2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: January 30, 2013
Contact: Kyle Guzlas

1. **Region: Six**

2. **County: Pacific**

3. **Name of Area: Kindred Island, Willapa Bay**

4. **Region Priority___1____(assigned by Regional Wildlife Program Manager)**

5. **Enhancement/Restoration _____ Acquisition ____X____(check one or both)**

6. **Location of project site (attach map, aerial photo, and/or diagram):**

   Kindred Island is located along the northern rim of Willapa Bay in southwest Washington State near the city of Tokeland. Willapa Bay is the site of the Willapa National Wildlife Refuge as well as numerous preserves and Wildlife Areas owned and managed by WDFW, Washington Department of Natural Resources, Forterra, the Columbia Land Trust and The Nature Conservancy. Kindred Island is in close proximity to several previous conservation efforts funded by the Migratory Bird Stamp, National Coastal Wetlands Conservation Grants Program and the North American Wetlands Conservation Act Program.
   Numerous maps and photographs attached at the end of the proposal

7. **Current wetland acreage of project site:**

   Total Wetland Acreage = 288
   This project will protect in perpetuity an assemblage of high quality wetlands including estuarine, emergent salt marsh, marsh scrub/shrub and freshwater forested wetlands. The breakdown of the wetlands is set forth in the chart below. 68% of the total project areas are classified as declining coastal wetlands.

Wetland Type[1]	Status	Acres	% of Area
Estuarine and Marine	**Declining**	**56**	**16%**
E2AB/USN		4	1%
E2EM1/ABN		1	<1%
E2EM1N		33	9%
E2EM1P		18	5%
Freshwater Emergent	**Declining**	**186**	**52%**
PEM1A		13	3%
PEM1AH		121	34%
PEM1Ch		52	15%
Freshwater Forested/Shrub	**Stable**	**40**	**11%**
PFO1R		14	4%
PSS/EM1R		26	7%
Freshwater Pond	**Stable**	**6**	**2%**
PAB/UBH		1	<1%
PAB/UBHH		3	1%
PUBHh		2	<1%
Uplands		**67**	**19%**
Total project area		**355**	**100%**

[1]Habitat Type=USFWS National Wetlands Inventory codes;
E2AB/USN=Estuarine intertidal aquatic bed/unconsolidated shore regularly flooded
E2EM1/ABN=Estuarine intertidal emergent persistent regularly flooded
E2EM1N=Estuarine intertidal emergent persistent regularly flooded
E2EM1P=Estuarine intertidal emergent persistent irregularly flooded
PEM1A=Palustrine emergent persistent temporarily flooded
PEM1AH=Palustrine emergent persistent temporarily flooded diked/impounded
PEM1Ch=Palustrine emergent persistent seasonally flooded dike/impounded
PFO1R=Palustrine forested broad-leaved deciduous seasonal-tidal
PSS/EM1R=Palustrine scrub-shrub/emergent persistent seasonal-tidal
PAB/UBH=Palustrine aquatic bed/unconsolidated bottom permanently flooded
PAB/UBHH=Palustrine aquatic bed/unconsolidated bottom permanently flooded diked/impounded
PUBHh=Palustrine unconsolidated bottom permanently flooded diked/impounded

8. Current upland acreage of project site:

Total Upland Acreage = 67

9. If area is not owned by WDFW:

a. Current ownership:
Kindred Island LLC.

b. Zoning:
Agriculture

c. USGS Quad reference:

d. Habitat threats:

The project involves long-term protection from residential and commercial development for not only a wide variety of wetlands, but also forest/shrub upland habitats. In addition, this acquisition will remove the current use of the property as grazed agricultural pastureland.

e. Public access:

Currently there is no public access to the site. WDFW ownership will create a very large quality waterfowl hunting area (likely the largest site in Region 6).

10. Current function (attach additional sheets if necessary)

a. Primary use (breeding, migration, and/or wintering):

b. List species and numbers of waterfowl that use area:

The site provides breeding, nesting, and migrating habitat for numerous priority waterfowl species.

A. HIGH PRIORITY SPECIES	BREEDING	WINTERING	MIGRATION
1. Tule Greater White-fronted Goose		60	200
2. Dusky Canada Goose		100	300
3. Cackling Canada Goose		1,500	1,500
4. Northern Pintail		8,000	30,000
5. Mallard	3 pairs/sq mile	6,500	
6. Lesser Scaup		100	
7. Greater Scaup		100	

B. OTHER PRIORITY SPECIES	BREEDING	WINTERING	MIGRATION
1. Pacific Greater White-fronted Goose		X	200
2. Wrangel Island Snow Goose		30	30
3. Pacific Brant		2,500	
4. Wood Duck	(1pair /sq mile)		
5. Redhead			X
6. Canvasback		X	
7. Ring-necked Duck		200	
8. American Wigeon		10,000	70,000

C. OTHER SPECIES	BREEDING	WINTERING	MIGRATION
1. Western Canada Goose		1000	5000
2. Aleutian Canada Goose		100	1500
3. Taverner's Canada Goose		3000	
4. Lesser Canada Goose		1000	
5. Cinnamon Teal	100		
6. Green-winged teal		>1000	
7. White-wing Scoter		50	
8. Surf Scoter		50	
9. Bufflehead		1000	
10. Goldeneye		50	

The project areas are used by the wintering and migratory range of the **Dusky Canada** goose. Dusky geese populations have been consistently observed within the project area by Fish and Wildlife personnel.

WDFW have detailed surveys of Dusky populations within the project of 400-1000 per year. Preservation of their wintering and migration habitat is one of the priorities of the Pacific Flyway Management Plan for the goose. **White-fronted Geese** will benefit from the habitat acquisition. Several thousand White-fronted Geese use the project area during migration periods. In addition, several thousand **Cackling Canada geese** use the targeted habitat area for wintering and migration (>10,000) and will benefit from the acquisition. **Lesser and greater scaup (approximately 250)** occur on the project area. Scaup use the wetlands for wintering and migration. **Mallards** (3 pairs/sq mile, breeding)are common within the project area and occur during all times of the year. During fall migration populations are in the thousands, but hundreds remain in the winter and some remain in the summer to nest in the wetlands. Thousands of **northern pintail (30,000)** are seen throughout northern Willapa Bay. The project area provides significant benefits to breeding, migrating and wintering birds.

c. List species and numbers of other migratory game bird species that use area:

Common Name ***Scientific name***	**Status**	**Project Benefits**	**Does the project meet the goals of a specific management plan? List plan and goal.**
Greater White-fronted Goose *Anser albifrons*	High priority species	Preservation of the estuarine and emergent wetlands maintains migratory foraging habitat	USFWS Concept Plan for Wintering Waterfowl Preservation states that acquisition of important estuaries in Willapa Bay is the number one priority for all of the Pacific Northwest.
Dusky Canada Goose *Branta canadensis*	High priority species	Preservation of the estuarine and emergent wetlands maintains migratory foraging habitat	USFWS Concept Plan for Wintering Waterfowl Preservation states that acquisition of important estuaries in Willapa Bay is the number one priority for all of the Pacific Northwest.
Cackling Canada Goose *Branta canadensis*	High priority species	Preservation of the estuarine and emergent wetlands maintains migratory foraging habitat	USFWS Concept Plan for Wintering Waterfowl Preservation states that acquisition of important estuaries in Willapa Bay is the number one priority for all of the Pacific Northwest.
Ring-Necked Duck *Aythya collaris*	Priority species	Preservation of the estuarine and emergent wetlands maintains migratory foraging habitat	USFWS Concept Plan for Wintering Waterfowl Preservation states that acquisition of important estuaries in Willapa Bay is the number one priority for all of the Pacific Northwest.
American Wigeon *Anas americana*	Priority species	Preservation of the estuarine and emergent wetlands maintains migratory foraging habitat	USFWS Concept Plan for Wintering Waterfowl Preservation states that acquisition of important estuaries in Willapa Bay is the number one priority for all of the Pacific Northwest.
Lesser and Greater Scaup *Aythya affinis and Aythya marila*	Species of Greatest Conservation Need	Preservation of the estuarine and emergent wetlands maintains migratory and wintering foraging habitat	Washington State Comprehensive Wildlife Conservation Strategy; North American Waterfowl Management Plan. Species are identified as priorities for protection of habitat and achieving population objectives.
Red-Throated Loon *Gavia stellata*	High Concern	Preservation of estuarine and emergent wetlands maintains migratory and wintering foraging habitat	Northern Pacific Rainforest Waterbird Conservation Plan
Caspian Tern *Sterna caspia*	No Status?	Preservation of estuarine and emergent wetlands maintains migratory foraging habitat	Yes. Washington Department of Fish and Wildlife Comprehensive Wildlife Conservation Strategy. <u>Protect breeding areas</u>.

Common Name ***Scientific name***	**Status**	**Project Benefits**	**Does the project meet the goals of a specific management plan? List plan and goal.**
Sanderling *Calidris alba*	High Concern	Preservation of open beach shoreline habitat maintains migratory and wintering foraging habitat	Yes. Northern Pacific Coast Regional Shorebird Management Plan identifies Willapa Bay as a site of international significance and sets a goal of protecting nesting, roosting and foraging habitat through conservation easements.
Western Sandpiper *Calidris mouri*	High Concern	Preservation of estuarine and emergent wetland habitats maintains migratory and wintering foraging habitat	Yes. Northern Pacific Coast Regional Shorebird Management Plan identifies Willapa Bay as a site of international significance and sets a goal of protecting nesting, roosting and foraging habitat through conservation easements.
Red Knot *Calidris canutus*	High Concern	Preservation of estuarine and emergent wetland habitats maintains migratory foraging habitat	Yes. Northern Pacific Coast Regional Shorebird Management Plan identifies Willapa Bay as a site of international significance and sets a goal of protecting nesting, roosting and foraging habitat through conservation easements.
Short-billed Dowitcher *Limnodromus griseus*	High Concern	Preservation of estuarine and emergent wetland habitats maintains migratory foraging habitat	Yes. Northern Pacific Coast Regional Shorebird Management Plan identifies Willapa Bay as a site of international significance and sets a goal of protecting nesting, roosting and foraging habitat through conservation easements.
Dunlin *Calidris alpina*	High Concern	Preservation of estuarine and emergent wetland habitats maintains migratory and wintering foraging habitat	Yes. Northern Pacific Coast Regional Shorebird Management Plan identifies Willapa Bay as a site of international significance and sets a goal of protecting nesting, roosting and foraging habitat through conservation easements.
Great Blue Heron *Ardea herodias*	Species of Greatest Conservation Need	Preservation of riparian habitat for nesting and pasture and all wetland types for foraging	Washington State Comprehensive Wildlife Conservation Strategy; North American Waterbird Management Plan. Goals of this plan are to protect, restore and manage high quality habitat for waterbirds, including wading birds.
Trumpeter Swan *Cygnus buccinator*	Species of Greatest Conservation Need	Preservation of emergent wetlands and maintains migratory and wintering foraging habitat	Washington State Comprehensive Wildlife Conservation Strategy; North American Waterfowl Management Plan. The species is identified as a priority for protection of habitat and achieving population objectives.
Pacific Brant *Branta bernicla*	Species of Greatest Conservation Need	Preservation of estuarine and emergent wetland habitats maintains migratory and wintering foraging habitat	Washington State Comprehensive Wildlife Conservation Strategy; North American Waterfowl Management Plan. The species is identified as a priority for protection of habitat and achieving population objectives.
Northern Pintail *Anas acuta*	Species of Greatest Conservation Need	Preservation of estuarine and emergent wetland habitats maintains migratory and wintering foraging habitat	Washington State Comprehensive Wildlife Conservation Strategy; North American Waterfowl Management Plan. The species is identified as a priority for protection of habitat and achieving population objectives.
Willet *Catoptrophorus semipalmatus*	Species of Greatest Conservation Need	Preservation of estuarine and emergent wetland habitats maintains migratory foraging habitat	Washington State Comprehensive Wildlife Conservation Strategy

Common Name ***Scientific name***	**Status**	**Project Benefits**	**Does the project meet the goals of a specific management plan? List plan and goal.**
Marbled Godwit *Limosa fedoa*	Species of Greatest Conservation Need – High Concern	Preservation of estuarine and emergent wetland habitats maintains migratory foraging habitat	Washington State Comprehensive Wildlife Conservation Strategy – Northern Pacific Coast Regional Shorebird Management Plan.
Killdeer *Charadrius vociferous*	High Concern	Preservation of wetland fringes for year-round habitat	Yes. Northern Pacific Coast Regional Shorebird Management Plan identifies Willapa Bay as a site of international significance and sets a goal of protecting nesting, roosting and foraging habitat through conservation easements.
Greater Yellowlegs *Tringa melanoleuca*	High Concern	Preservation of estuarine and emergent wetland habitats maintains migratory foraging habitat	Yes. Northern Pacific Coast Regional Shorebird Management Plan identifies Willapa Bay as a site of international significance and sets a goal of protecting nesting, roosting and foraging habitat through conservation easements.
Wilson's Snipe *Gallinago delicata*	High Concern	Preservation of emergent wetlands maintains migratory and wintering foraging habitat	Yes. Northern Pacific Coast Regional Shorebird Management Plan identifies Willapa Bay as a site of international significance and sets a goal of protecting nesting, roosting and foraging habitat through conservation easements.
Black-bellied Plover *Pluvialis squatarola*	High Concern	Preservation of estuarine and emergent wetland habitats maintains migratory foraging habitat	Yes. Northern Pacific Coast Regional Shorebird Management Plan identifies Willapa Bay as a site of international significance and sets a goal of protecting nesting, roosting and foraging habitat through conservation easements.
Whimbrel *Numenius phaeopus*	High Concern	Preservation of estuarine and emergent wetland habitats maintains migratory foraging habitat	Yes. Northern Pacific Coast Regional Shorebird Management Plan identifies Willapa Bay as a site of international significance and sets a goal of protecting nesting, roosting and foraging habitat through conservation easements.

Species	**Stage**	**Regional Plan Priority**	**Project Area Status and General Habitat Use**
Yellow-billed Loon			Does not occur at project sites or in project area
Ashy Storm-Petrel			Does not occur at project sites or in project area
Black Storm-Petrel			Does not occur at project sites or in project area
Least Storm-Petrel			Does not occur at project sites or in project area
Brandt's Cormorant	B,M,W		Commonly occurs in project area
Red-faced Cormorant			Does not occur at project sites or in project area
Northern Harrier	B,M,W	PIF "Focal Species"	Common in emergent wetlands and upland grassland habitats
Sandhill Crane			Common use in floodplain wetlands during migration
Black-bellied Plover	M,W	Shorebird "High Concern"	Area of high importance for migrants and wintering
Black Oystercatcher			Does not occur at project sites but in project area
Whimbrel	M	Shorebird "High Concern",	Extremely common during migration in the floodplain habitats
Long-billed Curlew	M	Shorebird "Low Concern"	Uncommon in tidally exposed mudflats and upland grassland habitats
Marbled Godwit	M	Shorebird "High Concern"	AK population may exclusively move through area
Black Turnstone			Does not occur at project sites but in project area
Surfbird			Does not occur at project sites but in project area
Red Knot	M	Shorebird "High Concern",	Area of high importance to western subspecies
Rock Sandpiper			Does not occur at project sites but in project area

Dunlin	M,W	Shorebird "High Concern",	Common in tidally exposed mudflats, emergent wetlands, and upland grassland habitats. Large concentrations in winter for foraging, major flyway
Short-billed Dowitcher	M,W	Shorebird "High Concern"	Large concentrations in migration
Arctic Tern			Rarely seen in project vicinity
Aleutian Tern			Does not occur at project sites or in project area
Kittlitz's Murrelet			Does not occur at project sites or in project area
Cassin's Auklet			Rarely seen in project vicinity
Short-eared Owl	M,W	PIF "Focal Species"	Occasionally seen in project vicinity
Rufous Hummingbird	B,M	PIF "Focal Species"	Common in wetland and riparian shrub and forest habitats in the spring and summer
Allen's Hummingbird			Does not occur at project sites or in project area
Lewis' Woodpecker			Does not occur at project sites or in project area
Red-breasted Sapsucker	M,W		Un-common, found in riparian forest habitats
Olive-sided Flycatcher	B,M	PIF "Focal Species"	Uncommon to Common in riparian forest habitats
Willow Flycatcher	B,M	PIF "Focal Species"	Common in wetland and riparian shrub habitats
Pacific-slope Flycatcher	B,M	PIF "Focal Species"	Common in riparian habitats in the spring and summer
Northern Rough-winged Swallow	B,M		Common over open water and emergent wetland habitats (foraging)
Marsh Wren	B,W		Common in emergent wetland and marsh habitats
Black-throated gray Warbler	B,M	PIF "Focal Species"	Uncommon to Common in riparian forest habitats
Bullock's Oriole	B,M	PIF "Focal Species"	Common in riparian forest habitats
Tricolored Blackbird			Does not occur at project sites or in project area

d. List species and numbers of other game or diversity species that use area: (note all endangered, threatened, and sensitive species)

Threatened and Endangered Species

Common name ***Scientific name***	**Status**	**Project Benefits**	**Does the project support goals of a Recovery Plan or HCP? List plan and goal.**
North American Green Sturgeon (Southern DPS) *Acipenser medirostris*	Federal threatened	The project will protect important over-summering habitat for the southern DPS green sturgeon. Large aggregations of green sturgeon, including all known spawning populations occur in Willapa Bay, including the Project Area.	Yes, the *Biological Assessment* calls for protection of over-summering habitat for green sturgeon and conservation of important migratory pathways necessary for safe and timely passage within riverine habitats and between riverine and estuarine habitats.
Bald eagle *Haliaeetus leucocephalus*	Federal - recently delisted; state sensitive	Bald eagles use north Willapa Bay including areas on and in close proximity of Kindred Island for nesting and winter foraging. By protecting the habitat within the Willapa Bay and its tributaries, bald eagles will benefit from stable habitat conditions, a stable prey base and increased connectivity of protected lands.	Yes. *USFWS Recovery Plan, Washington Coastal Zone of the Pacific Bald Eagle Recovery Plan*. 1.3121 Maintain and enhance wetland areas for waterfowl production.
Brown Pelican *Pelecanus occidentalis*	Federal - recently delisted State Endangered	Preservation of coastal migrant foraging and roosting habitat in the lower estuary, especially for prey base (fish)	Yes. The project meets recovery objective (2) of *USFWS Recovery Plan for California Brown Pelican*: Assure long-term protection of adequate food supplies and essential nesting, roosting and off shore habitat throughout the range. In addition, meets Washington Department of Fish and

Common name ***Scientific name***	**Status**	**Project Benefits**	**Does the project support goals of a Recovery Plan or HCP? List plan and goal.**
			Wildlife Comprehensive Wildlife Conservation Strategy. Protect foraging and nesting areas.
Coastal Cutthroat Trout (SW Washington DPS) *Oncorhynchus clarki*	Federal species of concern	Protecting these habitats will benefit the cutthroat trout that utilize north Willapa Bay for feeding and refuge.	Yes. The WDFW Salmon and Steelhead Stock Inventory (SASSI) lists as a goal the preservation of estuaries and riparian habitat for spawning, rearing and adult foraging and migration. *Western Native Trout Initiative* Goal 2, Protect intact watersheds, and enhance or restore habitats that have been impacted by human activities or catastrophic natural events.
Van Dyke's Salamander	Federal Species of concern State candidate	The project will conserve riparian habitat for Van Dyke's Salamander, which have been observed on adjacent sites with similar habitat.	Yes. Washington Department of Fish and Wildlife Comprehensive Wildlife Conservation Strategy. Protect any occurrence.

