M.M. Elsner, L.W. Binder, and A. Snover, eds. The Washington Climate change impacts assessment. Climate Impacts Group, University of Washington. Seattle, WA. 407 pp.
- Mote, P.W. and E.P. Salathé. 2010. Future climate in the Pacific Northwest. *Climatic Change* 102(1-2):29-50.
- Mote, P.W., A.F. Hamlet, M.P. Clark, and D.P. Lettenmaier. 2005. Declining mountain snowpack in western North America. *Bulletin of the American Meteorological Society* 86(1):39-49.
- Muehlstein, L.K., D. Porter, and F.T. Short. 1991. *Labyrinthula zosterae sp. nov.*, the causative agent of wasting disease of eelgrass, *Zostera marina*. *Mycologia* 83:180-191.
- Mullin, B.H., L.W. Anderson, J.M. DiTomaso, R.E. Eplee, and K.D. Getsinger. 2000. Invasive plant species. Council for Agricultural Science and Technology Issue Paper (13):1-18.
- Mumford, T.F. 2007. Kelp and eelgrass in Puget Sound. Puget Sound Nearshore Partnership Report No. 2007-05. Seattle District, U.S. Army Corps of Engineers. Seattle, WA. 27 pp.
- MySequim.com. 2012. Welcome to Sequim, WA. Available at: <http://www.mysequim.com/aboutthenortholympicpeninsula.html>. Accessed March 28, 2012
- Naef, V. 1996. 1996. Susceptibility of forest avifauna to nest predation in varying northwestern Washington landscapes. M.S. thesis. Western Washington University, Bellingham.
- Nagy, J.A.S. and G.W. Scotter. 1974. A quantitative assessment of the effects of human and horse trampling on natural areas, Waterton Lakes National Park. Canadian Wildlife Service. Edmonton, Alberta, Canada. 145 pp.
- NAS (National Academy of Sciences). 2008. Understanding and responding to climate change: highlights of National Academies reports. 2008 edition. Board on Atmospheric Sciences and Climate, National Academy of Sciences. Washington, D.C. 23 pp.

NASA (National Aeronautics and Space Administration). 2012. NASA mission takes stock of Earth's melting land ice. Available at: <http://www.jpl.nasa.gov/news/news.cfm?release=2012-036#4>. Accessed March, 2012.

NatureServe. 2010. International ecological classification standard: terrestrial ecological classifications. NatureServe Central Databases. Arlington, VA. Data current as of February 28, 2010.

NatureServe. 2011. NatureServe explorer: an online encyclopedia of life [web application]. Version 7.1. Available at: <http://www.natureserve.org/explorer>. Accessed September 20, 2011.

NatureServe. 2012. International ecological classification standard: terrestrial ecological classifications. NatureServe Central Databases. Arlington, VA. Data current as of April 24, 2012.

NAWMP (North American Waterfowl Management Plan) Plan Committee. 2004. North American waterfowl management plan 2004. Strategic guidance: strengthening the biological foundation. Canadian Wildlife Service, U.S. Fish and Wildlife Service, Secretaria de Medio Ambiente y Recursos Naturales. 22 pp.

NCDC (National Climatic Data Center). 2011. NCDC storm events – Washington. Available at: <http://www4.ncdc.noaa.gov/cgi-win/wwcgi.dll?wwevent~storms>. Accessed June 2, 2011.

Neiman, P.J., F.M. Ralph, A.B. White, J. Lundquist, and M.D. Dettinger, 2008. Meteorological characteristics and overland precipitation impacts of atmospheric rivers affecting the West Coast of North America based on eight years of SSM/I satellite observations. *Journal of Hydrometeorology* 9:22-47.

Nelson, S.K. 1997. Marbled murrelet (*Brachyramphus marmoratus*). In: A. Poole and F. Gill, eds. *Birds of North America*, No. 276. Academy of Natural Sciences and American Ornithologists Union. Philadelphia, PA, and Washington, D.C. 32 pp.

Nelson, S.K. and T.E. Hamer. 1995. Nest success and the effects of predation on marbled murrelets. Pages 89-97 in: C.J. Ralph, G.L. Hunt, M. Raphael, and J.F. Piatt, eds. *Ecology and conservation of the marbled murrelet*. General Technical Report PSW-GTR-152. USDA Forest Service. 420 pp.

NOAA (National Oceanic and Atmospheric Administration). 2011a. Tidal benchmark data sheet – Port Angeles, Washington (9444090). Available at: [http://tidesandcurrents.noaa.gov/data\\_menu.shtml?stn=9444090%20Port%20Angeles,%20WA&type=Bench%20Mark%20Data%20Sheets](http://tidesandcurrents.noaa.gov/data_menu.shtml?stn=9444090%20Port%20Angeles,%20WA&type=Bench%20Mark%20Data%20Sheets). Accessed June 8, 2012.

NOAA. 2011b. Tidal benchmark data sheet – Port Townsend, Washington (9444900). Available at: [http://tidesandcurrents.noaa.gov/data\\_menu.shtml?stn=9444900%20Port%20Townsend,%20WA&type=Bench%20Mark%20Data%20Sheets](http://tidesandcurrents.noaa.gov/data_menu.shtml?stn=9444900%20Port%20Townsend,%20WA&type=Bench%20Mark%20Data%20Sheets). Accessed June 8, 2012.

NOAA. 2011c. Station information – Port Angeles, Washington (9444090). Available at: [http://tidesandcurrents.noaa.gov/station\\_info.shtml?stn=9444090%20Port%20Angeles,%20WA](http://tidesandcurrents.noaa.gov/station_info.shtml?stn=9444090%20Port%20Angeles,%20WA). Accessed June 8, 2012.

NOAA. 2011d. Station information – Port Townsend, Washington (9444900). Available at: [http://tidesandcurrents.noaa.gov/station\\_info.shtml?stn=9444900%20Port%20Townsend,%20WA](http://tidesandcurrents.noaa.gov/station_info.shtml?stn=9444900%20Port%20Townsend,%20WA). Accessed June 8, 2012.