State Species of Concern

Common name	**Status**	**Project benefits**	**Does the project support goals of a specific Recovery Plan? List plan and goal.**
Bald eagle *Haliaeetus leucocephalus*	Federal – recently delisted; species of concern; State threatened	Bald eagles are documented using northern Willapa Bay, for nesting and winter foraging. By protecting the habitat on and adjacent to Kindred Island, bald eagles will benefit from stable habitat conditions, a stable prey base and increased connectivity of protected areas.	Yes. *USFWS Recovery Plan, Washington Coastal Zone of the Pacific Bald Eagle Recovery Plan*. 1.3121 Maintain and enhance wetland areas for waterfowl production.
Brown Pelican *Pelecanus occidentalis*	Federal Endangered, State Endangered	Preservation of coastal migrant foraging and roosting habitat in the estuary (the Project Area), especially for prey base (fish)	Yes. Washington Department of Fish and Wildlife Comprehensive Wildlife Conservation Strategy. Protect foraging and resting areas.
Common Murre *Uria aalge*	State Candidate	Preservation of north Willapa Bay provides foraging habitat, especially for prey base (fish)	Yes. Washington Department of Fish and Wildlife Comprehensive Wildlife Conservation Strategy. Protect breeding areas and concentrations.
Merlin *Falco columbarius*	State Candidate	Preservation of foraging habitat and prey base (small birds) during the non-breeding season in estuaries and wetlands	Yes. Washington Department of Fish and Wildlife Comprehensive Wildlife Conservation Strategy. Protect breeding areas.
Purple Martin *Progne subis*	State Candidate	Preservation of Willapa Bay maintains foraging habitat where insect blooms occur (aerial forage)	Yes. Washington Department of Fish and Wildlife Comprehensive Wildlife Conservation Strategy. Protect breeding and feeding areas.
Vaux's Swift *Chaetura vauxi*	State Candidate	Preservation of Willapa Bay maintains foraging habitat where insect blooms occur (aerial forage)	Yes. Washington Department of Fish and Wildlife Comprehensive Wildlife Conservation Strategy. Protect breeding and communal roost areas.

Common name	Status	Project benefits	Does the project support goals of a specific Recovery Plan? List plan and goal
Western Grebe *Aechmophorus occidentalis*	State Candidate	Preservation of north Willapa Bay provides foraging habitat, especially for the prey base (fish)	
Common Loon *Gavia imner*	State Candidate	Preservation of the Willapa estuary provides foraging habitat, especially for the prey base (fish)	Yes. Washington Department of Fish and Wildlife Comprehensive Wildlife Conservation Strategy. Protect breeding and concentration areas.
Peregine Falcon *Falco peregrinus*	Federal Species of Concern (delisted) State Sensitive	Preservation of the entire Project Area maintains open foraging habitats for prey base (birds)	Yes. Washington Department of Fish and Wildlife Comprehensive Wildlife Conservation Strategy. Protect breeding and regular occurrence areas.
Brandt's Cormorant *Phalacrocorax penicillatus*	State Candidate	Protection of Willapa Bay will maintain habitat for prey base (fish).	Yes. Washington Department of Fish and Wildlife Comprehensive Wildlife Conservation Strategy. Protect breeding and concentration areas.
Dunn's Salamander	State Candidate	Preservation of creeks flowing into Willapa Bay will benefit Dunn's salamander	Yes. Washington Department of Fish and Wildlife Comprehensive Wildlife Conservation Strategy. Protect any occurrence.
Van Dyke's Salamander	Federal Species of Concern State Candidate	The project will conserve riparian habitat for Van Dyke's Salamander.	Yes. Washington Department of Fish and Wildlife Comprehensive Wildlife Conservation Strategy. Protect any occurrence.

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

The acquisition of Kindred Island will ensure the perpetual conservation of wetlands, shoreline and forested buffers along one of the most pristine estuarine bays in the country, and its tributaries. In combination with other conservation efforts already completed, this project will ensure the most sensitive and productive habitat on north Willapa Bay will remain wild and ecologically intact in perpetuity. Without this protection, the properties could be sold for extensive residential or commercial development. Kindred Island is currently listed for sale with residential development potential, which further jeopardizes the sensitive estuarine habitat of north Willapa Bay. The acquisition of Kindred Island removes that development risk, ensuring that the ecological integrity of northern Willapa Bay will not be compromised.

Through the use of fee simple absolute acquisitions, the project will conserve a total of 355 acres in the northwest corner of Willapa Bay. Absent this acquisition, Kindred Island could be subdivided and developed for multiple home sites along and above the sensitive Willapa Bay shoreline. The project involves long-term protection from residential and commercial development for not only a wide variety of wetlands, but also forest/shrub upland habitats. In addition, this acquisition will remove the current use of the property as grazed agricultural pastureland.

Furthermore, the acquisition of Kindred Island would be considered Phase 1 of accomplishing Washington Department of Fish and Wildlife's (WDFW) overall goal of protecting and restoring the critical estuarine habitats found along the shorelines of Willapa Bay. After the acquisition of Kindred Island is complete, WDFW plans to initiate Phase 2, which would include removal of the dike that currently functions to restrict tidal inundation of pastures located on the northern portions of the property WDFW hopes to acquire. Breaching of the dike will re-establish natural estuarine habitat processes on approximately 330 acres and return the existing pasture habitat to a mosaic of estuarine mudflats, marshes, and channels. As the restoration takes place and tidal inundation occurs, plant and animal communities will shift from those species using terrestrial/freshwater habitats to those species using marine/estuarine habitats.

Objective

The objective of this project is to acquire and conserve 355 acres on and adjacent to Kindred Island that is currently at risk of conversion to residential development. The acquisition of Kindred Island will permanently remove such risks and perpetually protect some of the most pristine and productive fish and wildlife habitat in Washington State. In addition, the acquisition of Kindred Island will expand existing protected and conserved habitat in northern Willapa Bay, including approximately 700 acres of wildlife preserve on the lower North River, approximately 650 acres of preserve on the adjacent Smith Creek estuary, nearly 1,000 acres on the lower Willapa River and approximately 800 acres at the Cedar River Wildlife Area and Preserve west of the project area. See project maps, enclosed. The protection called for in this project will also provide helpful ecological benefit to the 15,500 acre Willapa National Wildlife Refuge as well as numerous Natural Area Preserves and Natural Resource Conservation Areas owned and managed by the Washington Department of Natural Resources.

b. Description of required maintenance and schedule:

The Kindred Island acquisition will be added to the suite of Willapa Bay Wildlife Areas managed by WDFW. This site will provide expansive, quality waterfowl hunting at a minimum cost, since a good portion of the property will become self-sustaining wetland habitats. WDFW will develop one or two access point to the property for walk-in access.

c. Description current water supply and water rights if applicable:

Unknown

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat	50+	
*Pair, resting water	150+	
*Nesting cover	50+	
*Winter food resources	300+	
*Hunting area	700+ Acres (while the property is only 355 acres, this acquisition will provide access to hundreds of additional acreage managed as WADNR	

	aquatic lands)	

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:
Willapa Bay mid-winter aerial surveys are expected to be continued by WDFW.

2. Cost Estimate (<u>Annual Costs</u>)

		July 1, 2013-June 30, 2014	July 1, 2014-June 30, 2015
CAPITAL BUDGET		**$100,000**	
OPERATING BUDGET			
A/B	Salaries/Benefits		
C	Personal Services		
E	Goods and Services		
G	Travel		
J/K	Equipment		
N	Grants		
Other			
TOTAL COST		**$100,000**	
Est. Annual Costs after June 30, 2015:			

The $100,000 requested in this proposal will be matched by;

- **USFWS Coastal Wetland Grant = $803,500**
  <u>(*Awarded to WDFW on January 29, 2013)</u>**
- **Forterra = $50,000**
- **Tagney Jones Family Fund at the Seattle Foundation = $50,000**
- **Wildlife Forever Fund = $50,000**
- **Ducks Unlimited Inc. = $16,237**

The $100,000 request combined with these other committed federal and private funds will go a long way toward conserving this property in perpetuity. WDFW has attempted to acquire this property for over a decade and the current market situation offers the finest opportunity to date.

MAPS, FIGURES, AND PHOTOGRAPHS

Figure 1. Map depicting the general location of Kindred Island and Willapa Bay in relation to the state of Washington, USA.

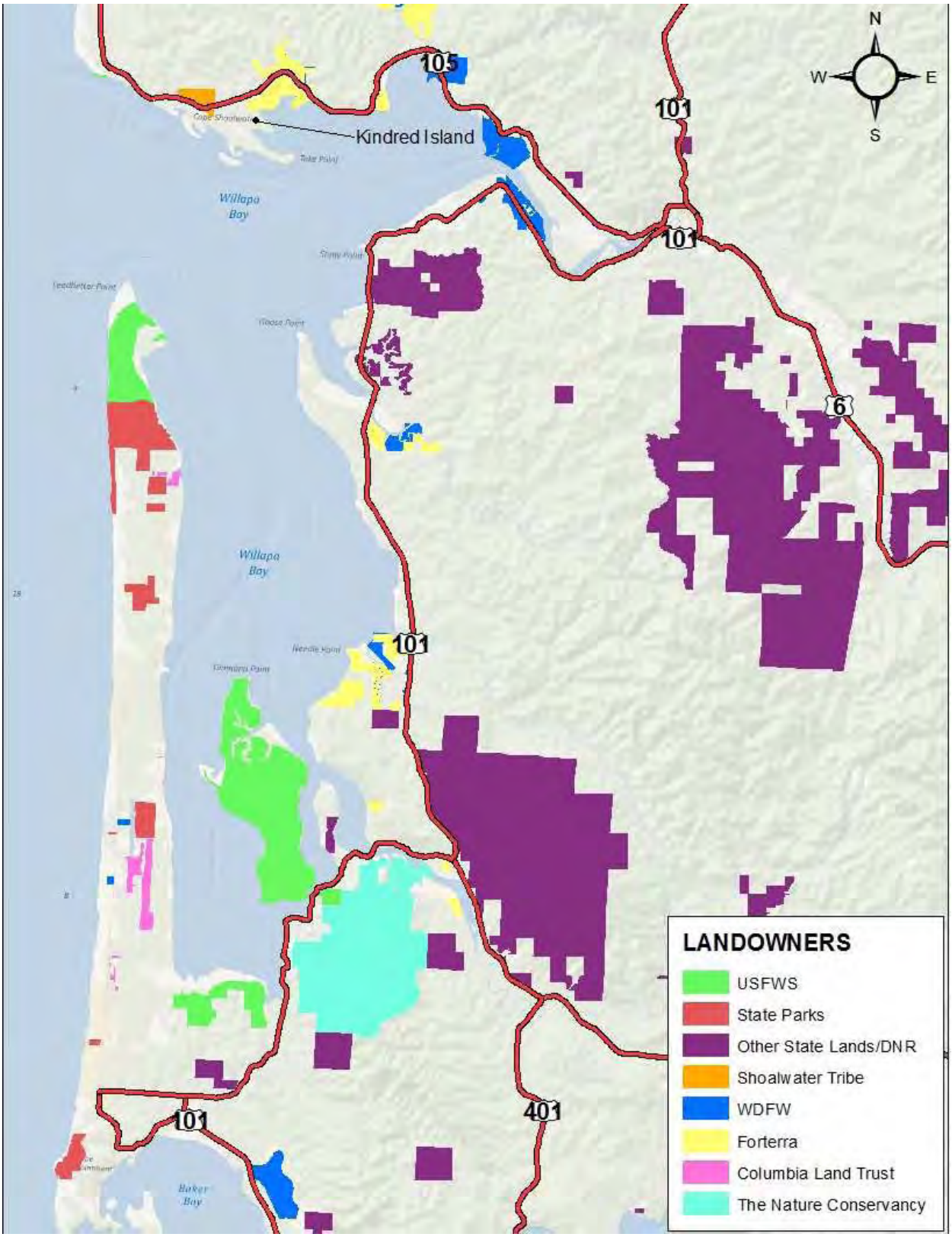
N
W
E
S
105
101
Kindred Island
Willapa Bay
101
6
Willapa Bay
101
401
101
Baker Bay
LANDOWNERS
USFWS
State Parks
Other State Lands/DNR
Shoalwater Tribe
WDFW
Forterra
Columbia Land Trust
The Nature Conservancy

Figure 2. Map depicting the location and owner of protected lands in the vicinity of Kindred Island and Willapa Bay, Pacific County, Washington.

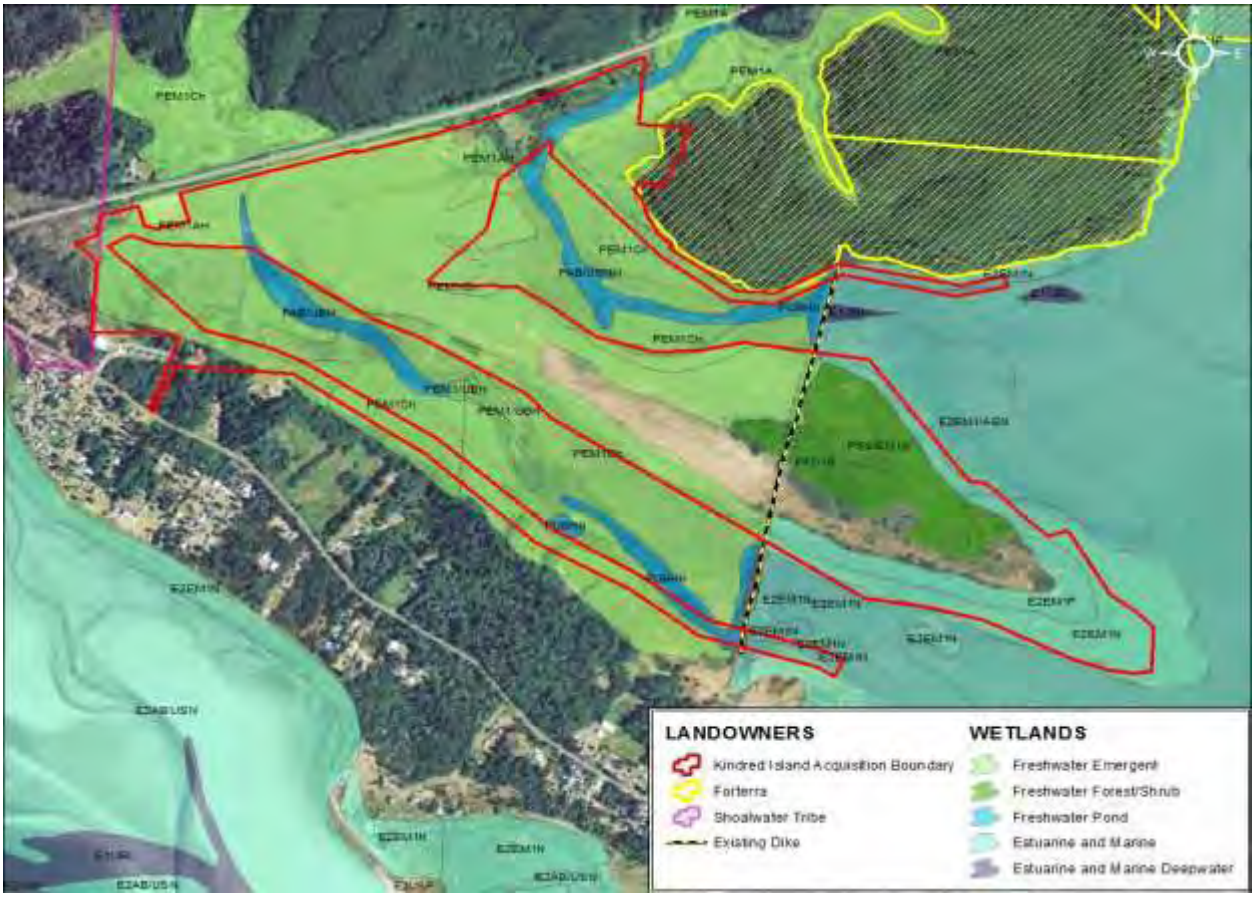

Figure 3. Map showing the distribution and abundance of wetland types present within the Kindred Island acquisition boundary, Pacific County, Washington.

North Willapa Bay / Kindred Island
Conservation Phase 1
NORTH RIVER
CEDAR RIVER
HAWKS POINT
SMITH CREEK
WILLAPA MEADOWS
WILLAPA WETLANDS
(POTTERS SLOUGH)
Legend
WDFW & Forterra Secured Conservation Areas
Kindred Island Acquisition
0
1
2
4 Miles
N

North Willapa Bay / Kindred Island
Conservation Phase 1
Legend
WDFW & Forterra Secured Conservation Areas
Kindred Island Acquisition
0
0.25
0.5
1 Miles
N

Figure 4. View of Kindred Island Property from SR 105.

Figure 5. View of freshwater emergent wetlands inside (west) of dike.

Figure 6. View of cattle grazing in the distance west of the dike

Figure 7. View of the North Tidegate.

Figure 8. Kindred Island dike.

Figure 9. View of estuarine emergent wetlands associated with the Kindred Island project.

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Migratory Bird Habitat Project Proposal

Date: **1/25/13**
Contact: **Rocky Ross, Greg Bjornstrom, Phillip Buser**

1. Region: **3**

2. County: **Franklin**

3. Name of Area: **Mesa Lake Management Unit, Sunnyside/Snake River Wildlife Area**

4. Region Priority **1** (assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration **X** Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram): **see attachments**

7. Current wetland acreage of project site: **The Mesa Lake property includes 558 total acres, with lake, pond and wetland habitat making up 108 acres or about 20% of the overall area. Wetland acreage includes the west end of Mesa Lake, which is owned by the Bureau of Reclamation but has been managed by WDFW for many years.**

8. Current upland acreage of project site: **Approximately 410 acres. The remaining acreage (about 30) is in irrigated field corn.**

9. If area is not owned by WDFW:
   a. Current ownership: **WDFW owns 558 acres, which includes about 2/3 of Mesa Lake itself. This land abuts another 60 acres of Bureau of Reclamation property, which WDFW has managed for several years.**

   b. Zoning: **Agriculture**

   c. USGS Quad reference:

   d. Habitat threats: **The property is protected through public ownership but could still be threatened by wildfire**

   e. Public access: **Two points of access: 1) from Langford Road on the west side, which includes a parking lot and primitive boat launch, and 2) a parking lot in the middle of the property, which is accessible from Sheffield Road. **This property, when wetland habitat is fully developed, can comfortably accommodate 12 separate hunting parties.**

10. Current function (attach additional sheets if necessary)

a. Primary use (breeding, migration, and/or wintering): **The property provides multiple biological needs such as breeding, wintering, fall migration and reverse migration in the spring. Cornstalk residue and moist soil plants provide important food for migrating waterfowl. Sandhill cranes are common visitors to crop fields in the spring.**

b. List species and numbers of waterfowl that use area: **This area is located 3.5 miles from the Windmill Ranch (WDFW), 6 miles from the Bailie Youth Ranch (WDFW hunting easement), and 4.5 miles from the Sugar Ranch (private) all of which have initiated waterfowl projects. Winter counts have reached 30,000 to 40,000 ducks in the immediate vicinity. Mallards make up the majority of duck concentrations, with pintails, scaup, wigeon, gadwall and teal also present. In early spring, ring-necked ducks, canvasback and redheads are generally found on moist soil units. Canada geese and white-fronted geese frequent the larger lakes/ponds, which have held large numbers of scaup (300-500) in winter. This property includes a 35 acre lake and numerous open water wetlands, which provide resting habitat for several thousand ducks post-season.**

c. List species and numbers of other migratory game bird species that use area: **100-200 resident mourning doves and approximately 1,000 seasonal doves**

d. List species and numbers of other game or diversity species that use area:
(Note all endangered, threatened, and sensitive species)
Black-necked stilts, avocet, several sandpiper species, sora, Virginia rail, long-billed curlew, red-tailed hawk, northern harrier, rough-legged hawk, kestrel, osprey, prairie falcon, barn/great horned/short-eared/long- eared/saw-whet/screech owls, white pelican, swan, white egret, great blue heron, beaver, muskrat, otter, mink, quail, pheasant, Hungarian partridge, mule deer, elk, large diversity of neotropical migrants, large population of migrating sandhill cranes

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):
The previous landowners attempted to build ponds on this property with year around flow from an irrigation drain and natural seeps, which also form from irrigation influence. Because of design flaws, 2 dikes within the project area failed. In the simplest terms, this proposal is for rebuilding both dikes and installing formal water control structures so the site can be managed as a moist soil unit. Based on a topographic survey, conducted by Ducks Unlimited in 2012, the lower dike could impound enough water to create a 7-acre pond. The upper dike, while cheaper to rebuild, would only impound about 2 acres of water. The water that runs through this drain is warm enough that it provides one of the few areas of open water during severe winter weather.

Because of year around underground seepage and substantial beaver activity, the work zone is extremely saturated. A water diversion was constructed in 2012, which can be used

to divert water away from the construction zone until it dries out so work can be performed. Beavers have temporarily repaired the breach in the lower dike, but the dam has washed out several times, sending a cascade of water, mud and debris down slope and into Mesa Lake. The dam and impounded water are currently at the stage where breaching is likely at any time.

Piles of soil from past projects are located nearby for dike building material. The lower dike will be the most challenging and we may need to build a core of more impermeable materials. Those will have to be imported materials such as rock and clay to rebuild it properly. A contingency is being added to the overall cost estimate, should this be necessary. An examination of soil types will be done prior to construction.

Because of the engineering and construction challenges associated with this project, Ducks Unlimited has been asked to design and manage the construction project. Wildlife Area staff will assist whenever possible to help reduce costs.

Beaver deceivers will be constructed upstream of both water control structures by Wildlife Area staff and volunteers. Project equipment (tractor/loader, ASV crawler, backhoe, D-5 dozer) will be used as much as possible to reduce overall costs of the project.

***This Wildlife Area receives almost no state funding for operation and maintenance. O&M is almost exclusively funded by program income from agricultural leases. All medium to large scale habitat projects, both upland and wetland, are funded with outside grants. Maintenance of those projects is handled by Wildlife Area staff.*

This is the last major wetland enhancement project scheduled for the Mesa Lake management unit. Over $30,000 of duck stamp funds and Wildlife Area program income have been spent on habitat enhancement since the fall of 2011. Some of that work included herbicide application and controlled burns to remove decadent emergent vegetation for planning and wetland enhancement activities. If this project is not funded in the 2013-15 biennium, some of that work will have to be performed again. In addition to these expenditures, an old, failing center pivot irrigation system was replaced with a new system in 2012, at a cost of $75,000, to assure successful corn production for migrating waterfowl and sandhill cranes. This pivot was funded by program income from agricultural leases. Some of the previous funds expended on this project and all funds spent under this proposal will be used as match for a planned Columbia Basin NAWCA grant, which is being developed by WDFW and DU in order to benefit additional WDFW and other properties in the mid-Columbia area.

b. Description of required maintenance and schedule: **As with all moist soil units, periodic vegetation control is needed to setback plant succession. Other duties would be to manage water flow in and out of the system. Because the water flows year around, the primary drain will carry water even during the dry season when moist soil plants are growing. Beaver trapping and relocation will occur to assure water keeps moving through the system and moist soil plants are not inundated prematurely. All work will be performed by Wildlife Area personnel and local volunteers as needed.**

c. Description of current water supply and water rights if applicable: **The water that flows down this unmanaged wasteway belongs to the Bureau of Reclamation (BOR), and is managed by the South Columbia Basin Irrigation District (SCBID). We have partnered with the SCBID and BOR on many similar projects and have received assistance from their staff in building other wetlands on the Windmill Ranch and Bailie Youth Ranch. The water flows year around through one-half mile of WDFW property before it empties into Mesa Lake, which is also owned by WDFW. The other source of water is from a series of seeps along the western boundary, which originate on private property and are formed by irrigation water moving laterally after draining to an impermeable layer of clay or rock. The most**

substantial spring first forms a pond on private land where it is artificially impounded, and then flows into the primary wasteway, adding to the overall flow.

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat	<1 ac due to early drawdown for moist soil management. Central swale will remain as open water during the dry months.	This project will enhance
*Pair, resting water	9 ac restored	Adjacent uplands and watering areas for mourning dove.
*Nesting cover	Project area is surrounded by existing nesting cover and upland cover will be enhanced with future projects.	
*Winter food resources	9 ac moist soil plants	
*Hunting area	9 ac improved; room for 3 hunting parties	

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits: **No baseline information is available except that waterfowl had stopped using this site because it was filled in with decadent emergent vegetation and was unattractive habitat. Based on years of similar wetland management on other state lands in the area, there is every expectation this will be a premier hunting, feeding and resting area for waterfowl if this project is completed and managed as designed.**

12. Cost Estimate (**Annual Costs**)

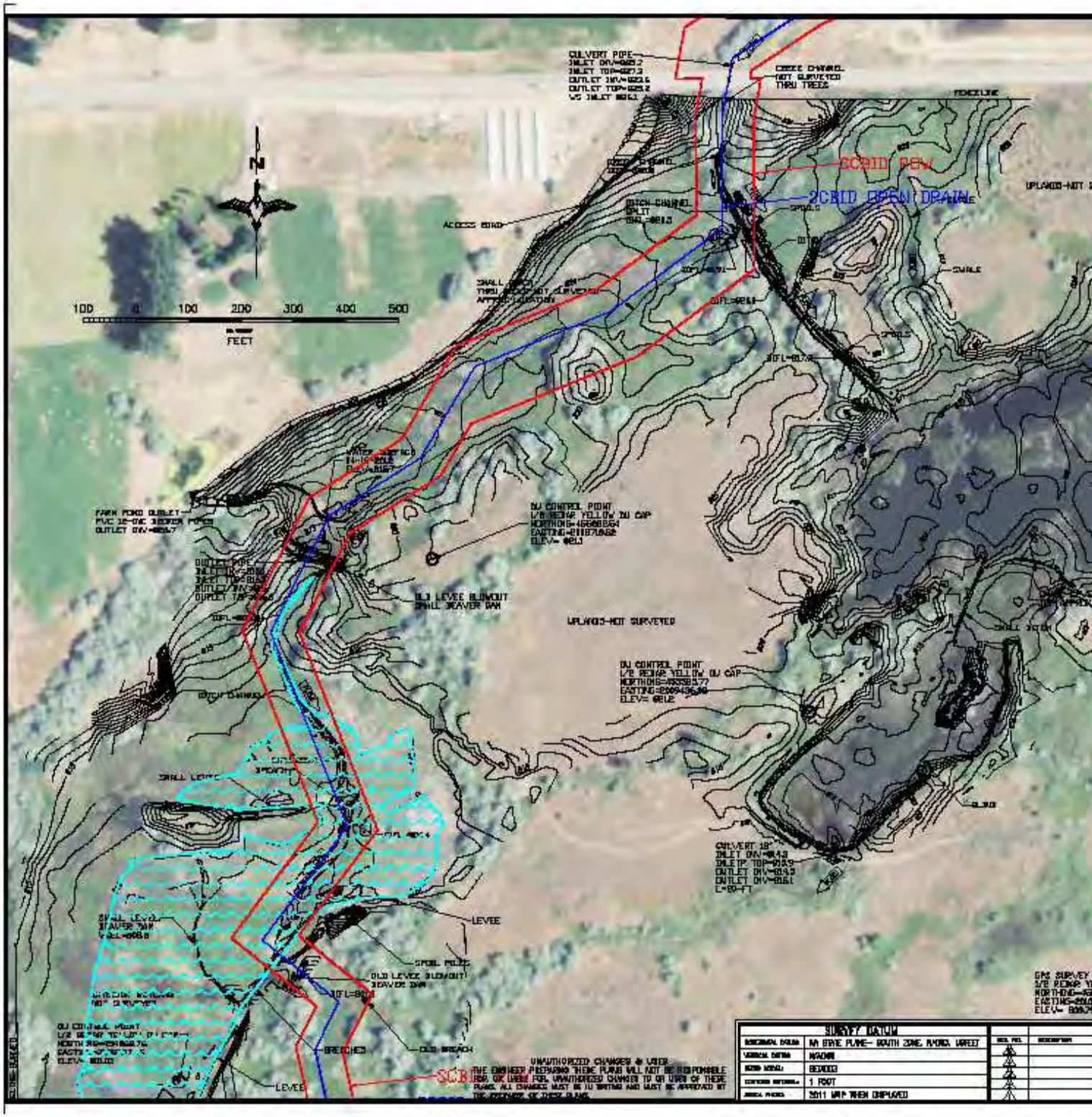
		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET		**X (work to begin in mid summer of 2014)**	**X (work to be completed by fall of 2014)**
OPERATING BUDGET			
A/B	Salaries/Benefits		
C	Personal Services	13,241.56 (see note below)	13,241.56
E	Goods and Services	41,250 (see note below)	41,250
G	Travel		
J/K	Equipment		
N	Grants		
Other			
TOTAL COST		54,491.56	54,491.56
Est. Annual Costs after June 30, 2015: **None to the duck stamp program. This project will be managed by Wildlife Area staff with program income generated from agricultural leases.**			

NOTES:

Personal Service: This line item is for Ducks Unlimited to prepare engineered drawings and administer the public works contract. If their costs exceed this amount, they will donate the rest. They will be donating some of their costs regardless (see Tina Blewett's Exhibit A)

Goods & Services: This line item is the Ducks Unlimited cost estimate for the project, which includes a 10% contingency in case dike materials need to be imported.

The total cost of the project is estimated at $108,983.12. This does not include any Wildlife Area staff time or use of project equipment, which will be maximized to reduce overall cost to the Duck Stamp program. WDFW will do any necessary revegetation work on disturbed sites.



Topographic map of the project area, provided by Ducks Unlimited in 2012. The red boundary is the irrigation right of way. The dark blue line is the general path of the drain. The light blue shows the approximate pond area that would form by repairing the lower dike. The pond footprint behind the upper dike is not shown. The wetlands to the east are those, which have been previously restored in 2012.

EXHIBIT A

Migratory Bird Stamp Grant proposal 2013 for Mesa Lake wetland restoration.

January 19, 2013.

Cost estimate from DU for the tasks discussed with Rocky Ross via email and phone. This table shows that grant funds will pay 75% of Ducks Unlimited staff hours (HRCs), and 100% of other project expenses (i.e. travel, soil test pits, indirects) except only ½ the indirects on the earthmoving contract. Description of tasks sand assumptions are listed for each task below the table.

DU will donate the remainder (25%) of our staff hours as match, and ½ the indirect rate for the earthmoving contract.

These Migratory Bird Stamp funds and any DU and WDFW match may all be combined and used as match in a Mid-Columbia Focus Area Phase 1 NAWCA standard grant proposal planned for either 2013 or 2014. WDFW staff members in several offices and wildlife areas have been collaborating with DU for over a year to plan a standard NAWCA grant proposal for the Mid-Columbia area. That NAWCA proposal will benefit many WDFW properties and other public and private lands in that focus area. Additional match is still needed to make that proposal viable. The total amount of DU match for just this Mesa Lake project, including past work and this Migratory Bird Stamp proposal, will be $15,554.

	GRANT FUNDS	DU MATCH (this grant)	Past DU Match	*Totals*
Tasks				
1. PROJECT ADMINISTRATION/MEETINGS	$ 3,245.76	$ 1,008.00		*$ 4,253.76*
2. FIELD WORK	$ 3,424.09	$ 730.50	$ 7,209.00	*$ 11,363.59*
3. CONCEPTUAL PLANNING	$ -	$ -		*$ -*
4. DESIGN	$ 7,803.76	$ 2,358.00		*$ 10,161.76*
5. PERMITTING	$ -	$ -		*$ -*
6. BIDDING CONTRACTING	$ 2,250.79	$ 584.00		*$ 2,834.79*

-- indirects on an $75,000 earthmoving contract	$ 2,062.50	$ 2,062.50		*$ 4,125.00*
7. CM-EARTHWORK	$ 7,696.22	$ 1,592.00		*$ 9,288.22*
8. CM-REVEGETATION	$ -	$ -		*$ -*
PROJECT TOTAL	$ 26,483.12	$ 8,335.00	$ 7,209.00	*$ 42,027.12*

The current DU indirect rate is 5.5%.

TOTAL DU MATCH (proposed through this grant, plus old match): $15,544

TOTAL DU COST TO THE MBS 2013 GRANT: $ 26,483.12

Assumption that the earthmoving contract will be at or less than $75,000.

Project costs include the following for each task:

1. Project administration and meetings includes hours for general project oversight, agreement negotiations, meetings, contracting, invoicing, etc. No travel or other expenses involved, DU time only.

2 Field work task includes evaluation of soils near the two embankments to be repaired/rebuilt. Work to be completed by DU Regional engineer and Geotechnical Engineer, and includes travel to the site (1 trip), and soil test pits and soil testing if needed.

NOTE: that there is a column under this task labeled PAST DU MATCH. This refers to the initial topographic survey assessment at the site in 2012, and the amount of the DU match available from this task.

3. Conceptual planning – Does not apply to this work. No DU time is estimated for this task. This task refers to drafting multiple alternate designs during a conceptual planning phase.

4. Design task includes preparation of the final design and specifications for permitting and bidding. Includes hours for DU staff (regional engineer, assistant engineer, CAD drafter and DU review), and costs for printing copies of the plans.

5. Permitting – It is understood that DU will not be needed for assistance with permitting, therefore no DU time is estimated for this task. WDFW or other entity will perform permitting activities for this project.

6. Bidding task includes a pre-bid meeting at the site to show prospective contractors the site. Includes travel to site (1 trip) for the pre-bid site meeting, preparation of bid materials, contacting potential contractors, and printing of copies of the design and specs for potential contractors.