- NOAA. 2011e. Sea level trends. Available at: <http://tidesandcurrents.noaa.gov/sltrends/sltrends.shtml>. Accessed April 8, 2011.
- NOAA. 2012a. Global climate change indicators. Available at: <http://www.ncdc.noaa.gov/indicators/>. Accessed May 7, 2012.
- NOAA. 2012b. Olympic Coast National Marine Sanctuary. Available at: <http://olympiccoast.noaa.gov/>. Accessed April 1, 2012.
- NOAA Fisheries. 2011. Harbor seal. Available at: <http://www.nmfs.noaa.gov/pr/species/mammals/pinnipeds/harborseal.htm>. Accessed March 2, 2011.
- Nolin, A.W. and C. Daly. 2006. Mapping “at risk” snow in the Pacific Northwest. *Journal of Hydrometeorology* 7:1164-1171.
- Norris, J.G. and I.E. Fraser. 2009. Eelgrass mapping in Crescent Bay, Freshwater Bay, Port Angeles Harbor, and Dungeness Bay. Prepared for Clallam County, WA. 41 pp. Available at: <http://www.clallam.net/ccmrc/documents/EelgrassMapping2009.pdf>. Accessed November 14, 2011.
- NRC (Natural Resource Consultants). 2006. Final report: Clallam County 2006 derelict fishing gear project. Prepared for Clallam County and Northwest Straits Commission. Natural Resource Consultants. Seattle, WA. 22 pp.
- Nur, N., G.W. Page, and L.E. Stenzel. 1999. Population viability analysis for Pacific Coast snowy plovers. Point Reyes Bird Observatory. Stinson Beach, CA.
- OCBP (Ocean Carbon and Biogeochemistry Program). 2008. Ocean acidification- recommended strategy for a U.S. national research program. Available at: [http://www.us-ocb.org/publications/OCB\\_OA\\_Whitepaper.pdf](http://www.us-ocb.org/publications/OCB_OA_Whitepaper.pdf). Accessed July 18, 2012.
- OFM (State of Washington Office of Financial Management). 2012. 2012 projections (provisional). Available at: <http://www.ofm.wa.gov/pop/gma/projections2012.asp>. Accessed April 27, 2012.
- Old-Growth Definition Task Group. 1986. Interim definitions for old-growth Douglas-fir and mixed-conifer forests in the Pacific Northwest and California. PNW-447. U.S. Department of Agriculture, Forest Service, Pacific Northwest. Portland, OR. 7 pp.
- Olson, B.E. 1999. Grazing and weeds. Chapter 8 in: R.L. Sheley and J.K. Petroff, eds. *Biology and management of noxious rangeland weeds*. Corvallis, OR: Oregon State University Press.
- OPAS (Olympic Peninsula Audubon Society). 2012. Where to look for birds on the north Olympic Peninsula. Available at: [http://www.olympicpeninsulaudubon.org/shell.php?page=birds\\_where2#8](http://www.olympicpeninsulaudubon.org/shell.php?page=birds_where2#8). Accessed March 31, 2012.
- Oregon State University. 1996. EXTOXNET-Extension Toxicology Network, Pesticide Information Profiles. Oregon State University. Corvallis, OR.
- Owen, M. 1973. The management of grassland areas for wintering geese. *Wildfowl* 24:123-130.

- Park, R.A., J.K. Lee, P.W. Mausel, and R.C. Howe. 1991. Using remote sensing for modeling the impacts of sea level rise. *World Resources Review* 3:184-220.
- Park, R.A., M.S. Trehan, P.W. Mausel, and R.C. Howe. 1989. The effects of sea level rise on U.S. coastal wetlands. Pages 1-1 to 1-55 in: J.B. Smith and D.A. Tirpak. *The potential effects of global climate change on the United States: Appendix B - sea level rise*. EPA-230-05-89-052. U.S. Environmental Protection Agency. Washington, D.C.
- Parmesan, C. 2006. Ecological and evolutionary responses to recent climate change. *Annual Review of Ecology, Evolution, and Systematics* 37(1):637-669. doi: 10.1146/annurev.ecolsys.37.091305.110100.
- Parmesan, C., C. Duarte, E. Poloczanska, A.J. Richardson, and M.C. Singer, 2011. Overstretching attribution. *Nature Climate Change* 1:2-4. doi: 10.1038/nclimate1056.
- Paton, D. 2002. Columbia mountain amphibian surveys, 2001. Alberta Species at Risk Report No. 39. Alberta Sustainable Resource Development, Fish and Wildlife Division. Edmonton, AB. 24 pp.
- Pearson, S.F., C. Sundstrom, W. Ritchie, and K. Gunther. 2010. Washington State Snowy Plover population monitoring, research, and management: 2010 nesting season research progress report. Washington Department of Fish and Wildlife, Wildlife Science Division. Olympia, WA. 32 pp.
- Penttila, D. 2007. Marine forage fishes in Puget Sound. Puget Sound Nearshore Partnership Report No. 2007-03. Seattle District, U.S. Army Corps of Engineers. Seattle, WA. 30 pp.
- Pereira, H.M., P.W. Leadley, V. Proença, R. Alkemade, J.P.W. Scharlemann, J.F. Fernandez-Manjarrés, M.B. Araújo, P. Balvanera, R. Biggs, W.W.L. Cheung, L. Chini, H.D. Cooper, E.L. Gilman, S. Guénette, G.C. Hurtt, H.P. Huntington, G.M. Mace, T. Oberdorff, C. Revenga, P. Rodrigues, R.J. Scholes, U.R. Sumaila, and M. Walpole. 2010. Scenarios for global biodiversity in the 21st century. *Science* 330:1496-1501.
- Pfeffer, W.T., J.T. Harper, and S. O'Neel. 2008. Kinematic constraints on glacier contributions to 21st-century sea-level rise. *Science* 321(5894):1340-1343.
- Pfister, C., B.A. Harrington, and M. Lavine. 1992. The impact of human disturbance on shorebirds at a migration staging area. *Biological Conservation* 60:115-126.
- Pfleeger, T.G., A. Fong, R. Hayes, H. Ratsch, and C. Wickliff. 1996. Field evaluation of the EPA (Kanaga) nomogram, a method for estimating wildlife exposure to pesticide residues on plants. *Environmental Toxicology and Chemistry* 15:535-543.
- PIF (Partners in Flight). 2010. Species assessment database. Available at: <http://www.rmbo.org/pif/scores/scores.html>. Accessed March 23, 2010.
- Pilloid, D.S. and E. Wind, eds. 2008. Habitat management guidelines for amphibians and reptiles of the northwestern United States and western Canada. Technical Publication HMG-4. Partners in Amphibian and Reptile Conservation. Birmingham, AL. 139 pp.