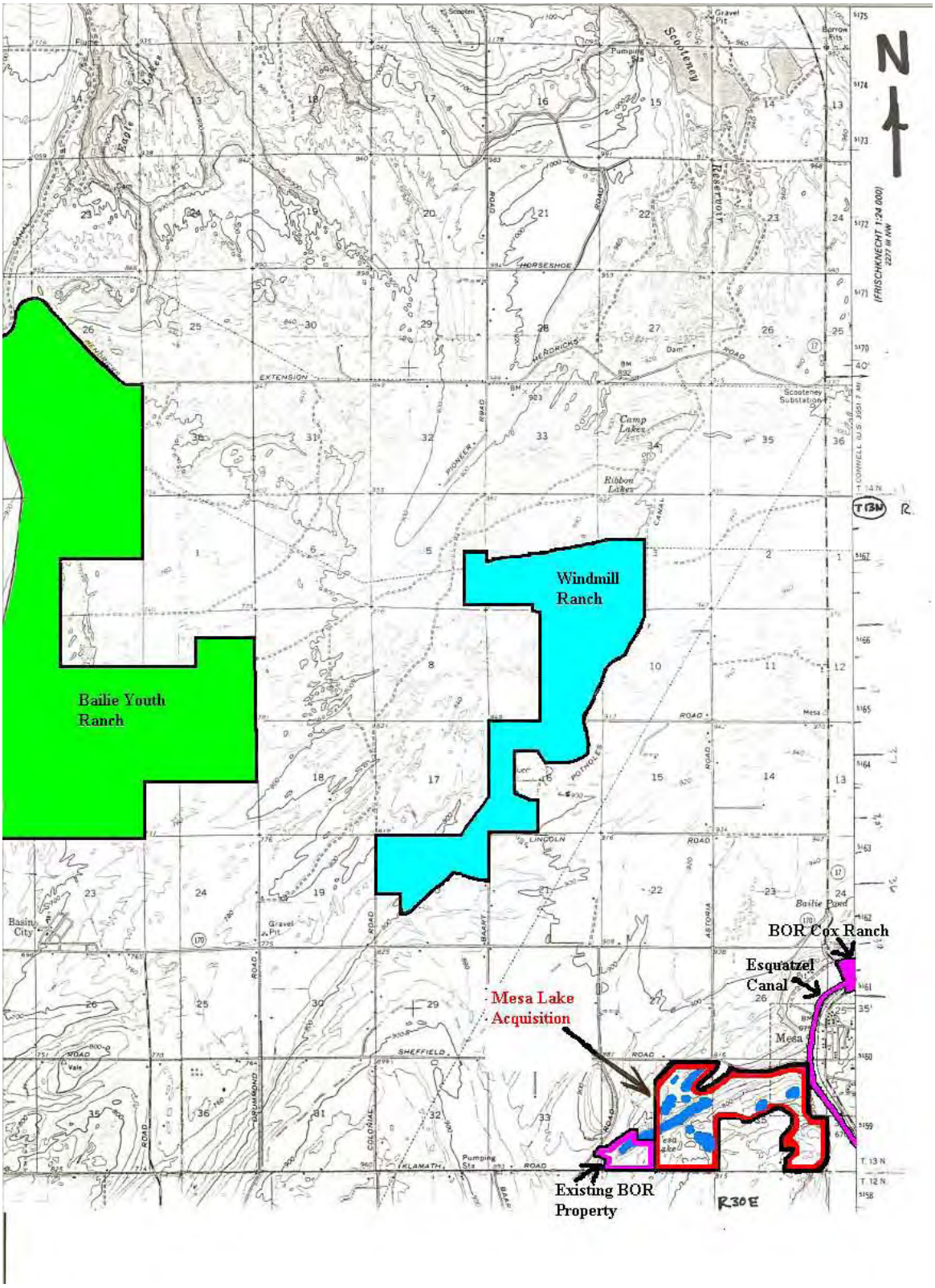
It is understood that DU will directly contract with the earthmoving contractor. The DU indirect rate of 5.5% will be added to the final amount of the earthmoving contract (the cost in the table for the indirect amount is an estimate, and is based upon as assumption that the contract will be $75,000 or less). DU will donate ½ of the indirects from the earthmoving contract to the project as match.

7. Contract management for earthwork task includes travel to the site for the surveyor (1 trip) to stake out the earthwork, travel to the site (3 trips) for the project engineer to get the contractor started at the site, and monitor/inspect the work during and after construction, and manage any issues that arise.

8. Contract management for re-vegetation – Not applicable to this project. No DU time is estimated for this task. This task usually refers to a phase where a site is re-vegetated, usually with woody or herbaceous cover such as planting riparian trees and shrubs, and a landscaping or other contractor is hired to install the plants. DU has not been asked to perform such a task on this project.

Other work not included in this scope:

Tasks not specifically mentioned above are not covered under this scope of work and cost estimate.



This map shows the juxtaposition of state-owned and controlled lands in North Franklin County. Areas shown in blue mark locations of wetland habitat on the Mesa Lake property. The privately-Owned Sugar Ranch generally lies between the Bailie Ranch and Windmill Ranch.

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: 6/5/13
Contact: Graham Peters, Biologist, Ducks Unlimited

1. Region: 6

2. County: Grays Harbor

3. Name of Area: Grass Island, South Bay, Grays Harbor

4. Region Priority_____(assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration _____ Acquisition ___X_____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram): 46.52.327 N, 124.05.301 W
T16N, R11W, S18, map attached

7. Current wetland acreage of project site: 198

8. Current upland acreage of project site: 0

9. If area is not owned by WDFW:
   a. Current ownership: private, Mr. Jim Mason

   b. Zoning: tidelands

   c. USGS Quad reference: Westport

   d. Habitat threats: private ownership, commercial shellfish, sea level rise

   e. Public access: From the Johns River WDFW boat ramp or the public boat launch in Westport, WA

10. Current function (attach additional sheets if necessary)
   a. Primary use (breeding, migration, and/or wintering):

      Migration and wintering. Highly valuable early fall migration habitat for feeding, resting, loafing and roosting.

b. List species and numbers of waterfowl that use area:

High numbers of dabbling ducks use this site from September through December, with less but significant numbers through winter and spring migration. Primary species include mallard, pintail, American wigeon, and green-winged teal. Sea ducks and diving ducks also use this portion of Grays Harbor and specifically the tidelands associated with this property. Specific estimates may be obtained from fall and winter surveys for the South Bay areas of Grays Harbor.

c. List species and numbers of other migratory game bird species that use area:

Snipe most likely use the area.

d. List species and numbers of other game or diversity species that use area:
(note all endangered, threatened, and sensitive species)

Over 300 species of birds can be found in Grays Harbor throughout an annual cycle. Loons, grebes, gulls, shorebirds, shearwaters, kittiwakes, terns, and alcids are among the many groups of birds that can be observed on this property.

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

This proposal is for acquisition only. The property is in a relatively pristine state with intact salt marsh plant communities on Grass Island proper and vegetated intertidal wetlands occupying the majority of the remaining site. The landowners stated that spartina has not re-colonized on the property and has not been a large issue in South Bay. During an aerial helicopter tour on May 20, 2013 DU did not see any spartina present.

b. Description of required maintenance and schedule:

This property is largely free of infrastructure and the main ecological functions and processes are intact. The site does contain 4 or 5 fiberglass pit blinds that would serve the public well for recreational waterfowl hunting. Spartina infestations may need continual monitoring.

c. Description of current water supply and water rights if applicable:

N/A

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat	minimal	minimal
*Pair, resting water	198	198
*Nesting cover	30	30
*Winter food resources	198	198
*Hunting area	198 (40 salt marsh)	198 (40 salt marsh)

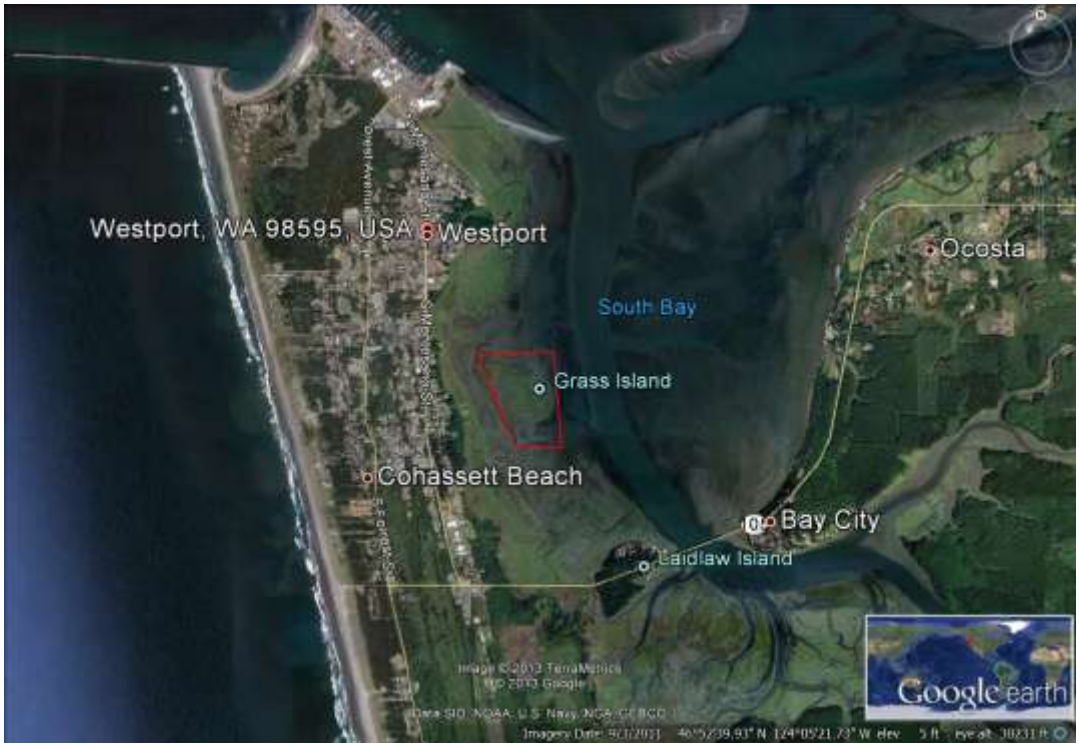
e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:

Perhaps measure plant community present, waterfowl hunting success.

2. Cost Estimate (**Annual Costs**)

		July 1, 2013-June 30, 2014	July 1, 2014-June 30, 2015
CAPITAL BUDGET		$104,000 appraised value	
OPERATING BUDGET			
A/B	Salaries/Benefits		
C	Personal Services		
E	Goods and Services		
G	Travel		
J/K	Equipment		
N	Grants		
Other			
TOTAL COST			

Est. Annual Costs after June 30, 2015: none



Grass Island
3 contiguous Parcels

Original Parcel Lines

Map Location

Grays Harbor County
Geographic Information Systems

400 0 400 Feet

NOTE: This map is for reference only.

1864

Plot date: January 25, 2012 m:\users\ter\projects\gpl.apr

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: January 28, 2013
Contact: Kyle Guzlas

1. **Region: Six**

2. **County: Pacific**

3. **Name of Area: North Nemah / Seal Slough, Willapa Bay**

4. **Region Priority__2___(assigned by Regional Wildlife Program Manager)**

5. **Enhancement/Restoration _____ Acquisition ___X_____(check one or both)**

6. **Location of project site (attach map, aerial photo, and/or diagram):**
   Maps attached – Sites are located on the eastern shoreline of Willapa Bay in Pacific County

7. **Current wetland acreage of project site:**
   100 Acres Total
   - North Nemah - 30 acres of estuarine emergent, palustrine forested, and palustrine emergent wetlands
   - Seal Slough – 70 acres of estuarine emergent and estuarine forested wetlands

8. **Current upland acreage of project site:**
   355 Acres Total
   - Each acquisition area contains approximately 20 acres of riparian buffer on fish bearing streams

9. **If area is not owned by WDFW:**
   a. **Current ownership:**
      Hancock
   b. **Zoning:**
      Industrial Timber

c. USGS Quad reference:

d. Habitat threats:

Development, Grazing, Industrial Logging and Pollution

e. Public access:

Yes

10. Current function (attach additional sheets if necessary)

The 81-acre North Nemah River contains approximately 70 acres of estuarine emergent and estuarine forested wetlands along with 304 acres of uplands which include substantial estuarine buffers on this unique slough habitat. 30 acres of estuarine emergent, palustrine forested, and palustrine emergent wetlands along with 51 acres of associated upland buffers along the North Nemah River and an unnamed stream. This property includes 1,000 ft. of North Nemah River shoreline and 2,300 ft along an unnamed fish bearing stream. The uplands located on this property have been utilized for industrial timber production and the lowlands have been grazed by cattle.

The 374-acre Seal Slough acquisition contains approximately 70 acres of estuarine emergent and estuarine forested wetlands along with 304 acres of uplands which include substantial estuarine buffers on this unique slough habitat. This property includes more than one mile of Willapa Bay frontage.

a. Primary use (breeding, migration, and/or wintering):

b. List species and numbers of waterfowl that use area:

c. List species and numbers of other migratory game bird species that use area:

*****Data derived from Michaelis and Hoenes 2012-2013 fall/mid-winter aerial surveys – numbers are specific to the acquisition project areas unless otherwise noted.**

A. HIGH PRIORITY SPECIES	BREEDING	WINTERING	MIGRATION
1. Tule Greater White-fronted Goose		60	200
2. Dusky Canada Goose		100	300
3. Cackling Canada Goose			1,500
4. Northern Pintail			1,190
5. Mallard		1,500	280
6. Lesser Scaup			60
7. Greater Scaup			60

B. OTHER PRIORITY SPECIES	BREEDING	WINTERING	MIGRATION
1. Pacific Greater White-fronted Goose		60	200
2. Wrangel Island Snow Goose		30	30
3. Pacific Brant (West of Project in Willapa Bay)		2,500	

4. Wood Duck	4		
5. Redhead			X
6. Canvasback			X
7. Ring-necked Duck		200	
8. American Wigeon			4,600 (Nemah, project area) 65,000 (Willapa Bay)

C. OTHER SPECIES	**BREEDING**	**WINTERING**	**MIGRATION**
1. Western Canada Goose (in bay)		1000	5000
2. Aleutian Canada Goose (in bay)		100	1500
3. Taverner's Canada Goose (in bay)		3000	
4. Lesser Canada Goose		200	200
5. Cinnamon Teal			X
6. Green-winged teal		500	1,500
7. White-wing Scoter (in bay)		60	
8. Surf Scoter (in bay)		90	
9. Bufflehead		750	
10. Goldeneye		50	50

d. List species and numbers of other game or diversity species that use area: (note all endangered, threatened, and sensitive species)

Species	**Stage**	**Regional Plan Priority**	**Project Area Status and General Habitat Use**
Northern Harrier	B,M, W	PIF "Focal Species"	Common in emergent wetlands and upland grassland habitats
Sandhill Crane			Common use in floodplain wetlands during migration
Black-bellied Plover	M,W	Shorebird "High Concern"	Area of high importance for migrants and wintering
Whimbrel	M	Shorebird "High Concern",	Extremely common during migration in the floodplain habitats
Long-billed Curlew	M	Shorebird "Low Concern"	Uncommon in tidally exposed mudflats and upland grassland habitats
Marbled Godwit	M	Shorebird	AK population may exclusively move through

		"High Concern"	area
Red Knot	M	Shorebird "High Concern",	Area of high importance to western subspecies
Rock Sandpiper			Does not occur at project sites but in project area
Dunlin	M,W	Shorebird "High Concern",	Common in tidally exposed mudflats, emergent wetlands, and upland grassland habitats. Large concentrations in winter for foraging, major flyway
Short-billed Dowitcher	M,W	Shorebird "High Concern"	Large concentrations in migration
Short-eared Owl	M,W	PIF "Focal Species"	Occasionally seen in project vicinity
Rufous Hummingbird	B,M	PIF "Focal Species"	Common in wetland and riparian shrub and forest habitats in the spring and summer
Olive-sided Flycatcher	B,M	PIF "Focal Species"	Uncommon to Common in riparian forest habitats
Willow Flycatcher	B,M	PIF "Focal Species"	Common in wetland and riparian shrub habitats
Pacific-slope Flycatcher	B,M	PIF "Focal Species"	Common in riparian habitats in the spring and summer
Northern Rough-winged Swallow	B,M		Common over open water and emergent wetland habitats (foraging)
Marsh Wren	B,W		Common in emergent wetland and marsh habitats
Black-throated gray Warbler	B,M	PIF "Focal Species"	Uncommon to Common in riparian forest habitats
Bullock's Oriole	B,M	PIF "Focal Species"	Common in riparian forest habitats

- Merlin – State Candidate
- Common Loon – State Candidate
- Vaux's Swift – State Candidate
- Pileated Woodpecker – State Candidate
- Columbia Torrent Salamander – State Candidate
- Dunn's Salamander – State Candidate
- Van Dyke's Salamander – State Candidate
- Purple Martin – State Candidate
- Western Grebe – State Candidate
- Newcomb's Littorine Snail – State Species of Concern
- River Lamprey – State Species of Concern
- Great Blue Heron – State Monitor
- Peregrine Falcon – Delisted, State Threatened
- Marbled murrelet - Federal and State Threatened

- Western Snowy Plover - Federal and State Threatened (14 nests at Ledbetter Point)
- Bull Trout - Federal Threatened
- Cutthroat Trout - Proposed Threatened
- Willow Flycatcher - Federal Species of Concern
- Streaked Horned Lark - Federal and State Candidate
- Red-legged frog, - Federal candidate

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

This project will help to protect in perpetuity up to 455 acres of high quality, federally-declining coastal estuarine and palustrine forest, scrub-shrub, and emergent wetlands, riparian areas and associated upland mature and old growth conifer forest on Willapa Bay in the southwest corner of Washington. Both of these properties are immediately adjacent to conserved properties owned and managed by WDFW and Forterra.

WDFW will provide cash match of $100,000 to the Columbia Land Trust who is negotiating the $1.75 million dollar acquisition strategy for these target areas. This matching component will ensure that the public maintains permanent hunting access to these properties. The WDFW matching contribution may be utilized by the Columbia Land Trust for either of the acquisitions.

Willapa Bay is the second largest estuary on North America's west coast and is one of the most pristine estuaries in the United States. The unique habitats of Willapa Bay support a large diversity of wildlife and plants. Habitat types include a variety of estuarine wetlands, freshwater wetlands, lakes, old growth and mature conifer forest, sand dunes, sand beaches and grasslands. These habitats are highly interconnected and support large numbers of migratory waterfowl, shorebirds, elk, black bear, fish, highly productive oyster beds, and many other species of wildlife. The project area is home to federally-listed threatened salmon, green sturgeon, marbled murrelet, brown pelican and bald eagle.

<u>Land conservation</u>

- Meet natural resource goals and objectives of management goals and efforts of US Fish & Wildlife Services' Pacific Region Partners for Fish and Wildlife and Coastal Program Strategic Plan, Washington State's Coastal and Estuarine Land Conservation Plan, Washington Coastal Zone Management Program, Washington Shorelines Management Program, and other plans.
- Permanently protect a variety of nationally declining estuarine and freshwater wetlands on the second largest estuary on North America's west coast.
- Permanently protect intact habitat for a large diversity of plants and wildlife, including numerous s waterfowl that depend on the Bay on their travels on the Pacific Flyway.
- Steward natural habitat functions through restoration and enhancement activities to maintain healthy marsh habitat for fish and wildlife (not funded by this grant).

- Build on an over 40,000-acre conservation area around Willapa Bay.

Wildlife

- Meet wildlife goals and objectives of management goals and efforts of the US Fish & Wildlife Service North American Waterfowl Management Plan, Partners in Flight Plan, US Fish & Wildlife Service Endangered Species Program, Washington Department of Fish & Wildlife Priority Habitat Program, and others.
- Protect habitat for Federal and State-listed priority species, including federally listed salmonid species, green sturgeon, marbled murrelet, brown pelican, bald eagle, and peregrine falcon.
- Protect wildlife corridors on Willapa Bay and the Long Beach Peninsula.

Community

- Preserve scenic values along Scenic Byway Highway 101 and from Willapa Bay.
- Allow public recreational and educational use consistent with the conservation goals of the conservation properties, including hiking, hunting, wildlife watching, kayaking, photography, etc.
- Protect areas of cultural and historical significance to the Chinook Nation (5 Native American tribes).
- Provide an opportunity for natural and cultural history education/interpretation on the site.

b. Description of required maintenance and schedule:
This proposal is for acquisition.

c. Description of current water supply and water rights if applicable:
NA

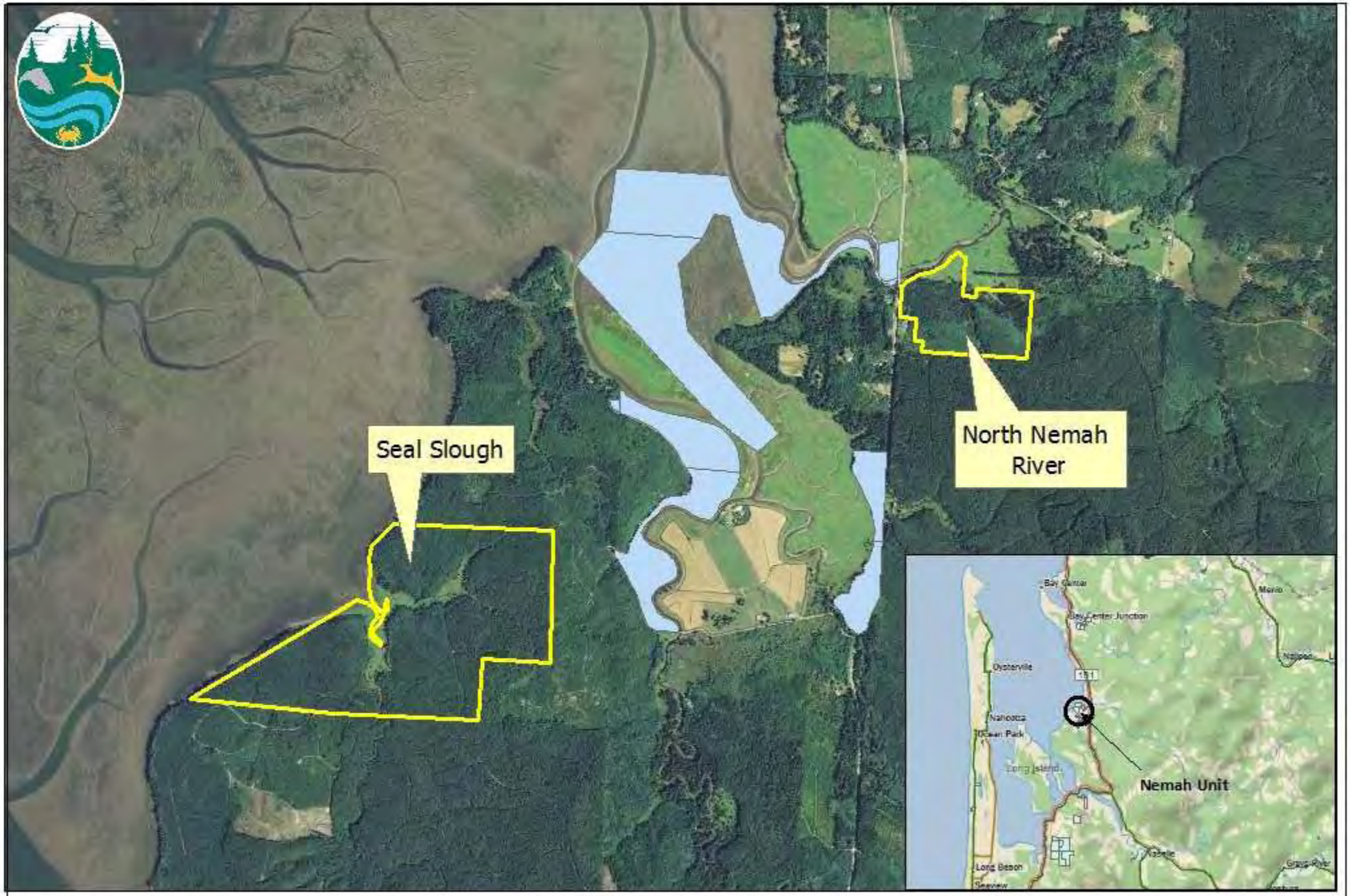
d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat	50	
*Pair, resting water		
*Nesting cover	10	
*Winter food resources	50	
*Hunting area	455	

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:
Willapa Bay mid-winter aerial surveys are expected to be continued by WDFW.

2. Cost Estimate (<u>Annual Costs</u>)

		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET		**$100,000**	
OPERATING BUDGET			
A/B	Salaries/Benefits		
C	Personal Services		
E	Goods and Services		
G	Travel		
J/K	Equipment		
N	Grants		
Other			
TOTAL COST		**$100,000**	
Est. Annual Costs after June 30, 2015:			



Legend

- WDFW - Nemah Unit
- CLT Acquisition Targets - North Nemah & Seal Slough

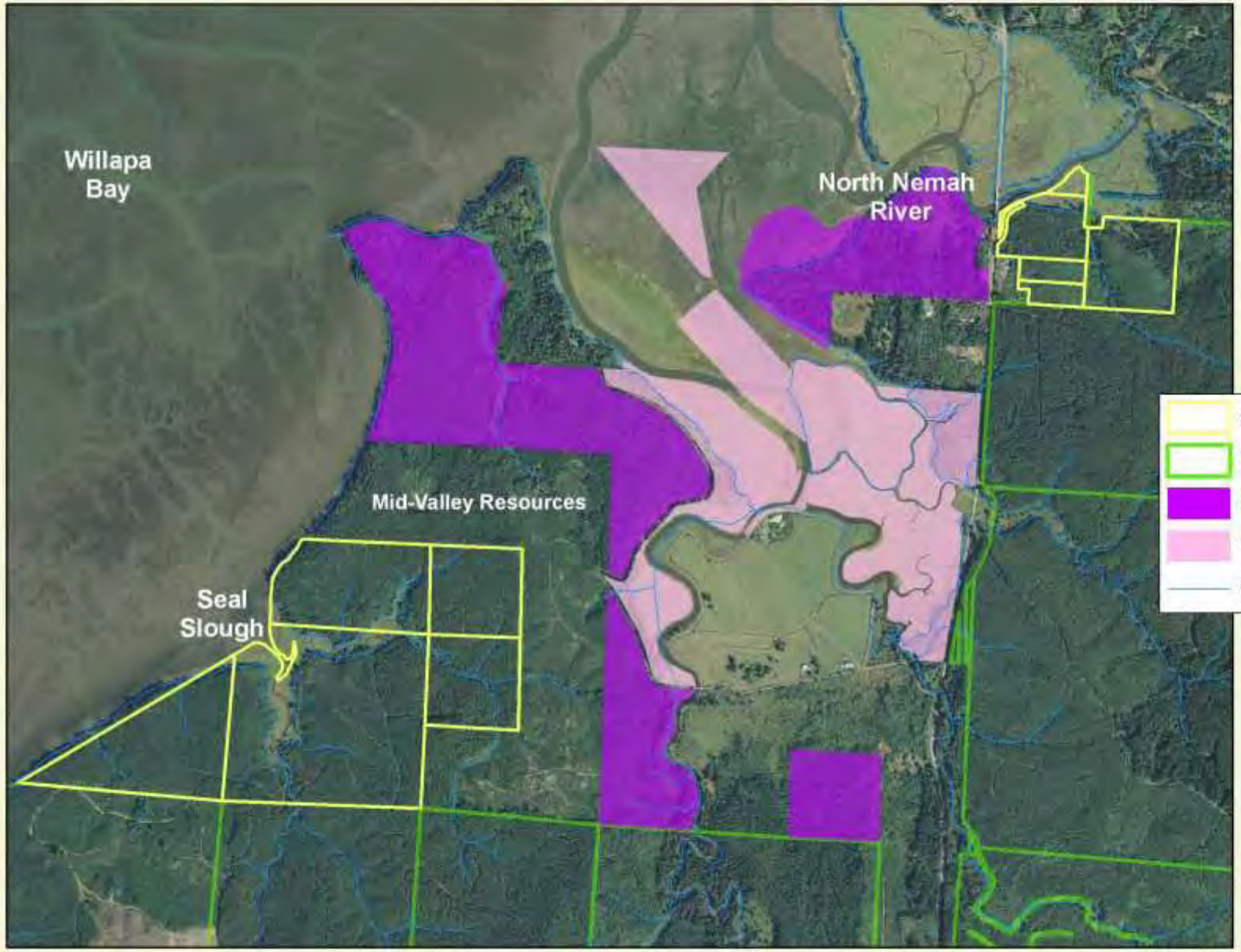
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

0 0.5 1 Miles

N

East Willapa Bay

Pacific County, Washington



Conservation Opportunities
Hancock
Cascade Land Conservancy
WDFW
Rivers & Streams

N

0 0.2 0.4
Miles

This map is not a survey and must not be construed as one. This product is for informational purposes and may not have been prepared for, or be suitable for legal, engineering, or surveying purposes. Users of this information should review or consult the primary data and information sources to ascertain the usability of the information.

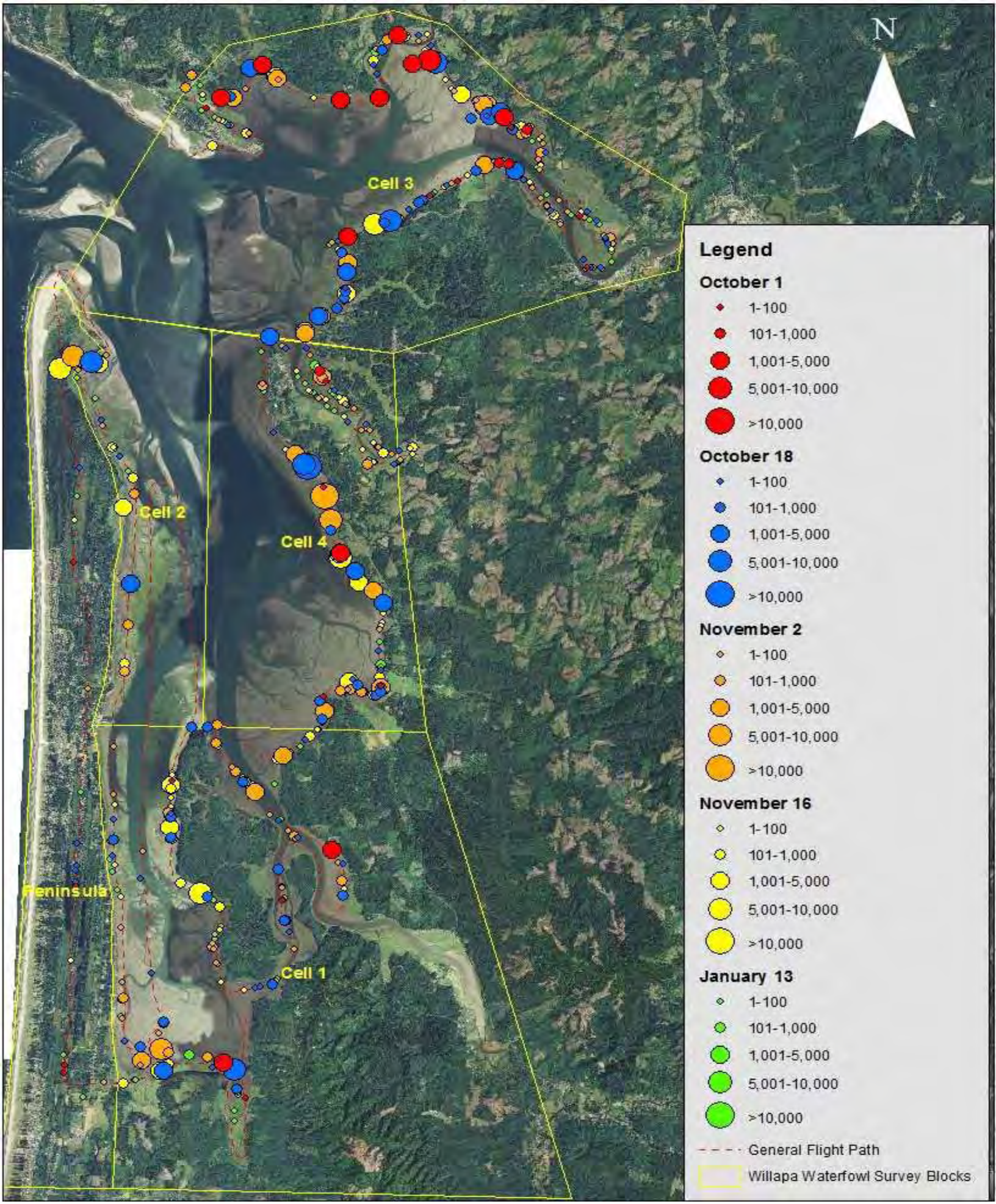


Figure 1 – Willapa Bay Dabbler Surveys October – January (2012-2013)

NEMAH UNIT - 250 acres

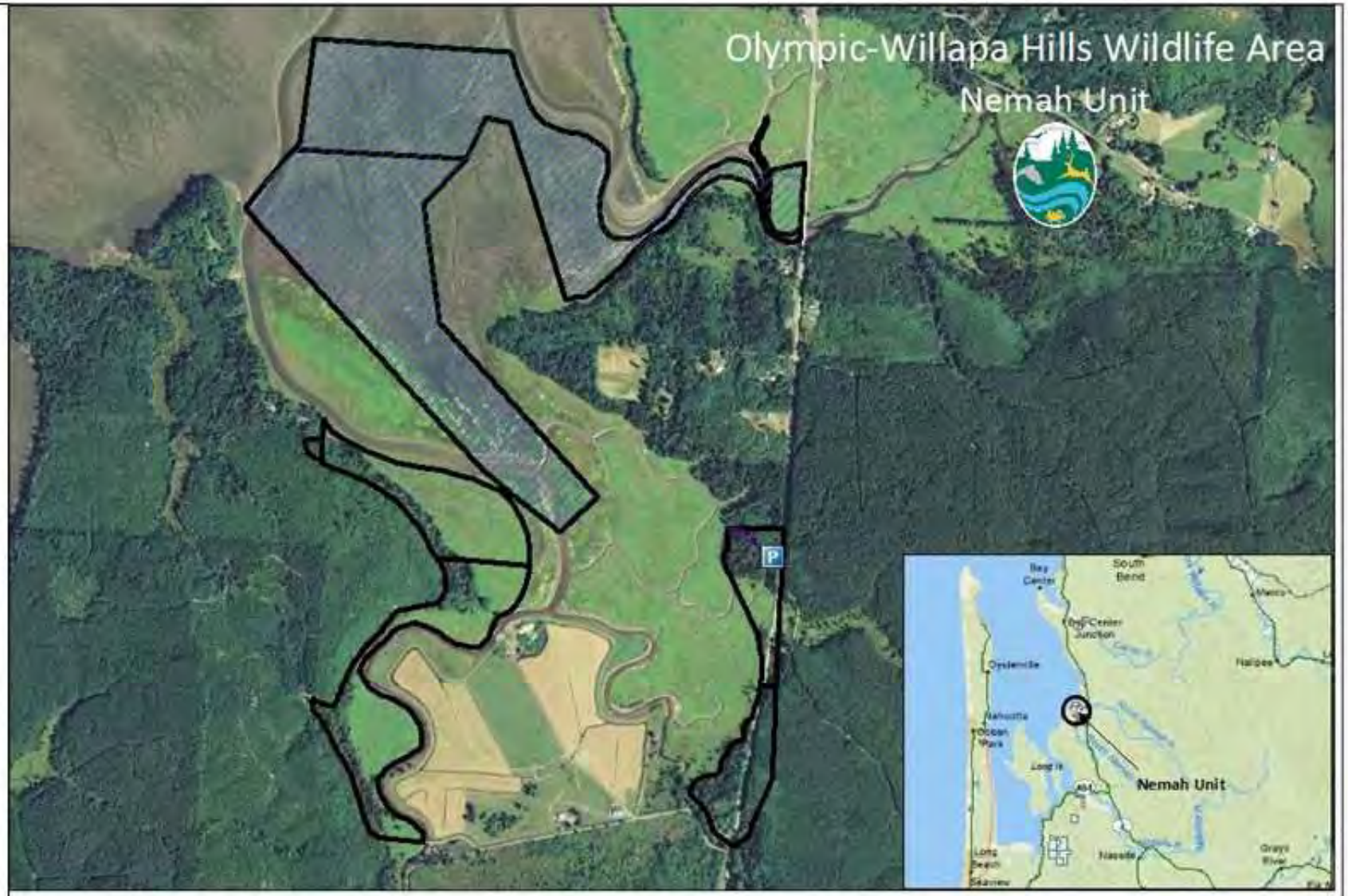
The 217-acre Nemah River-Estuary unit is located 15.5 miles southwest of South Bend in Pacific County. This property contains important tidelands, estuary wetlands and salt marsh habitat that benefit salmon, migratory waterfowl and birds of prey. There is a small parking area in front of a WDFW owned gate. Beyond the gate a small trail leads through a mature spruce bottom forest to the salt marsh of Willapa Bay. Several sloughs can be hunted if the right conditions area present. This site is also often utilized for elk hunting in the Nemah watershed.