- Pope, R., J. DeWitt, and J. Ellerhoff. 1999. Pesticide movement: what farmers need to know. Extension Publication PAT 36. Iowa State University Extension, Ames, IA, and Iowa Department of Agriculture and Land Stewardship, Des Moines, IA. 6 pp.
- Prinn, R., S. Paltsev, A. Sokolov, M. Sarofim, J. Reilly, and H. Jacoby. 2011. Scenarios with MIT integrated global systems model: significant global warming regardless of different approaches. *Climatic Change* 104:515-537.
- PSAT (Puget Sound Action Team). 2003. 2003 Puget Sound update. Puget Sound Action Team. Olympia, WA.
- PSLC (Puget Sound LiDAR Consortium). 2001. LiDAR bare earth digital elevation model – 6 foot raster resolution – Clallam County, Washington. Available at: <http://pugetsoundlidar.ess.washington.edu/lidarata/restricted/projects/2001-02clallam.html>.
- PSNERP (Puget Sound Nearshore Ecosystem Restoration Project). 2012. Puget Sound nearshore ecosystem restoration study technical elements – scope of work. Available at: [http://www.pugetsoundnearshore.org/program\\_documents/nst\\_scope.htm](http://www.pugetsoundnearshore.org/program_documents/nst_scope.htm). Accessed June 6, 2012.
- PSWQAT (Puget Sound Water Quality Action Team). 2001. Sound facts: forage fish. Available at: [http://www.psparchives.com/publications/our\\_work/species/forage\\_fish/forage.pdf](http://www.psparchives.com/publications/our_work/species/forage_fish/forage.pdf). Accessed August 24, 2011.
- PTC (Peninsula Trails Coalition). 2012. Olympic Discovery Trail – pathway to the Pacific. Available at: <http://olympicdiscoverytrail.com/index.html>. Accessed April 1, 2012.
- Rahel, F.J. and J.D. Olden. 2008. Assessing the effects of climate change on aquatic invasive species. *Conservation Biology* 22(3):521-533. doi: 10.1111/j.1523-1739.2008.00950.x. PMID:18577081.
- Ramsay, C.A., G.C. Craig, and C.B. McConnell. 1995. Clean water for Washington—protecting groundwater from pesticide contamination. Extension Publication EB1644. Washington State University Extension. Pullman, WA. 12 pp.
- Ratti, J.T., M. Weinstein, J.M. Scott, P. Avsharian, A. Gillesberg, C.A. Miller, M.M. Szepanski, and L.K. Bomar. 1999. Feasibility study on the reintroduction of gray wolves to the Olympic Peninsula. Final draft submitted to the U.S. Fish and Wildlife Service. University of Idaho Department of Fish and Wildlife Resources and the Idaho Cooperative Research Unit. Moscow, ID. Available at: [http://library.fws.gov/pubs9/graywolf\\_olympic.doc](http://library.fws.gov/pubs9/graywolf_olympic.doc).
- Raymond, A. 1989. Letter report: cultural resource survey of Dungeness National Wildlife Refuge. Unpublished report on file at Cultural Resources Team office, U.S. Fish and Wildlife Service, Region 1, Sherwood, OR.
- RC&DC (North Olympic Peninsula Resource Conservation & Development Council). 2009. North Olympic Peninsula Resource Conservation & Development Council serving Clallam and Jefferson Counties, Washington State area plan 2008-2012, revised December 2009. Available at: <http://www.noprkd.org/dfiles/areaplan.pdf>. Accessed March 28, 2012.

- RCO (Washington State Recreation and Conservation Office). 2007. 2006 outdoor recreation survey final report. Washington State Recreation and Conservation Office. Olympia, WA. 274 pp. Available at: [http://www.rco.wa.gov/documents/rec\\_trends/2006RecSurveyFull.pdf](http://www.rco.wa.gov/documents/rec_trends/2006RecSurveyFull.pdf). Accessed July 19, 2012.
- RCO. 2008. Defining and measuring success: the role of state government in outdoor recreation, a state comprehensive outdoor recreation planning document. Available at: [http://www.rco.wa.gov/documents/rec\\_trends/SCORP\\_2008.pdf](http://www.rco.wa.gov/documents/rec_trends/SCORP_2008.pdf). Accessed April 1, 2012.
- Reed, R.J. 1980. Destructive winds caused by an orographically induced mesoscale cyclone. *Bulletin of the American Meteorological Society* 61(11):1346-1355.
- Rensel, J.E.J. 2003. Dungeness Bay bathymetry, circulation and fecal coliform studies: phase 2. Prepared for Jamestown S'Klallam Tribe and U.S. Environmental Protection Agency. Rensel Associates, Aquatic Sciences Consultants. Arlington, WA. 89 pp. Available at <http://www.jamestowntribe.org/programs/nrs/2-DungenessBayCircStudy.pdf>. Accessed July 3, 2011.
- Richards, B. 1984. The Olympic Peninsula. *National Geographic* 165(5):644-672.
- Rojek, N.A., M.W. Parker, H.R. Carter, and G.J. McChesney. 2007. Aircraft and vessel disturbances to common murre (*Uria aalge*) at breeding colonies in central California, 1997-1999. *Marine Ornithology* 35:61-69.
- Rosenzweig, C., D. Karoly, M. Vicarelli, P. Neofotis, Q. Wu, G. Casassa, A. Menzel, T.L. Root, N. Estrella, B. Seguin, P. Tryjanowski, C. Liu, S. Rawlins, and A. Imeson. 2008. Attributing physical and biological impacts to anthropogenic climate change. *Nature* 453:353-357.
- Rudnick, T.C. and M.L. Hunter. 1993. Avian nest predation in clearcuts, forests, and edges in a forest-dominated landscape. *Journal of Wildlife Management* 57:358-364.
- Ruggiero, P., C.A. Brown, P.D. Komar, J.C. Allan, D.A. Reusser, and H. Lee, II. 2010. Impacts of climate change on Oregon's coasts and estuaries. Chapter 6 in: K.D. Dello and P.W. Mote, eds. Oregon climate change assessment report. Oregon Climate Change Research Institute, Oregon State University. Corvallis, OR. 412 pp.
- Salathé, E.P., Y. Zhang, L.R. Leung, and Y. Qian. 2010. Regional climate model projections for the state of Washington. *Climatic Change* 102(1-2):51-75.
- Sanguinetti, P.A. 2003. Response of black brant (*Branta bernicla*) and harbor seal (*Phoca vitulina*) to the changes in public use management at Dungeness National Wildlife Refuge. M.A. thesis. Evergreen State College, Olympia, WA.
- Schasse, H.W. 2003. Geologic map of the Washington portion of the Port Angeles 1:100,000 quadrangle. Open-File Report 2003-6. Scale 1:100,000. Washington Division of Geology and Earth Resources. Olympia, WA. 1 sheet.
- Schasse, H.W. and R.L. Logan. 1998. Geologic map of the Sequim 7.5-minute quadrangle, Clallam County, Washington. Open File Report 98-7. Washington Division of Geology and Earth Resources. Olympia, WA. 22 pp., 2 plates. Schneider, S.H. and T.L. Root, eds. 2002. Wildlife responses to climate change, North American case studies. Washington, D.C.: Island Press.