Scouting Report

Dabbling Ducks:
Moderate to high numbers of mallards, wigeon, pintail and green-winged teal

Diving Ducks:
Low to moderate numbers of bufflehead, scoters, scaup, and goldeneye

Geese:
Low to moderate numbers of Canada geese.



2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: **January 18, 2013**
Contact: **Sara Gregory/Rich Finger**

1. Region: **2**

2. County: **Grant**

3. Name of Area: **Artesian and Black Lake**

4. Region Priority_____(assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration **__X (Design process only)_** Acquisition _____(check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram):
   Artesian and Black Lake
   T20N, R29E, Section 4
   T20N, R29E, NW ¼ Section 3
   (see attachment A)
   Proposed Pipeline
   T20N, R29E, NW ¼ Section 9
   T20N, R29E, SE ¼ Section 8
   T20N, R29E, NE ¼ Section 17
   (see attachment A)

7. Current wetland acreage of project site:
   Artesian Lake: Estimated to be 30 acres
   Black Lake: Estimated to be 140 acres
   Proposed Pipeline: Estimated to be 0 acres

8. Current upland acreage of project site:
   Artesian Lake: Estimated to be 0 acres
   Black Lake: Estimated to be 0 acres
   Proposed Pipeline: Estimated to be 15 acres

9. If area is not owned by WDFW:
   a. Current ownership: **Bureau of Reclamation**

   b. Zoning: **Open space recreation**

   c. USGS Quad reference: **Wilson Creek SW and Wheeler**

d. Habitat threats: **Limited ground water supplies as a result of irrigation practices in the surrounding area.**

e. Public access: **The entire project area is located on Bureau of Reclamation lands where public hunting and fishing is allowed during permitted seasons. Other outdoor recreational uses are permitted year-round.**

10. Current function (attach additional sheets if necessary)

a. Primary use (breeding, migration, and/or wintering):

Currently, Artesian and Black Lakes are dry or contain minimal amounts of water throughout most of the year (≥ 10 months). Consequently, the current function of Artesian and Black Lakes as waterfowl habitat is minimal. In rare years when the project area contains water during February and March (these events do not occur annually), the site is used by waterfowl species as staging habitat.

b. List species and numbers of waterfowl that use area:

Species	Fall/winter	Spring migration	Breeding
Mallard	**None**	**Up to 2,000**	**None**
Canada Geese	**None**	**100–300**	**None**
N. Pintails	**None**	**< 500**	**None**
Others dabblers	**None**	**< 500**	**None**
Divers	**None**	**< 100**	**None**
Sandhill Cranes	**None**	**< 100**	**None**

c. List species and numbers of other migratory game bird species that use area:

The project area may provide limited foraging and nesting habitat for mourning doves.

d. List species and numbers of other game or diversity species that use area:
(note all endangered, threatened, and sensitive species)

Washington ground squirrels are located in upland habitats surrounding Artesian and Black Lakes. Numerous colonies have also been located in the immediate vicinity of the proposed pipeline.

Other species of wildlife common to project areas include:

Mule deer	**Coyote**	**Cottontail**
Gyrfalcon	**Kestrel**	**Horned Lark**
Meadowlark	**N. Shrike**	**N. Harrier**
Pheasant	**Starling**	**Long-billed Curlew**
Y-h Blackbird	**R-w Blackbird**	**W. Kingbird**
E. Kingbird		

Sage Sparrow (SC)
Sage Thrasher (SC)
Badger (SM)
Loggerhead shrike (FCo, SC)
Prairie Falcon (SM)
Swainson's Hawk (SM)
Washington ground squirrel (FC, SC)

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

****Please note: this proposal is for funding of the preliminary process required prior to project implementation.**

Artesian and Black Lakes are currently dry throughout most of the year. WDFW is proposing the construction of a pipeline that will feed water from East Low Canal (ELC) to both lakes (see attachment A). The distance between ELC and the southern end of Artesian Lake is approximately 1.7 miles following a natural drainage. The exact distance of the pipeline would be contingent upon a topographical survey and its recommendation for the pipeline's location. WDFW is proposing a minimum of an 18" pipe be used to construct the pipeline. Approximately 7 cfs, or 13.9 acre feet per day, would be delivered which would adequately supply water to Artesian and Black Lakes. At this rate, if no water was lost to percolation or evapo-transpiration, the lakes could be filled in about 35 days. The pipeline would run from ELC to the southern end of Artesian Lake. Water entering Artesian Lake would flow into Black Lake through a ditch that will be constructed between them.

b. Description of required maintenance and schedule:

None. This proposal only pertains to funding the preliminary aspects of the project.

c. Description of current water supply and water rights if applicable:

Currently, the only water supply for Artesian and Black Lakes is groundwater that is currently used for irrigation in the Odessa Ground Water Management Subarea. The aquifer has declined to such an extent that Artesian and Blake Lakes have remained dry for several years. A pipeline would be constructed to deliver Columbia Basin Project water from the ELC to Artesian and Black Lakes. WDFW would enter into a water contract agreement with the ECBID to deliver the water throughout the irrigation season.

d. Benefits to migratory game birds and recreation (quantify benefits below):

If a reliable water source was established, approximately 150 acres (450 acre-feet) of new wetlands would be created. With maintained water levels, this system would potentially provide additional breeding and wintering habitat for a variety of migratory game birds. The creation of a new wetland system would also increase recreational opportunities for both waterfowl hunters and bird watchers.

The northern leopard frog is a state endangered species and a federal species of concern. Breeding habitat for this species is a key limiting factor associated with its decline. Northern leopard frogs breed from mid-March to mid-May and require areas that provide constant water levels between 1 and 2 ft. deep. The establishment of a year-round regulated water source would allow WDFW to provide potential habitat for northern leopard frogs that is currently fish and bullfrog free.

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:

Active Washington ground squirrel colonies are known to exist in the immediate vicinity of the proposed pipeline. The Washington ground squirrel became a state candidate species in Washington in the early 1990s and is listed as state endangered in Oregon. WDFW will

conduct baseline surveys in accordance with the State Environmental Policy Act (SEPA) to identify and evaluate probable environmental impacts, and develop measures to reduce adverse impacts to this species.

In accordance with Section 106 of the National Historic Preservation Act, any activities planned on lands administered by the Bureau of Reclamation must consider the direct and indirect effect on cultural resources. This is likely to require an archeological survey prior to project initiation. The Bureau of Reclamation will contribute a cultural resources report in a cost share arrangement.

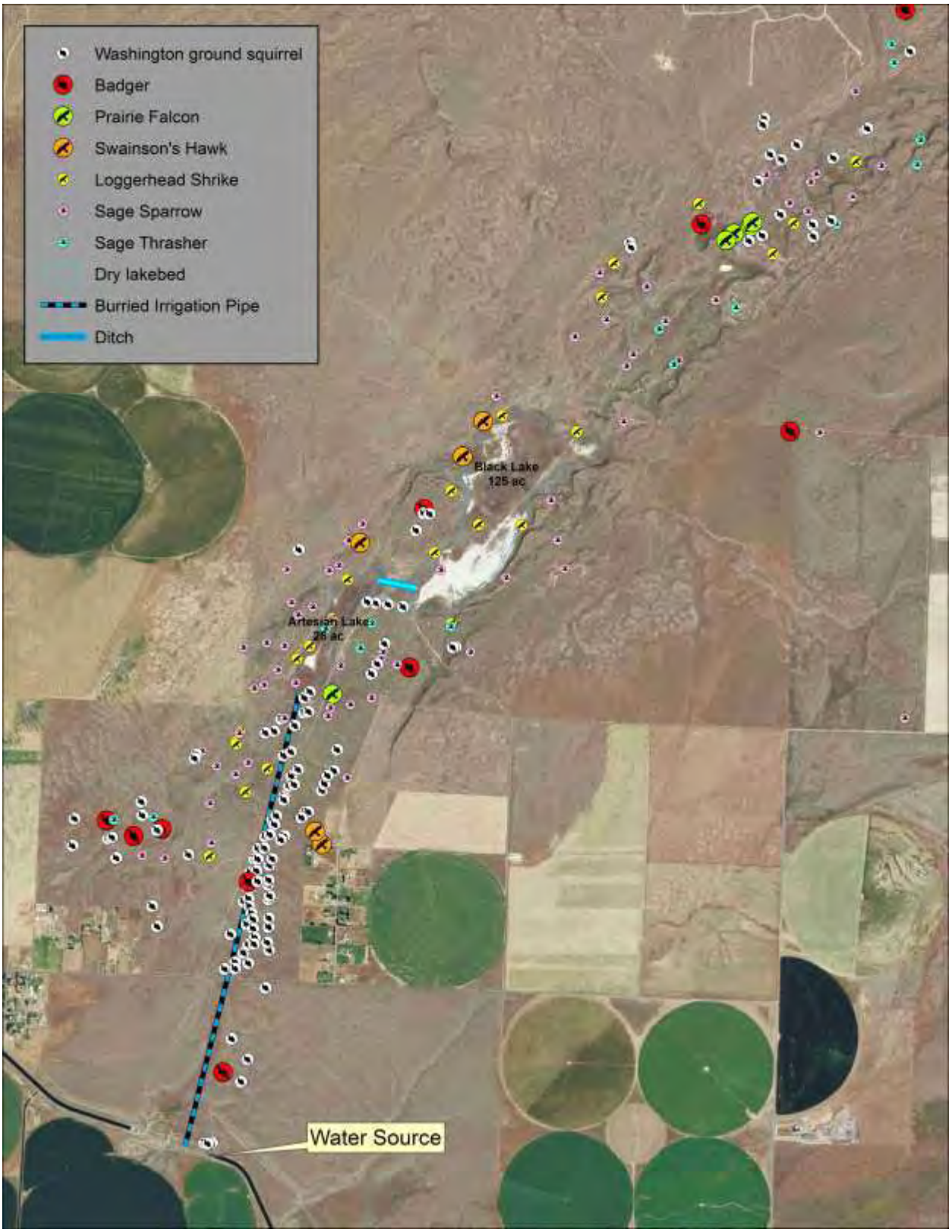
Upon completion of this project, WDFW would monitor and quantify benefits with general surveys to identify use by migratory bird species, northern leopard frogs, and other wildlife.

2. Cost Estimate[1] (**Annual Costs**)

		July 1, 2013-June 30, 2014
CAPITAL BUDGET		
OPERATING BUDGET		
A/B	Salaries/Benefits	$0
C	Personal Services	$0
E	Goods and Services	$46,198.17[2]
G	Travel	$0
J/K	Equipment	$0
N	Grants/Cost share	$5,000[3]
Other		$14,402.00[4]
TOTAL COST		TOTAL: $65,600.17 COST SHARE: $-5,000 **DSP REQUEST: $60,600.17**

[1]Please note: WDFW staff members in several offices and wildlife areas have been collaborating with Ducks Unlimited (DU) for over a year to write a standard NAWCA grant proposal for the Mid-Columbia area, planned for submission in either 2013 or 2014. That NAWCA proposal will benefit many WDFW properties and other public and private lands in the Mid-Columbia focus area. Additional match is still needed to make that proposal viable. The implementation phase of this project can potentially be funded by that NAWCA grant as well (amount that can be funded TBD once this design phase results in cost estimates). If so, these Migratory Bird Stamp funds, if granted, and any DU and WDFW match towards this project can be combined and used as match in the Mid-Columbia Focus Area Phase 1 NAWCA standard grant proposal. Doing so thereby leverages Migratory Bird Stamp and NAWCA funds, and WDFW and DU match, even further.
[2]See Attachment B for a detailed cost estimate from DU.
[3]Estimated costs associated with preparation of cultural resources review provided by the Bureau of Reclamation.
[4]Estimated costs associated with SEPA environmental review (can also be used as NAWCA match).

Attachment A: Map depicting the proposed pipeline that would supply water from East Low Canal to Artesian and Black Lakes and species of concern that occur in the area.



Attachment B: Cost estimate from Ducks Unlimited.

Artesian Lake/Black Lake WDFW Migratory Bird Stamp Proposal January 2013

DU cost estimate for the "design-only" phase, of the potential wetland restoration project at Artesian Lake and Black Lake in Grant County, Washington.

ONLY the tasks to be performed by DU, as per discussions with Sara Gregory and Rich Finger, WDFW, have cost estimates in the table below. Task descriptions follow the table. Task items in the table that have no costs are not in the scope of this "design phase" and grant proposal, or are not being performed by DU, but are tasks that DU can perform if WDFW chooses.

Tasks	Subtotal	Indirect	Total
1. PRELIMINARY MEETING/PROJECT MNG	$5,286.00	$456.18	$5,742.18
2. FIELD WORK/SURVEY	$21,118.00	$1,822.48	$22,940.48
3. CONCEPTUAL PLANNING	$0.00	$0.00	$0.00
4. DESIGN	$16,124.00	$1,391.50	$17,515.50
5. PERMITTING	$0.00	$0.00	$0.00
6. BIDDING CONTRACTING	$0.00	$0.00	$0.00
7. CM-EARTHWORK	$0.00	$0.00	$0.00
8. CM-REVEGETATION	$0.00	$0.00	$0.00
PROJECT TOTAL	$42,528.00	$3,670.17	**$46,198.17**

DU indirect rate for 2014 will be 8.63% and is applied to DU hours, travel, and contracts.

Task 1: DU time and travel and indirects for one preliminary planning meeting on-site for regional engineer, and 2 biologists, plus office time for project management and administration between DU and WDFW. (Includes travel costs for 1 trip to the site.)

Task 2: Field Work/Survey task: DU time and travel and indirects for regional engineer, assistant engineer, biologists and surveyor at the site to perform topographic survey of the area for the proposed pipeline route, the lakes and the connection between the lakes, and the biologists to perform vegetation and other site assessments. Office work to prepare topo and other site assessments included. Supplies and equipment include rental of a backhoe for soil test pits in the dry lakes and along the proposed pipeline route, soil testing, and copies of topo maps. (Includes travel costs for 1 round trip of 3 days for engineer/assistant engineer, 5 days for surveyor, and 1 day for biologist(s).)

Task 3: Conceptual planning is not within the scope of this project. This refers to producing multiple alternative design plans.

Task 4: Design task: Time and indirects for the DU team of engineers, biologists, surveyor and CAD designer to produce plan sets for the design of the project, under the advisement of WDFW and BoR and the County where applicable. Design set will be to "bid ready" specifications. No travel to the site is included in this task.

Task 5: Permitting: Not within the scope of this cost estimate. WDFW and BoR will be performing permitting tasks, and therefore no DU time or travel is required.

Task 6: Bidding/Contracting (i.e. for Earthwork, Vegetation Control, Revegetation, Cultural). Not within the scope of this cost estimate. This work will be in a future, implementation phase, of this project, and DU can provide these services at that time if WDFW chooses. This task refers to taking potential contractors to the site for a pre-bid meeting if necessary, preparing pre-bid documents, helping to select a contractor, and generating an agreement between DU and the contractor. May be done several times for different types of contracts, if desired, for example the earthwork contract, vegetation contract (i.e. shrub plantings), an archaeologist contract if a cultural resources monitor is required to be on-site during construction, etc.

Task 7: Construction management: not within the scope of this cost estimate. This work will be in a future, implementation phase, of this project, and DU can provide these services at that time if WDFW chooses. This work entails staking the site before the earthwork contractor begins, managing the earthwork contractor at the site, inspecting work, ensuring that the contractor follows permit regulations (stormwater, Nationwide, etc).
Construction management for other contracts (vegetation re-establishment, etc) are also not within the scope of this cost estimate. DU can provide these services at a future time if WDFW includes vegetation work within the scope of the project. This work includes staking the site before the contractor begins, managing the contractor at the site, inspecting work, etc.

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: 1/8/2013
Contact: Graham Peters, Biologist
Ducks Unlimited, Inc.
17800 SE Mill Plain Blvd. Ste. 120
Vancouver, WA 98683
360-885-2011 ext 12
gpeters@ducks.org

1. Region: 4

2. County: Snohomish

3. Name of Area: Leque Island Unit - Skagit Wildlife Area

4. Region Priority_____(assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration _____X_____ Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram):

   Map attached. The project site is located on the Leque Unit of the Skagit Wildlife Area just west of Stanwood, WA. T32N, R3E, Sections 23, 25, and 26.

7. Current wetland acreage of project site:

   There are 43 acres of the Leque Unit north of SR 532 that have been partially breached. As a result they are subject to a muted tidal regime and would classify as estuarine intertidal vegetated wetlands. The alternative analysis will investigate restoring full tidal inundation and restoring the historic blind channel drainage network. The portion of the Leque Unit south of SR 532 is 251 acres and is diked and drained estuary. This area is currently prior converted croplands or farmed wetlands depending on the duration of seasonal inundation; partially due to a drainage system (i.e. ditches and tide gates) that is in need of maintenance and the hydric soils coupled with a high water table. DU has previously conducted geotechnical investigations that determined portions of the site are suitable for freshwater wetland enhancement via construction of a setback levee and installation of water control structures. The majority of the southern portion of Leque is considered farmed wetlands and the levees represent the only upland areas.

8. Current upland acreage of project site:

   The perimeter levees represent the only upland areas on the site.

9. If area is not owned by WDFW: N/A

a. Current ownership:

b. Zoning:

c. USGS Quad reference:

d. Habitat threats:

e. Public access:

10. Current function (attach additional sheets if necessary)

a. Primary use (breeding, migration, and/or wintering):

The primary use of the wildlife area is migration and wintering habitat for a variety of waterfowl, shorebirds, waterbirds, and other avian species. Adequate food supply is assumed to be a primary limiting factor for wintering waterfowl, therefore a principle function of winter habitat for waterfowl is to provide food to meet daily energy demands and fuel important life history events. Currently, 130 acres of the wildlife area is managed as cropland to provide winter forage and control weeds. In recent years, efforts to provide cereal grain enhancement or cover crops have been challenging. Changes in the crop market and finding local farmers that are willing to risk crop investments on site with compromised dike system have been limited. It has been shown that dabbling ducks can deplete food resources in intertidal habitats by late November-December in the absence of agriculture that supplements energetic demands. Mallard, pintail, and wigeon make up over 90% of dabbling ducks in the Northern Puget Lowlands (NPL) and while they meet some of their energetic requirements from intertidal and freshwater habitats, most of their food is likely acquired from agricultural lands. However, the Pacific Coast Joint Venture (PCJV) estimates a surplus of food in the NPL for waterfowl at North American Waterfowl Management Plan population objectives (PCJV 2012). Upon completion of the proposed restoration project some portion, to be determined by the alternatives analysis, of the wildlife area will once again be tidally influenced high salt marsh that occurred historically. Leque Island also provides migration and wintering habitat for an abundance of shorebirds, waterbirds, and raptors, which will benefit greatly from any restoration to salt marsh from crops and fallow land that currently exists.

The PCJV has established three primary conservation goals for the NPL; 1) preservation of agricultural landscapes, 2) protecting and restoring a wetland complex that reflects the historic distribution of wetland classes, and 3) increased resiliency of NPL coastal habitats to sea level rise. Research suggests there is currently a surplus of food in the NPL associated with agriculture that meets energetic demands of most waterfowl populations, Snohomish and Skagit County both have agricultural protection provisions in place that favor the maintenance of a large agricultural land base, and Leque Island has been identified by Snohomish County's Sustainable Lands Strategy as an ideal candidate for tidal restoration due to its contribution towards meeting regional salmon recovery goals. Therefore, it seems logical to assume the PCJV's goals would be best met by restoring Leque Island to historic conditions. Estuarine emergent wetlands (salt and brackish marsh) have declined in the NPL by 63% since settlement (PCJV 2012). Consequently, the PCJV has a specific goal of restoring 1225 acres of estuarine intertidal emergent wetlands in Snohomish County and Leque could contribute up to 24% of that goal. Moreover, removing dikes on Leque would reduce maintenance concerns and increase the resiliency of coastal habitats in the face of sea level rise. It is acknowledged by project proponents that Leque is an important area for consumptive and non-consumptive recreation. The proposed alternatives analysis will take that into account and identify a restoration strategy that meets multiple and balanced objectives among user groups and species. Approximately 198 acres of Leque was purchased by WDFW and used as match for a North American Wetlands Conservation Act (NAWCA) proposal in the early 1990's. Ducks Unlimited is currently working with the PCJV coordinator to discuss tidal restoration options with NAWCA that will not

require any returning of funds or replacing upland habitat.

b. List species and numbers of waterfowl that use area:

Port Susan and Skagit bays, along with their associated freshwater wetland habitats provide some of the most important wintering waterfowl habitat in the Pacific Flyway. Over 500,000 dabbling ducks rely on northern Puget Sound in mid-winter and a significant portion of the Pacific Flyway's 5.7 million dabbling ducks use the region during migration. Over 80% of north Puget Sound's wintering dabbling ducks occur in Skagit and Snohomish Counties. Mallard, American wigeon, northern pintail, green-winged teal, gadwall, and northern shoveler are the most common dabbling ducks respectively. Mallard, northern pintail and wigeon have been designated as birds of management concern by the USFWS and are priority species of the Pacific Coast Joint Venture. Other waterfowl include; lesser snow geese, tundra and trumpeter swans, Canada geese, bufflehead, ring-necked duck, and greater and lesser scaup. There is currently no waterfowl counts for the Leque Island Unit specifically. However, between October through January from 2004 to 2012, aerial surveys have estimated an average of 54,170 mallard, northern pintail, American wigeon, and green-winged teal in Port Susan and Skagit Bays alone. In December of 2006 waterfowl survey estimates peaked at 229,570 dabblers in Skagit and Port Susan Bay.

c. List species and numbers of other migratory game bird species that use area:

An unknown number of mourning doves and Wilson's snipe use the wildlife area. Mourning dove use would likely decrease following tidal restoration, while Wilson's snipe use would increase or stay the same.

d. List species and numbers of other game or diversity species that use area:
(note all endangered, threatened, and sensitive species)

Approximately 190 species of birds can be found throughout the Skagit Wildlife Area, which is one of the most diverse avian assemblages in temperate North America. Hundreds of thousands of shorebirds use the wildlife area annually. This large prey base attracts a variety of raptors and owls including; bald eagles, peregrine falcons (federal species of concern), northern harriers, red-tailed hawks, and rough-legged hawks and an occasional golden eagle (state candidate), gyrfalcon, snowy owl, and merlin (state candidate). Restoring historic salt marsh will benefit non-game avian species, especially considering the level of salt marsh lost in the Puget Sound. Brown pelicans, western and Clark's grebes, common loon, and peregrine falcon are all threatened, endangered, or avian state species of concern that will benefit from tidal restoration. Additionally, estuarine restoration will benefit threatened and endangered fish including; Puget Sound Chinook, steelhead, and bull trout.

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

Ducks Unlimited, Inc. (DU) and the Washington Department of Fish and Wildlife (WDFW) are dedicated to a collaborative process towards restoration of estuarine wetlands on Leque Island. To that end, there is an immediate need to disseminate results of the groundwater study, conduct an alternatives analysis of tidal restoration options that engages stakeholders and the public, and ultimately select a preferred alternative that can be fully designed, permitted and implemented by 2016. As a result of recent and planned infrastructure upgrades to SR 532 and conservation milestones (i.e. land acquisition, building demolition, and a pending groundwater study examining effects to the Camano Island aquifer as a result of tidal restoration of Leque Island) an incredible opportunity may exist to expand the scope of the original restoration project to include all diked lands owned by WDFW within the Leque Unit, on both sides of SR 532, which totals 294 acres of historic estuary. WDFW supports full restoration as long as it is selected as the preferred alternative after a thorough public process. In addition, WDFW requires the results of the ground water study to clearly show full tidal restoration will not negatively affect the Camano aquifer. A collaborative groundwater study will be completed in December 2012 that investigated potential impacts from estuarine restoration of Leque Island to Camano Island's sole source aquifer, and preliminary results indicate no adverse impact due to intrusion or contamination from tidal restoration.

These actions have increased the physical and social feasibility of a complete tidal restoration scenario for Leque Island on the north and south sides of SR 532 and we wish to conduct an alternatives analysis that leads to a publically supported preferred alternative. Since 2004, WDFW and DU have continued to advance this project with significant progress. While opposition has been encountered along the way, the partnership has been motivated by the end goal of restoring estuarine processes on a large scale for the benefit of a multitude of fish and wildlife species, and the health of the Puget Sound in general. DU is therefore pleased to submit this proposal requesting funding for the following tasks (in chronological order): initiation of WDFW restoration pathway, alternatives analysis (including hydrodynamic modeling that will aid in the evaluation of the alternatives), stakeholder collaboration, public outreach, and 60% engineered-design. The restoration pathway process involves prioritization of restoration activities on WDFW lands by outside entities, collaboratively addresses project challenges and constraints necessary to complete implementation, and addresses stakeholder and public outreach. WDFW has recently hired a Region 4 Restoration Coordinator who will begin assembling a broad voluntary stakeholder group (i.e. regional conservation entities, regulators, local government) this winter, 2012-13. The Restoration Coordinator will also begin soliciting public input to inform design of alternatives. Immediately following initial steps of the restoration pathway, we will conduct an alternatives analysis that will include 3-5 alternatives that range from the conservative previous setback levee design (115 acres of estuarine restoration) to full tidal restoration (294 acres). Each alternative will be developed to a conceptual design. Then, following a thorough stakeholder and public outreach process, the preferred alternative will be selected and further developed to the 60% level. This design phase will build upon previous efforts and will experience considerable savings from existing geotechnical investigations, topographic survey, and baseline conditions and model inputs by Battelle. We intend to submit a proposal to the Salmon Recovery Funding Board (SRFB) in June of 2014 for final design, permitting, and construction. We expect to commence construction by summer 2016.

DU was awarded SRFB and WA Migratory Bird Stamp funds in 2004 to design and construct a levee setback project on the Leque unit that would have restored 115 acres of estuary and enhanced 72 acres of freshwater wetlands. Following multiple natural levee failures that resulted in minor design changes, the project progressed to 90% design and permit procurement. Ultimately, the project was scheduled to be constructed in 2010 but was appealed due to saltwater intrusion concerns to Camano Island's sole source aquifer. Hence, DU and partners are completing a groundwater study to investigate those claims.

This project is cost efficient because many design components have been partially completed (i.e. survey, hydrodynamic modeling, geotechnical investigations), which has inherent cost savings, as well as retaining the core project proponents, broadening the partnership base by establishing a voluntary design review team, and coordinating planning concurrently with the Matterand project sponsored by the Stillaguamish Tribe. While this proposal is taking a step back by conducting an alternatives analysis to potentially expand the scope of tidal restoration and address public outreach, this phase will build upon previous efforts equating to significant cost savings. For example, the last setback levee design may become an alternative, the hydrodynamic model used by Battelle has been populated and validated, geotechnical investigations have evaluated setback levees and construction considerations, and WDFW is planning to invest significant resources on public outreach prior to ESRP funding (in-kind non-match). The following section will describe proposed project elements and associated cost justification:

1) Preliminary Public Outreach - The newly hired Region 4 Restoration Coordinator will begin working with project stakeholders and the public this winter, 2012-13, prior to a potential ESRP funding award. He will begin to educate the public, explain that the project is moving forward and convey that the public will have opportunity to evaluate design alternatives. Public input received will be incorporated into formation of design alternatives.
2) Alternative Analysis - DU, in close coordination with the Restoration Coordinator, Wildlife Area Manager, and Region 4 management staff, will conduct an alternatives analysis of 3 to 5 alternative designs. We will complete conceptual designs for each alternative and perform preliminary hydrodynamic modeling. DU, in collaboration with Battelle, has previously developed a 3-D hydrodynamic model for the Leque Island restoration site (Yang et al 2008). The tool uses finite volume coastal ocean model (FVCOM) framework from the University of Massachusetts (Chen et al 2003) which has been successfully applied to numerous nearshore restoration sites in Puget Sound (Khangaonkar and Yang 2011). During the feasibility assessment phase, the model was used to simulate tidal inundation, tidal currents, and salinity intrusion in the study area for the existing condition as well as for the early restoration alternative concepts proposed in 2008 to evaluate relative changes in hydrodynamics and circulation at the site. Those results were encouraging as they showed that the tidal function could be successfully restored in the

Leque Island project site. Although bed elevations of the restoration site were relatively high, 4 to 7 hours of tidal inundation could be expected with salinities mostly in the brackish range. Model results also indicated that the bottom shear stress distributions in the restoration site were smaller than 0.1 Pa during most of the tidal cycle which would indicate a depositional environment. Cost savings will be realized because the extensive effort typically associated with a 3-D model setup and validation steps has already been completed. The model is ready for application and assessment of the final (3-4) alternatives. Additionally, geotechnical investigations were completed for the previous set-back levee design, which will reduce geotechnical costs of the preferred alternative, once selected.

3) Restoration Pathway Initiation - WDFW will assign an internal design review team (DRT) following a potential funding award in 2013. This process will allow the DRT to assess ecological benefits, future land use, contractual constraints, maintenance requirements, potential liabilities, and staff capacity associated with design alternatives. Considerable cost savings will be achieved in this phase as WDFW has committed $35k in in-kind staff time along with $15k from DU.

4) Stakeholder and Public Outreach - We expect to formulate a voluntary design review committee consisting of local biologists, engineers, and interested parties to evaluate design alternatives and details associated with the preferred alternative. We anticipate holding quarterly design review meetings throughout the alternative analysis. We plan to begin in spring 2013 and continuing through winter/spring 2014. Therefore, we expect 3-4 quarterly review meetings which would entail approximately half a day of review for each meeting, half to a full day to attend each meeting, and half a day for follow up. So, anticipating 3 meetings that would equate to between 4.5 and 6 days of time for each person involved, potentially providing considerable cost savings and engaging a broad constituency. WDFW and DU will hold at least 2 public outreach meetings to present design alternatives and solicit feedback from local landowners, residents, and interested parties.

5) 60% Design – Once the preferred alternative has been identified, DU will complete 60% design drawings. Considerable cost savings will be accrued through previous work and familiarity of the site. DU has already conducted a complete total station topographic survey of the site, and the geotechnical investigations previously conducted will reduce data needs for the final design. Additionally, DU's experience with dike removal and estuarine restoration projects will aid in the efficient development of an effective and constructible restoration plan.

6) Hydrodynamic modeling of the 60% Design Preferred Alternative - If required, Battelle will conduct a detailed simulation of the preferred alternative selected by the project team after reviewing the results of previous alternatives. This effort will likely include adjustments and inclusion of details previously not considered. This may require refinement of the model grids and inclusion of structural components such as tide gates or weirs. Model results such as inundation frequency, salinity, and velocities in the study area including the restored site will be generated consistent with previous results for comparison.

7) Final Design and Permitting - Final design and permitting funds will be pursued from SRFB. Depending on the timeframe of implementation, some permits may be modified such as section 7 and 305, and County grading, shoreline, flood hazard, and critical areas, presenting significant cost savings.

b. Description of required maintenance and schedule:

Maintenance will be determined following the selection of the preferred restoration alternative. Tidal restoration will result in the least amount of maintenance as the site will be dependent on natural processes and functions. If a freshwater wetland enhancement is selected as a component to this project there will be long term maintenance responsibilities by WDFW to maintain the required setback levee. In addition, water control structures will need to be managed along with periodic disturbance to set back succession such as farming or disking. This is similar to maintenance activities conducted at other Skagit Wildlife Area units.

c. Description of current water supply and water rights if applicable:

There is currently no water supply for farmed wetland habitat. If managed freshwater wetlands are a component of the preferred alternative then the wetlands will rely on precipitation to inundate wetlands as there is no surface freshwater supply on Leque Island.

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat	Up to 294 acres of estuarine habitat could become available as brood rearing habitat. Currently only seasonal winter inundation occurs on the site. If tidal restoration occurs Leque could serve as brood habitat for nearby upland nesting ducks and geese.	The same potential acreage would be available for other migratory game birds.
*Pair, resting water	Up to 294 acres of estuarine habitat could provide excellent pair/loafing habitat, especially before and after waterfowl season. Currently only small areas are inundated for a short duration, providing little to no resting water.	Up to 294 acres of pairing and loafing habitat will be provided by this project. The greater Skagit and Stillaguamish Delta is a WHSRN site of regional significance as 30-57k shorebird have been observed here in winter between 2007-2011. Use would increase if the site is restored to salt marsh.
*Nesting cover	This proposal will not increase the amount of nesting cover on the wildlife area. Some nesting may occur on fallow agricultural lands and some may occur on high salt marsh in the future. Breeding habitat is not the primary emphasis in the NPL.	This proposal will not increase the amount of nesting cover on the wildlife area.
*Winter food resources	Salt marshes have only been estimated to yield 25 kg/ha of waterfowl food, compared to 400-500 kg/ha for managed freshwater wetlands (B. Dugger, pers. comm.). However, estuarine wetlands provide early season habitat and food resources, then waterfowl shift to foraging in seasonal freshwater and agricultural habitats.	Salt marsh would provide abundant food resources for shorebirds.
*Hunting area	The project will significantly increase the area suitable to hunting by inundating up to 294 acres during high tides. We expect that a boat ramp could be installed and access could occur on foot, via paddle boat, and/or motor boat.	The project will significantly increase the area suitable to hunting by inundating up to 294 acres during high tides. We expect that a boat ramp could be installed and access could occur on foot, via paddle boat, and/or motor boat.

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:

Ducks Unlimited has partnered with WDFW on the following efforts, using past WA Migratory Bird Stamp funds as well as other grant funds, such as ESRP, SRFB and USFWS PS Coastal. DU's role has included fundraising, conducting topographic surveys, geotechnical investigations, hydrodynamic modeling, and design and permitting.

With this funding proposal DU and WDFW anticipate conducting monthly bird surveys from fall through spring for one year prior to restoration and a similar monitoring following restoration. This data may be valuable information for future restoration actions on WDFW lands.

2. Cost Estimate (**Annual Costs**)

Feasibility Phase

As mentioned previously, much work has been completed on the project, and it has gone a long way towards determining the feasibility of a restoration project on Leque Island. To simplify the documentation of the costs incurred to date, the figures in the table below show the costs associated with Feasibility, Design/Permitting and Groundwater Study respectively. These do not represent costs associated with this proposal, but show previous investment in feasibility, design, and permitting phases. These tasks will ultimately contribute to future endeavors and reduce cost.