Schwartz, M.L., P. Fabbri, and R.S. Wallace. 1987. Geomorphology of Dungeness Spit, Washington, U.S.A. *Journal of Coastal Research* 3(4):451-455.

SDTF 2003 (Spray Drift Task Force 2003). 2003. A summary of chemigation application studies. Spray Drift Task Force. Macon, MO.

Shared Salmon Strategy. 2007. Puget Sound salmon recovery plan and National Marine Fisheries Service's (NMFS) final supplement to the Shared Strategy plan. Available at: <http://www.sharedsalmonstrategy.org/plan/index.html>. Accessed July 3, 2011.

Shipman, H. 2008. A geomorphic classification of Puget Sound nearshore landforms. Puget Sound Nearshore Partnership Report No. 2008-01. Seattle District, U.S. Army Corps of Engineers, Seattle, Washington. 37 pp.

Shoshani, J. and P. Tassej, eds. 1996. *The Proboscidea—evolution and palaeoecology of elephants and their relatives*. Oxford, United Kingdom: Oxford University Press.

Simonds, F.W. and K.A. Sinclair. 2002. Surface water-ground water interactions along the lower Dungeness River and vertical hydraulic conductivity of streambed sediments, Clallam County, Washington, September 1999-July 2001. USGS Water-Resources Investigations Report 02-4161; Washington State Department of Ecology Report 02-03-027. 62 pp.

Singer, S.W., D.L. Suddjian, and S.A. Singer. 1995. Fledging behavior, flight patterns, and forest characteristics at marbled murrelet tree nests in California. *Northwestern Naturalist* 76:54-62.

Skagen, S.K., R.L. Knight, and G.H. Orians. 1991. Human disturbances of an avian scavenging guild. *Ecological Applications* 1:215-225.

Smerling, T., M. Steil, B. Stygar, and M.H. Surridge. 2005. Predicting the impact of sea level rise on national wildlife refuges: a manual for coastal managers. U.S. Fish and Wildlife Service, National Wildlife Refuge System, Division of Natural Resources. Washington, D.C.

Smith, E. and J. Baker. 2008. Pacific Island ecosystem complex. Pages 76-84 in: K.E. Osgood, ed. *Climate impacts on U.S. living marine resources: National Marine Fisheries Service concerns, activities and needs*. NOAA Technical Memorandum NMFS-F/SPO-89. U.S. Department of Commerce. Washington, D.C. 118 pp.

Smith, L. and J.D. Hunt. 1995. Nature tourism: impacts and management. Pages 203-219 in: R.L. Knight and K.J. Gutzwiller, eds. *Wildlife and recreationists: coexistence through management and research*. Washington, D.C.: Island Press.

Smith, H.I. 1907. Archaeology of the Gulf of Georgia and Puget Sound. *Memoirs of the American Museum of Natural History*. *Natural History* 4:301-441.

Snover, A.K., P.W. Mote, L. Whitely-Binder, A.F. Hamlet, and N.J. Mantua. 2005. *Uncertain Future: climate change and its Effects on Puget Sound*. Prepared for the Puget Sound Action Team. Climate Impacts Group (Center for Science in the Earth System, Joint Institute for the Study of the Atmosphere and Oceans, University of Washington, Seattle). Seattle, WA. 35 pp.

Solomon, S., D. Qin, M. Manning, R.B. Alley, T. Berntsen, N.L. Bindoff, Z. Chen, A. Chidthaisong, J.M. Gregory, G.C. Hegerl, M. Heimann, B. Hewitson, B.J. Hoskins, F. Joos, J. Jouzel, V. Kattsov, U. Lohmann, T. Matsuno, M. Molina, N. Nicholls, J. Overpeck, G. Raga, V. Ramaswamy, J. Ren, M. Rusticucci, R. Somerville, T.F. Stocker, P. Whetton, R.A. Wood, and D. Wratt. 2007. Technical summary. Pages 19-91 in: S. Solomon, D. Qin, M. Manning, Z. Chen, M. Marquis, K.B. Averyt, M. Tignor and H.L. Miller, eds. *Climate change 2007: the physical science basis. Contribution of Working Group I to the fourth assessment report of the Intergovernmental Panel on Climate Change*. Cambridge University Press. Cambridge, UK, and New York, NY. 996 pp.

Spartina Task Force. 1994. *Spartina Management Program: Integrated Weed Management for Private Lands in Willapa Bay, Pacific County, Washington*. Unpublished report prepared for the Noxious Weed Board and County Commissioners, Pacific County, Washington.

Speich, S.M., T.R. Wall, and D.A. Manuwal. 1992. The numbers of marbled murrelets in Washington marine waters. Pages 48-60 in: H.R. Carter and M.L. Morrison (eds.). *Status and conservation of the marbled murrelet in North America*. Western Foundation of Vertebrate Zoology 5. Los Angeles, CA.

Speight, M.C.D. 1973. *Outdoor recreation and its ecological effects: a bibliography and review*. Discussion Papers in Conservation 4. University College. London, United Kingdom. 35 pp.

Sperling's Best Places. 2011. *Economy in Sequim, Washington*. Available at: <http://www.bestplaces.net/economy/city/washington/sequim>. Accessed April 18, 2012.

Speulda, L.A. 2006. *Mellus Cabin, Dungeness National Wildlife Refuge: historic properties identification and evaluation report*. DAHP Report #1347100. On file at Cultural Resources Team office, U.S. Fish and Wildlife Service, Region 1, Sherwood, OR.

Stein, J.L. 1989. *Reproductive parameters and behavior of mother and pup harbor seals, Phoca vitulina richardsi, in Grays Harbor, Washington*. M.A. thesis. San Francisco State University, San Francisco, CA.

Stick, K.C. and A. Lindquist. 2009. *2008 Washington State herring stock status report*. Stock Status Report No. FPA 09-05. Washington Department of Fish and Wildlife. Olympia, WA. 111 pp.

Suryan, R. 1998. *Tracking harbor seals (Phoca vitulina richardsi) to determine dive behavior, foraging activity, and haul-out site use*. *Marine Mammal Science* 14(2):361-372.

Suttles, W. 1990. *Central Coast Salish*. Pages 453-476 in: W. Suttles, volume ed. *Handbook of North American Indians, Volume 7: Northwest Coast*. Washington, D.C.: Smithsonian Institution.

Szaniszlo, W. 2001. *California sea lion (Zalophus californianus) and Steller's sea lion (Eumetopias jubatus) interactions with vessels in Pacific Rim National Park Reserve: implications for marine mammal viewing management*. Pages 112-116 in: *Viewing marine mammals in the wild: a workshop to discuss responsible guidelines and regulations for minimizing disturbance*. 14th Biennial Conference on the Biology of Marine Mammals, Vancouver, B.C. NOAA Fisheries. 122 pp.

Tabor, R.W. and W.M. Cady. 1978. *Geologic map of the Olympic Peninsula, Washington*. Miscellaneous Investigations Series Map I-994. Scale 1:125,000. U.S. Geological Survey. Reston, VA. 2 sheets.

- Tebaldi, C., B.H. Strauss, and C.E. Zervas. 2012. Modelling sea level rise impacts on storm surges along U.S. coasts. *Environmental Research Letters* 7(1): 11 pp. doi:10.1088/1748-9326/7/1/014032.
- Teske, M.E., S.L. Bird, D.M. Esterly, S.L. Ray, and S.G. Perry. 1997. A user's guide for AgDRIFTM 1.0: a tiered approach for the assessment of spray drift of pesticides. Technical Note No. 95-10. CDI. Princeton, NJ.
- Teske, M.E., S.L. Bird, D.M. Esterly, T.B. Curbishley, S.L. Ray, and S.G. Perry. 2002. AgDRIFT®: a model for estimating near-field spray drift from aerial applications. *Environmental Toxicology and Chemistry* 21:659-671.
- Tessler, D.F., J.A. Johnson, B.A. Andres, S. Thomas, and R.B. Lanctot. 2007. Black oystercatcher (*Haematopus bachmani*) conservation action plan. International Black Oystercatcher Working Group, Alaska Department of Fish and Game, Anchorage, AK; U.S. Fish and Wildlife Service, Anchorage, AK; and Manomet Center for Conservation Sciences, Manomet, MA. 115 pp.
- Thackray, G.D. and F.J. Pazzaglia. 1994. Quaternary stratigraphy, tectonic geomorphology, and fluvial evolution of the western Olympic Peninsula, Washington. Pages 2A 1-2A 29 in: D.A. Swanson and R.A. Haugerud, eds. *Geologic Field Trips in the Pacific Northwest*, Geological Society of America Annual Meeting, Seattle, Washington, v. 2. University of Washington Department of Geological Sciences. Seattle, WA.
- Thom, R.M. 1992. Accretion rates of low intertidal salt marshes in the Pacific Northwest. *Wetlands* 12(3):147-156.
- Thom, R.M., D.K. Shreffler, and K. MacDonald. 1994. Shoreline armoring effects on coastal ecology and biological resources in Puget Sound, Washington. *Coastal Erosion Management Studies, Volume 7. Shorelands and Water Resources Program*, Washington Department of Ecology. Olympia, WA.
- Thomas, B.E., L.A. Goodman, and T.D. Olsen. 1999. Hydrogeologic assessment of the Sequim-Dungeness area, Clallam County, Washington. *Water-Resources Investigations Report 99-4048*. U.S. Geological Survey. Reston, VA. 165 pp.
- Thorson, R.M. 1980. Ice-sheet glaciation of the Puget Lowland, Washington, during the Vashon Stage (late Pleistocene). *Quaternary Research* 13:303-321.
- Todd, S., N. Fitzpatrick, A. Carter-Mortimer, and C. Weller. 2006. Historical changes to estuaries, spits, and associated tidal wetland habitats in the Hood Canal and Strait of Juan de Fuca regions of Washington State. Technical Report 06-1. Point No Point Treaty Council. Kingston, WA. 91 pp.
- Trouet, V., A.A. Taylor, A.M. Carleton, and C.M. Skinner. 2006. Fire-climate interactions in forests of the American Pacific coast. *Geophysical Research Letters* 33: L18704.
- Tuite, C.H., M. Owen, and D. Paynter. 1983. Interaction between wildfowl and recreation at Llangorse Lake and Talybont Reservoir, South Wales. *Wildfowl* 34:48-63.
- Turner, M.G., D.N. Wear and R.O. Flamm. 1996. Land ownership and land-cover change in the Southern Appalachian Highlands and the Olympic Peninsula. *Ecological Applications* 6(4):1150-1172.

- Tydeman, C.F. 1977. The importance of the close fishing season to breeding bird communities. *Journal of Environmental Management* 5:289-296.
- Tyler, T.J., W.J. Liss, R.L. Hoffman, and L.M. Ganio. 1998. Experimental analysis of trout effects on survival, growth, and habitat use of two species of ambystomatid salamanders. *Journal of Herpetology* 32:345-349.
- U.S. Census Bureau. 2006-2010 American community survey. Available at: [http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS\\_10\\_5YR\\_B01003&prodType=table](http://factfinder2.census.gov/faces/tableservices/jsf/pages/productview.xhtml?pid=ACS_10_5YR_B01003&prodType=table). Accessed April 27, 2012.
- Urban, D.J. and N.J. Cook. 1986. Ecological risk assessment. EPA 540/9-85-001. U.S. Environmental Protection Agency, Office of Pesticide Programs. Washington, D.C. 94 pp.
- USC&GS (U.S. Coast and Geodetic Survey). 1855a. 1:10,000 scale topography of New Dungeness, Strait of Juan de Fuca, Washington Territory, Thatcher Pass to Watmough Bight (t0539). Available at: <http://riverhistory.ess.washington.edu/tsheets/framedex.htm>. Accessed April 25, 2012.
- USC&GS. 1855b. 1:10,000 scale hydrography of New Dungeness, Strait of Juan de Fuca, Washington Territory(H-500). Available at: [http://riverhistory.ess.washington.edu/dungeness-maps/h-sheets/nad27/h500\\_finalresamp.zip](http://riverhistory.ess.washington.edu/dungeness-maps/h-sheets/nad27/h500_finalresamp.zip). Accessed April 25, 2012.
- USDA (U.S. Department of Agriculture Natural Resource Conservation Service). 1987. Soil survey of Clallam County, Washington—manuscript. Available at: [http://soildatamart.nrcs.usda.gov/Manuscripts/WA609/0/wa609\\_text.pdf](http://soildatamart.nrcs.usda.gov/Manuscripts/WA609/0/wa609_text.pdf). Accessed April 8, 2011.
- USDA. 2012. Soil survey geographic (SSURGO) database for Clallam County, Washington. Available at: <http://soildatamart.nrcs.usda.gov/>. Accessed June 8, 2012.
- USDC (U.S. Department of Commerce) Bureau of Economic Analysis. 2012. Regional economic accounts. Available at: <http://www.bea.gov/itable/>. Accessed April 27, 2012.
- USDI (U.S. Department of Interior), U.S. Fish and Wildlife Service, National Wildlife Refuge System. 2008. Identifying resources of concern and management priorities for a refuge: a handbook. U.S. Department of Interior. Washington, D.C. 61 pp.
- USEPA (U.S. Environmental Protection Agency). 1990. Laboratory test methods of exposure to microbial pest control agents by the respiratory route to nontarget avian species. EPA/600/3-90/070. Environmental Research Laboratory. Corvallis, OR. 82 pp.
- USEPA (U.S. Environmental Protection Agency). 2008. Reregistration eligibility decision for creosote (Case 0139). U.S. Environmental Protection Agency. Washington, D.C. 99 pp.
- USEPA. 1998. A comparative analysis of ecological risks from pesticides and their uses: background, methodology and case study. Environmental Fate and Effects Division, Office of Pesticide Programs, U.S. Environmental Protection Agency. Washington, D.C. 105 pp.
- USEPA. 2004. Overview of the ecological risk assessment process in the Office of Pesticide Programs, US Environmental Protection Agency: endangered and threatened species effects determinations. Office of Pesticide Programs. Washington, D.C. 101 pp.

- USEPA. 2005. User's guide TREX v1.2.3. Available at:  
[http://www.epa.gov/oppefed1/models/terrestrial/trex\\_usersguide.htm](http://www.epa.gov/oppefed1/models/terrestrial/trex_usersguide.htm).
- USEPA. 2010. Environmental justice. Available at:  
<http://www.epa.gov/compliance/environmentaljustice/index.html>. Accessed February 1, 2010.
- USEPA. 2012. Technical overview of ecological risk assessment risk characterization; approaches for evaluating exposure; granular, bait, and treated seed applications. Available at:  
[http://www.epa.gov/oppefed1/ecorisk\\_ders/toera\\_analysis\\_exp.htm](http://www.epa.gov/oppefed1/ecorisk_ders/toera_analysis_exp.htm). Accessed July 5, 2012.
- USFS (U.S. Forest Service). 2005. Pacific Northwest Region invasive plant program preventing and managing invasive plants final environmental impact statement. U.S. Forest Service. Portland, OR. 359 pp.
- USFWS (U.S. Fish and Wildlife Service). 1981. Draft: Dungeness canoe transport-preservation-display agreement between the U.S. Fish and Wildlife Service, Department of the Interior and Sequim Museum, Sequim, Washington. On file at Cultural Resources Team office, U.S. Fish and Wildlife Service, Region 1, Sherwood, OR.
- USFWS. 1985. Wildlife inventory plan, Puget Sound National Wildlife Refuges. U.S. Department of Interior, Fish and Wildlife Service, Region 1. Portland, OR.
- USFWS. 1986. Refuge management plan, Dungeness National Wildlife Refuge. U.S. Department of Interior, Fish and Wildlife Service, Region 1. Portland, OR. 27 pp.
- USFWS. 1992. U.S. Fish and Wildlife Service sign manual, director's memorandum signed by Acting Assistant Regional Director Carolyn Bohan, May 15, 1992. U.S. Department of Interior, Fish and Wildlife Service, Region 1. Portland, OR.
- USFWS. 1996. Endangered and threatened wildlife and plants; final designation of critical habitat for the marbled murrelet; final rule. Federal Register 61(102):26255-26320.
- USFWS. 1997a. Management of public use for Dungeness National Wildlife Refuge – final environmental assessment. U.S. Department of Interior, Fish and Wildlife Service. Sequim, WA. 53 pp. On file at the Washington Maritime National Wildlife Refuge Complex Headquarters. Sequim, Washington.
- USFWS. 1997b. Recovery plan for the threatened marbled murrelet (*Brachyramphus marmoratus*) in Washington, Oregon, and California. U.S. Fish and Wildlife Service. Portland, OR. 203 pp.
- USFWS. 2004a. Fire management plan, Washington Maritime National Wildlife Refuge Complex. U.S. Department of Interior, Fish and Wildlife Service, Region 1. Portland, Oregon. 165 pp.
- USFWS. 2004b. Writing refuge management goals and objectives: a handbook. U.S. Department of the Interior, Fish and Wildlife Service. Washington, D.C. 30 pp.
- USFWS. 2005a. Birds of management concern - Region 1 & Region 8 (CNO). U.S. Department of the Interior, Fish and Wildlife Service, Region 1. Portland, OR. 16 pp.

- USFWS. 2005b. Regional seabird conservation plan. U.S. Department of Interior, Fish and Wildlife Service, Pacific Region, Migratory Birds and Habitat Programs. Portland, OR. 261 pp. Available at: [http://www.fws.gov/pacific/migratorybirds/PDF/Seabird Conservation Plan Complete.pdf](http://www.fws.gov/pacific/migratorybirds/PDF/Seabird%20Conservation%20Plan%20Complete.pdf). Accessed July 3, 2011.
- USFWS. 2005c. Caspian tern management to reduce predation of juvenile salmonids in the Columbia River estuary, final environmental impact statement. U.S. Fish and Wildlife Service. Portland, OR.
- USFWS. 2007a. National bald eagle management guidelines. U.S. Department of the Interior, Fish and Wildlife Service, Migratory Birds Program, Arlington, VA. 23 pp.
- USFWS. 2007b. Recovery plan for the Pacific Coast population of the western snowy plover (*Charadrius alexandrinus nivosus*). 2 vol. U.S. Fish and Wildlife Service. Sacramento, CA. 751 pp.
- USFWS. 2007c. 2006 national survey of fishing, hunting, and wildlife associated recreation [CD-ROM]. U.S. Department of Interior, Fish and Wildlife Service, Division of Federal Aid. Washington, D.C.
- USFWS. 2008. Birds of conservation concern 2008. U.S. Department of Interior, Fish and Wildlife Service, Division of Migratory Bird Management. Arlington, VA. 85 pp.
- USFWS. 2009. Identifying refuge resources of concern and management priorities: a handbook. U.S. Department of the Interior, Fish and Wildlife Service, National Wildlife Refuge System. Washington, D.C. 67 pp.
- USFWS. 2010a. Rising to the urgent challenge, strategic plan for responding to accelerating climate change. U.S. Department of the Interior, Fish and Wildlife Service. Washington, D.C. 32 pp.
- USFWS. 2010b. Strategic plan for inventories and monitoring on national wildlife refuges: adapting to environmental change. U.S. Department of the Interior, Fish and Wildlife Service, Division of Refuges. Washington, D.C. 56 pp.
- USFWS. 2012a. Visitation records for the Dungeness National Wildlife Refuge, unpublished. On file at the Washington Maritime National Wildlife Refuge Complex Headquarters. Sequim, Washington.
- USFWS. 2012b. Common effects of prescribed fire on habitat types on U.S. Fish and Wildlife refuges in the Pacific Region. U.S. Department of Interior, Fish and Wildlife Service, Region 1. Portland, OR. 220 pp.
- USGCRP (U.S. Global Change Research Program). 2009. Global climate change impacts in the United States. T.R. Karl, J.M. Melillo, and T.C. Peterson, eds. Cambridge, United Kingdom: Cambridge University Press.
- USGS (U.S. Geological Survey). 2000. Pesticides in stream sediment and aquatic biota—current understanding of distribution and major influences. USGS Fact Sheet 092-00. US Geological Survey. Sacramento, CA. 4 pp.
- USHCN (U.S. Historical Climatology Network). 2012. Port Angeles, Washington (456624) monthly data. Available at: <http://cdiac.ornl.gov/cgi->

bin/broker?\_PROGRAM=prog.climsite\_monthly.sas&\_SERVICE=default&id=456624. Accessed June 8, 2012.

Valentine, N. 2006. Unpublished field notes. On file at Cultural Resources Team office, U.S. Fish and Wildlife Service, Region 1, Sherwood, OR.

Van Ormer, C., M. Littlejohn, and J.H. Gramann. Olympic National Park visitor study: summer 2000. University of Idaho Cooperative Park Studies Unit, Moscow, ID. 127 pp. Available at: <http://www.nps.gov/olymp/parkmgmt/upload/ONPvisitorstudy2000.pdf>. Accessed July 23, 2012.

Verdonck, D. 2006. Contemporary vertical crustal deformation in Cascadia. *Tectonophysics* 417(3-4): 221-230.

Vermeer, M. and S. Rahmstorf. 2009. Global sea level linked to global temperature. *Proceedings of the National Academy of Sciences* 106:21527-21532.

Vos, D.K., R.A. Ryder, and W.D. Graul. 1985. Response of breeding great blue herons to human disturbance in north central Colorado. *Colonial Waterbirds* 8:13-22.

Wantz, J.W. and R.E. Sinclair. 1981. Distribution of extreme winds in the Bonneville Power Administration service area. *Journal of Applied Meteorology* 20:1400-11.

Waring, R.H., N.C. Coops, and S.W. Running. 2011. Predicting satellite-derived patterns of large-scale disturbances in forests of the Pacific Northwest Region in response to recent climatic variation. *Remote Sensing of Environment* 115:3554-3566.

Warnock, Nils D. and Robert E. Gill. 1996. Dunlin (*Calidris alpina*), *The Birds of North America Online* (A. Poole, Ed.). Ithaca: Cornell Lab of Ornithology; Retrieved from the Birds of North America Online: <http://bna.birds.cornell.edu/bna/species/203doi:10.2173/bna.203>. Accessed July 3, 2011.

Washington State Noxious Weed Board. 2010. Common cordgrass (*Spartina angilca*). Available at: <http://www.nwcb.wa.gov/detail.asp?weed=129>. Accessed June 18, 2012.

Washington State Noxious Weed Board. 2010. Dalmatian toadflax (*Linaria dalmatica ssp. dalmatica*). Available at: <http://www.nwcb.wa.gov/detail.asp?weed=85>. Accessed June 18, 2012.

Washington State Noxious Weed Board. 2010. Lawn burweed (*Soliva sessilis*). Available at: <http://www.nwcb.wa.gov/detail.asp?weed=125>. Accessed June 18, 2012.

Washington State Noxious Weed Board. 2010. Oxeye daisy (*Leucanthemum vulgare*). Available at: <http://www.nwcb.wa.gov/detail.asp?weed=84>. Accessed June 18, 2012.

Watts, P. 1991. Hauling out behavior of harbour seals (*Phoca vitulina richardsi*), with particular attention to thermal constraints. Ph.D. dissertation. University of British Columbia, Vancouver, British Columbia, Canada.

Wauchope, R.D., T.M. Buttler, A.G. Hornsby, P.M. Augustijn-Beckers, and J.P. Burt. 1992. The SCS/ARS/CES pesticide properties database for environmental decision making. *Reviews of Environmental Contamination and Toxicology* 123:1-155.

WDEQ (Washington State Department of Environmental Quality). 1992. Clallam County shoreline master program. Prepared by the Clallam County Shoreline Advisory Committee in 1976; revised by WDEQ in 1992. 100 pp. Available at:  
[http://www.clallam.net/RealEstate/assets/applets/SHORELINE\\_MASTER\\_PROGRAM1.pdf](http://www.clallam.net/RealEstate/assets/applets/SHORELINE_MASTER_PROGRAM1.pdf). Accessed August 15, 2011.

WDFW (Washington Department of Fish and Wildlife). 1995. Washington state recovery plan for the snowy plover. Washington Department of Fish and Wildlife. Olympia, WA. 87 pp.

WDFW. 2005. Washington's comprehensive wildlife conservation strategy. Washington Department of Fish and Wildlife. Olympia, WA. 723 pp.

WDFW. 2008. Priority habitat and species list. Washington Department of Fish and Wildlife Olympia, WA. 174 pp.

WDFW. 2010. New waterfowl hunting area to open near the mouth of the Dungeness River. Press release dated October 12, 2010. Available at: <http://wdfw.wa.gov/news/oct1210b/>. Accessed March 31, 2012.

WDFW. 2012a. Hunting access, private lands access. Available at:  
[http://wdfw.wa.gov/hunting/hunting\\_access/private\\_lands/](http://wdfw.wa.gov/hunting/hunting_access/private_lands/). Accessed March 31, 2012.

WDFW. 2012b. Western Washington pheasant release program. Available at:  
<http://wdfw.wa.gov/hunting/pheasant/western/>. Accessed March 31, 2012.

WDNR (Washington State Department of Natural Resources). 2001. The Washington State ShoreZone inventory [CD-ROM]. DNR Nearshore Habitat Program. Olympia, WA.

WDNR. 2012. Washington State Department of Natural Resources. Available at:  
<http://www.dnr.wa.gov/Pages/default.aspx>. Accessed March 31, 2012.

WDOE (Washington State Department of Ecology). 2008. Strait of Juan de Fuca geographic response plan. Available at:  
[http://www.ecy.wa.gov/programs/spills/preparedness/GRP/StraitJuanDeFuca/strait\\_juan.htm](http://www.ecy.wa.gov/programs/spills/preparedness/GRP/StraitJuanDeFuca/strait_juan.htm). Accessed September 1, 2011.

WDOE. 2009a. Spill scene: 2007-2008 report. WDOE Publication 09-08-003. Spill Scene 11(1). Washington State Department of Ecology Spill Prevention, Preparedness, and Response Program. Olympia, WA. 18 pp.

WDOE. 2009b. Department of Ecology news release – March 23, 2009: Washington's oil spill protections greatly expanded since 1989 Exxon Valdez spill in Alaska. Available at:  
<http://www.ecy.wa.gov/news/2009news/2009-070.html>. Accessed October 1, 2009.

Weaver, T. and D. Dale. 1978. Trampling effects of hikers, motorcycles, and horses in meadows and forests. *Journal of Applied Ecology* 15:451-457.

Weisbrod, G. and B. Weisbrod. 1997. Measuring economic impacts of projects and programs. Economic Development Research Group. Boston, MA. 11 pp.

- Welch, J.M. and R.D. Daugherty. 1988. A cultural resource survey of a proposed enlargement of parking facilities at Dungeness National Wildlife Refuge. On file at Cultural Resources Team office, U.S. Fish and Wildlife Service, Region 1, Sherwood, OR.
- Wells, R.E., D.C. Engebretson, P.D. Snavely, Jr., and R.S. Coe. 1984. Cenozoic plate motions and the volcanotectonic evolution of western Oregon and Washington. *Tectonics* 3:275-294.
- Westerling, A.L., H.G. Hidalgo, D.R. Cayan, and T.W. Swetnam. 2006. Warming and earlier spring increase western U.S. forest wildfire activity. *Science* 313:940-943.
- Whale Trail. 2012. Welcome to the Whale Trail. Available at: <http://thewhaletrail.org/welcome-to-the-whale-trail-3>. Accessed March 31, 2012.
- Whittaker, P.L. 1978. Comparison of surface impact by hiking and horseback riding in the Great Smoky Mountain National Park. Management Report 24. National Park Service. Gatlinburg, TN. 33 pp.
- Wilcove, D.S. 1985. Nest predation in forest tracts and the decline of migratory songbirds. *Ecology* 66:1211-1214.
- Wild Earth Guardians and the Xerces Society. 2010. Petition to list the Sand-verbena Moth (*Copablepharon fuscum*) under the U.S. Endangered Species Act. Portland, OR. 20 pp.
- Wilderness.net. 2012. Olympic Wilderness fact sheet. Available at: <http://www.wilderness.net/printFactSheet.cfm?WID=428>. Accessed March 30, 2012.
- Willis, C.G., B.R. Ruhfel, R.B. Primack, A.J. Miller-Rushing, J.B. Losos, and C.C. Davis. 2010. Favorable climate change response explains non-native species' success in Thoreau's Woods. *PLoS ONE* 5(1): e8878. doi: 10.1371/journal.pone.0008878.
- Wilson, J.P. and J.P. Seney. 1994. Erosional impact of hikers, horses, motorcycles, and off-road bicycles on mountain trails in Montana. *Mountain Research and Development* 14(1):77-88.
- Wilson, U.W. 1988. Progress report: eelgrass *Zostera marina* in the Dungeness Bay area, Washington during 1987. U.S. Fish and Wildlife Service, Washington Maritime National Wildlife Refuge Complex. Sequim, WA.
- Wilson, U.W. 1993. Distribution of eelgrass *Zostera marina* in the Dungeness area during 1993. U.S. Fish and Wildlife Service, Washington Maritime National Wildlife Refuge Complex. Sequim, WA.
- Winter, L. and G.E. Wallace. 2006. Impacts of feral and free-ranging cats on bird species of conservation concern, a five-state review of New York, New Jersey, Florida, California, and Hawaii. American Bird Conservancy. The Plains, VA. 27 pp.
- Woods, N. 2004. Australian developments in spray drift management. Proceedings of the International Conference on Pesticide Application for Drift Management. Waikoloa, HI. 8 pp.
- WRCC (Western Regional Climate Center). 2011a. Climate of Washington. Available at: <http://www.wrcc.dri.edu/narratives/WASHINGTON.htm>. Accessed March 16, 2011.

WRCC. 2011b. Period of record general climate summary – temperature, Sequim 2 E, Washington (457544). Available at: <http://www.wrcc.dri.edu/cgi-bin/cliGCStT.pl?waseq2>. Accessed March 16, 2011.

WRCC. 2011c. Fall ‘Freeze’ Probabilities (Jul. 31-Dec. 31), Sequim 2 E, Washington (457544). Available at: <http://www.wrcc.dri.edu/cgi-bin/cliFFrezF.pl?waseq2>. Accessed March 16, 2011.

WRCC. 2011d. Spring ‘Freeze’ Probabilities (Jan. 1 - Jul. 31), Sequim 2 E, Washington (457544). Available at: <http://www.wrcc.dri.edu/cgi-bin/cliFFrezS.pl?waseq2>. Accessed March 16, 2011.

WRCC. 2011e. Period of record general climate summary – precipitation, Sequim 2 E, Washington (457544). Available at: <http://www.wrcc.dri.edu/cgi-bin/cliGCStP.pl?waseq2>. Accessed March 16, 2011.

WRCC. 2011f. Average wind speeds by state: Washington. Available at: <http://www.wrcc.dri.edu/htmlfiles/westwind.final.html#WASHINGTON>. Accessed March 16, 2011.

WRCC. 2011g. Average wind direction by state: Washington. Available at: <http://www.wrcc.dri.edu/htmlfiles/westwind.final.html#WASHINGTON>. Accessed March 16, 2011.

Yahner, R.N. and B.L. Cypher. 1987. Effects of nest location and depredation of artificial arboreal nests. *Journal of Wildlife Management* 51:178-181.