Task	Total Cost	ESRP Request	Match*	Leverage
Feasibility	$248,000	$177,000	$71,000 NAWCA	ESRP
Design/Permitting	$268,000	$0	$90,000 DU, WA Duck Stamp	$178,000 SRFB
Groundwater Study	$187,000	$0	30,000 DU	SRFB
Sub-Total	$703,000	$177,000	$191,000	

Design Phase

The table below serves to breakdown the costs that are included in our Alternatives Analysis and Design Phase, and it describes the various tasks; alternatives analysis and initiation of WDFW restoration pathway, 60% design, final design and permitting, and a draft monitoring plan. We anticipate modeling multiple restoration scenarios to aid in the selection of the preferred alternative, as well as running a detailed model of the preferred alternative. DU staff is committed to $20,000 in-kind services associated with the pathway and design, and WDFW has pledged $35,000 in-kind for their staff allocated to design review, stakeholder outreach, and coordination. We propose to submit a proposal to the SRFB in spring 2013 for the remaining modeling needs as well as the final design and permitting phase. We maintain close contact with our SRFB grant manager, they continue to support us through the groundwater study effort, and we have discussed this proposed funding strategy. WDFW has cash match that may only be used for construction, which we believe would be able to meet the SRFB's 15% requirement. Our current 2012 proposal to ESRP has ranked in the top 10 out of 34 projects, yet ESRP requires match to be secured prior to an award, which is our immediate challenge. We have $55,000 secured in-kind match and we have proposed $205,515 of unsecured match from SRFB for final design, permitting and monitoring. Securing funding through this proposal would allow us to maintain momentum generated from the conservation milestones previously described, completing the groundwater study, and following up on the stakeholder outreach currently being conducted by WDFW. Leque Island is a large complex project and these funds would allow us to maintain our aggressive timeline that is needed to see this project through implementation and monitoring.

Cost Breakdown

Task	Total Cost	Migratory Stamp Request	ESRP Request	Other Match	Match Source
3 level Alternatives analysis	$78,830	$25,000	$53,830	$0	ESRP

Expand Scope: Restoration Pathway, Design Review, Stakeholder Support and Outreach					
- DU staff	$66,230	$20,000	$36,230	$10,000	DU in-kind
- WDFW Restoration Coordinator / Design Review Team Coordination	$55,000	$0	$20,000	$35,000	WDFW in-kind
60% Design	$266,395	$20,000	$236,395	$10,000	DU in-kind
Hydrodynamic Modeling	$134,218		$109,218	$25,000	SRFB
Final Design and Permitting	$170,515		$0	$170,515	SRFB
Complete draft monitoring, stewardship and maintenance plan	$10,000		$0	$10,000	SRFB
Total,	$781,188	**$65,000**	$455,673	$260,515	

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: 1/9/2013
Contact: Belinda Rotton
Skagit Wildlife Area

1. Region: 4, North Puget Sound

2. County: Skagit

3. Name of Area: **Samish Unit, Leque Unit** Skagit Wildlife Area

4. Region Priority_____(assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration _____X_____ Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram): See attachment A and B

7. Current wetland acreage of project site: Samish Unit-Approximately 30 acres of wetland depressions and 100+ acres floodable. Leque Unit-Seasonal wetlands on approximately 74 acres.

8. Current upland acreage of project site: Samish-220 acres, Leque-148 acres

9. If area is not owned by WDFW:
   a. Current ownership:

   b. Zoning:

   c. USGS Quad reference:

   d. Habitat threats:

   e. Public access:

10. Current function (attach additional sheets if necessary)
    a. Primary use (breeding, migration, and/or wintering):
       Samish-Dabbling duck wintering habitat with cereal grain and corn food production, some wetland enhancements and noxious weed control.
       Leque-Dabbling duck and snow goose wintering habitat with cereal grains, fava beans and corn food production, some wetland enhancements and noxious weed control.

    b. List species and numbers of waterfowl that use area:

Samish-Waterfowl numbers combined for Padilla and Samish Bays (163,650)
Mallard, Northern Pintail, American Wigeon and Green-winged Teal
Based on aerial survey conducted by District Wildlife Biologist Mike Davidson and Jennifer Bohannon 12/02/2010
Leque-Mallard (27,043), Green-winged Teal (2,517), American Wigeon (7,623), Pintail (12,337) and Snow Geese. (Based on aerial survey conducted 12/4/2006 by WDFW District Biologist Mike Davidson. Numbers are combined counts for Port Susan and Livingston Bays.)

c. List species and numbers of other migratory game bird species that use area:
For both the Samish and Leque Units, there are several other species of dabbling ducks.

d. List species and numbers of other game or diversity species that use area:
(note all endangered, threatened, and sensitive species)
Samish- Birds of prey, shorebirds and numerous perching birds such as sparrows and wrens.
Leque- Birds of prey, Tundra and Trumpeter Swans, shorebirds, and numerous non-game birds.

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

Samish- To plant 220 acres of barley, other cereal grains and corn to enhance the area for Wintering waterfowl, public hunting and watchable wildlife programs. Additional work will be necessary to control rank woody debris, noxious weeds and perennial vegetation in the wetland depressions or ponds, in order to restore seasonal open water wetland habitats. The Samish Unit is now the most popular and heavily utilized walk-in waterfowl hunting area on the Skagit Wildlife Area.

Leque- To plant 130 acres of barley, fava beans, winter wheat and corn inter-seeded with cool season grass mix to enhance the area for wintering waterfowl, public hunting and watchable wildlife programs. Planting this area will increase the wintering dabbling duck populations and snow geese populations on South Skagit Bay and Port Susan Bay. Additional work will be necessary to control noxious weeds within the unit.

b. Description of required maintenance and schedule:

Samish- Annual field preparation and the planting of cereal grains and corn. Rehabilitation of wetland depressions and ponds. Noxious weed control.

Leque- Annual field preparation and the planting of cereal grains, fava beans and corn inter-seeded with grasses. Noxious weed control.

c. Description of current water supply and water rights if applicable:
N/A for both Samish and Leque Units

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat		
*Pair, resting water		
*Nesting cover		
*Winter food resources	350	350
*Hunting area	625	625

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:

Existing fall and winter aerial waterfowl surveys.2. Cost Estimate (**Annual Costs**)

		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET			
OPERATING BUDGET			
A/B	Salaries/Benefits		
C	Personal Services		
E	Goods and Services	$40,000	$35,000
G	Travel		
J/K	Equipment		
N	Grants		
Other			
TOTAL COST		$40,000	$35,000
Est. Annual Costs after June 30, 2015:			

Attachment A:

Attachment B:

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: January 28, 2013
Contact: Kyle Guzlas

1. **Region:** Six

2. **County:** Clallam

3. **Name of Area:** Dungeness – Meadowbrook Creek

4. **Region Priority___3____(assigned by Regional Wildlife Program Manager)**

5. **Enhancement/Restoration _X_____ Acquisition____(check one or both)**

6. **Location of project site (attach map, aerial photo, and/or diagram):**
   Maps and project design maps are attached

7. **Current wetland acreage of project site:**
   62

8. **Current upland acreage of project site:**
   2

9. **If area is not owned by WDFW:**
   The project is located on a WDFW Wildlife Area – The Lower Dungeness Unit, North Olympic Wildlife Area

10. **Current function (attach additional sheets if necessary)**
    a. **Primary use (breeding, migration, and/or wintering):**
    The Dungeness estuary and Dungeness Bay is categorized as a site that supports an average of 7,500 waterfowl (13,000 maximum) during winter and migration.

b. List species and numbers of waterfowl that use area:

<u>3 Crabs (project specific area)</u>
American Wigeon – 1,000
Mallards – 50
Northern Pintail – 600
Green Winged Teal – 60
Scaup – 20
Ring-necked Duck – 10
Goldeneye – 10
Bufflehead – 20

<u>Dungeness Bay</u>
American Wigeon – 7,500
Mallards – 500
Gadwall – 25
Green-winged teal – 100
Northern Pintail – 6,000
Scaup – 100
Bufflehead – 500
Goldeneye – 50
Ring-necked duck – 25
Scoter – 1,000

b. List species and numbers of other migratory game bird species that use area:
c. See Table Below

d. List species and numbers of other game or diversity species that use area: (note all endangered, threatened, and sensitive species)

Coastal Dependent or Migratory Birds

Common name	Conservation Priority	Benefits	Management Plan
<u>Waterfowl</u> Mallard Am. Wigeon Gadwall Cinnamon Teal N. Shoveler N. Pintail Green-winged Teal Bufflehead Greater White-fronted Goose **See Appendix B for a complete list of waterfowl species that utilize the Dungeness area. Species are expected to benefit directly or indirectly from the project.*		Utilize shallow marshes for winter foraging; observed feeding in flooded tidal mudflats. This project increases the acreage of significant habitat for waterfowl species.	North American Waterfowl Management Plan (USFWS, 1998) and multiple other state and federal plans for the protection and enhancement of waterfowl habitat. NAWCA priority species
Brant	State Priority Species	Brant are almost exclusively coastal in their range and are found in shallow bays and saltwater marshes.	Annual surveys conducted along Dungeness Basin shorelines (WDFW and

		Large concentrations gather at Dungeness Bay and nearby shorelines during the spring migration (February-April). They utilize eelgrass beds along the shoreline of Dungeness. On April 30, 2012, approx. 2500 Brant were observed directly in front of the project site (WDFW) . The project will help to protect their winter habitat and food sources through improvement of water quality and retention of estuarine wetlands.	USFWS Dungeness Wildlife Refuge staff).
Trumpeter Swan	State Protected	Trumpeter Swan numbers have increased in the Dungeness Valley in recent years. At least 104 swans were observed during the 2011-2012 winter season. A significant night roost and important foraging areas are located near the project site.	Surveys conducted by WDFW and monitoring project initiated in 2011/2012 by volunteers from the Trumpeter Swan Society.
Harlequin Duck	State Priority Species	Improved estuarine habitat functions will benefit the foraging and resting use by Harlequin Ducks throughout the year.	
Shorebirds **See Appendix B for a complete list of shorebirds known to use the lower Dungeness fresh and salt water habitats. Species are expected to benefit directly or indirectly from the project.*		Important shorebird habitats within the Northern Pacific Region are coastal estuaries, riverine systems, natural wetlands, managed wetlands and flooded agricultural areas. This project provides benefits by conserving and restoring these types of habitats. The restoration of the shoreline area will improve foraging areas for shorebirds.	North Pacific Coast Regional Shorebird Management Plan (2004)
Marbled Murrelet	Federally Threatened/ State Threatened	Marbled murrelets forage in Dungeness Bay nearshore environments. Restoring habitat conditions in estuaries would maintain or increase prey levels (fish) for foraging murrelets.	Marbled Murrelet Recovery Plan- conserve foraging habitat
Horned Grebe	State Protected	Observed in the 2010 Sequim-Dungeness Christmas Bird Counts	North Pacific Coast Regional Shorebird Management Plan (2004)
Dunlin	Species of High Concern	A total of 2,115 Dunlin were observed in the 2010 Sequim-Dungeness Christmas Bird Count.	U.S. National Shorebird Conservation Plan (2004)- restores high quality estuarine habitat and restores tidal regime. -NAWCA priority species -Audubon Watch List -USFWS Species of High Concern.
Killdeer	Species of High Concern	Breeding Bird Surveys indicate regional population declines.	North Pacific Coast Regional Shorebird Management Plan (2004)- species of high conservation concern
Caspian Tern	On Birds of Conservation	Caspian terns use fresh and saltwater wetlands, especially	

	Concern 2008 list (USFWS)	estuaries, coastal bays, and beaches. The project area is east of a nesting colony of Caspian terns located on the Dungeness Spit (Monitored by USFWS staff) .	
Marbled Godwit	On Birds of Conservation Concern 2008 list (USFWS)	These large shorebirds nest in native prairie habitats: wet meadows and grassy areas near water. During migration and winter, they are coastal foraging on mudflats, salt marshes, estuaries, and coastal pools. This project will protect habitat this species requires.	
Great Blue Heron	State Priority Species	Great Blue Herons are often observed foraging in salt and fresh water areas near the project site (WDFW and Audubon). Roost sites and potential nesting habitat is located along the Dungeness River. This project will restore and protect foraging habitat.	Priority Species Management Recommendations (WDFW 2012)
Common Loon	State Sensitive	Protecting habitat conditions in the estuary would maintain or increase prey levels for common loons. Continued rapid residential development encroaches on freshwater wetlands and estuaries. This project will stop development on the lands that are conserved by acquisition.	Status Assessment and Conservation Plan (USFWS) Washington Status Report (WDFW 2000) Important Bird Areas of WA
Western Grebe	State Candidate	Conserving habitat conditions in estuaries would maintain or increase prey levels for Western grebes. Continued rapid residential development encroaches on freshwater wetlands and estuaries. This project will stop development on the lands that are conserved by acquisition.	Status Report (WDFW 2011) Marine Bird Monitoring (WDFW 2011)
Common Murre	State Candidate	Conserving habitat conditions in estuaries would maintain or increase prey levels for common murres. Continued rapid residential development encroaches on freshwater wetlands and estuaries. This project will stop development on the lands that are conserved by acquisition.	Marine Bird Monitoring (WDFW 2011)
Sandhill Crane	State Endangered	Small flocks of Sandhill Cranes have been observed (mostly in the spring) landing on wetland areas very near the project site (Audubon Members). The Dungeness area is becoming an important migratory stop for the birds. The project will restore resting and foraging habitat for this species.	Washington State Recovery Plan for the Sandhill Crane (WDFW 2002) and Management Recommendations (WDFW 2005). Protect sandhill crane use-areas through acquisition.
Purple Martin	State Candidate	Populations are declining due to competition with starlings and limited nesting sites. The only well-established colony in Clallam County is on offshore nest boxes directly in front of the project site	Priority Species Management Recommendations (WDFW 2005)

		(Audubon Project). Young Purple Martins successfully fledged from this colony last season. Nesting potential could be increased nest boxes are maintained and if more suitable nesting structures could be installed.	
Pileated Woodpecker	State Candidate	This species prefers dense, mature forest but are becoming more tolerant of disturbed habitats and second growth woodlands. Adult Pileated Woodpeckers are observed along the Dungeness River and are likely nesting along the riparian corridor (WDFW and Audubon Observations). They will benefit from the conservation and restoration of foraging habitat.	Priority Species Management Recommendations (WDFW 2005)

Threatened and Endangered Species

Common Name	Federal Status	Project Benefits	Recovery Plans for Each Species
Chinook Salmon (Puget Sound ESU)	Federally Threatened/ State Candidate	High mortality (other than naturally caused) in early life stages is usually caused by human induced changes in habitat, such as siltation, high water temperatures, low oxygen conditions, loss of stream cover and reductions in river flow. Floodplain and Estuarine wetlands help create a buffer from silt and pollutants, but also provide important feeding and hiding areas. Spawning, rearing and holding use by chinook will be benefited by improved estuarine and nearshore function. Estuaries and their associated wetlands provide vital nursery areas where chinook will spend 6 months prior to their departure to the open ocean. This project will allow management of the habitat along and within the floodplain and estuarine systems to reduce adverse impacts to chinook. Observed during Fyke net surveys (Sather 2008)	-DRMT prioritized list -Limiting Factors Analysis -Recommended Restoration Projects for the Dungeness River -NOPLE Salmon Habitat Protection Strategy Conserves critical rearing habitat for juvenile chinook.
Chum Salmon (Summer Run Hood Canal ESU)	Federally Threatened/ State Candidate	Migration and rearing use by this species will benefit as the estuarine and nearshore system function improves. During the early life stages chum salmon migrate to estuaries to spend several months before heading out to sea. The estuaries and coastal wetlands produce nutrients essential to the estuarine food chain and the copepods, amphipods, and small crustaceans the chum feed upon. Chum salmon depend on both floodplain and estuarine wetlands for protection from predators and for the role these wetlands play in maintaining water	-DRMT prioritized list -Limiting Factors Analysis -Recommended Restoration Projects for the Dungeness River -NOPLEG Salmon Habitat Project Strategy -Summer Chum Initiative Conserves critical

		quality by trapping silt and absorbing chemical pollutants. This project will enable conservation and subsequent restoration of floodplain and nearshore habitat. Observed during Fyke net surveys (Sather 2008)	rearing habitat for juvenile chum.
Bull Trout	Federally Threatened; State Candidate	Bull trout adults and juveniles migrate in the Dungeness River and along the shoreline. Conservation of floodplain and shoreline habitat and removal of infrastructure will improve migratory habitat, in addition to enabling subsequent habitat restoration. (Observed by Streamkeepers 2004)	Draft Recovery Plan for the Puget Sound Bull Trout (2004)
Pacific Herring	Federal Species of Concern; State Candidate	The Pacific herring is of considerable value as a forage species. They spawn primarily on vegetation and substrates typically in sheltered inlets, sounds, bays, and estuaries rather than along open coastlines. The larval stage is sometimes abundantly found in shallow, nearshore waters that are susceptible to shore-based environmental impacts. This species will be benefited by this project by limiting shoreline development and restoration of water quality.	
Bald Eagle	Federal Species of Concern (delisted)/ Species of Concern	Habitat conditions that conserve or increase fish & wildlife populations in this area will assure ongoing prey levels suitable for nesting and wintering bald eagles. There are 5 documented bald eagle nesting territories within 2 miles of the project site (WDFW PHS on the Web, 2012).	BE Recovery Plan & Washington Status Report (WDFW). Pacific Region Bald Eagle Recovery Plan (USFWS). Both outline management of habitat for breeding, foraging, and wintering.
Marbled Murrelet	Federally Threatened/ State Threatened	Marbled murrelets forage in Dungeness Bay nearshore environments Surveys conducted by WDFW and other research teams (WDFW, 2011). Conserving habitat conditions in estuaries would maintain or increase prey levels (fish) for foraging murrelets.	Marbled Murrelet Recovery Plan (USFWS, 1997) - conserve foraging habitat.
Peregrine Falcon	Federal Species of Concern (delisted)/ State Sensitive	Habitat conditions that conserve or increase waterfowl, shorebirds, neotropical migrants and other bird species populations in this area will assure ongoing prey levels suitable for wintering peregrine falcons. Peregrine falcons regularly roost in snags along Meadowbrook Creek and are observed foraging directly to the north of the project site. (Observations by WDFW staff and local Audubon members).	Peregrine Falcon Recovery Plan & Washington Status Report (WDFW , 2002) – manage habitat for winter foraging.
Taylor's Checkerspot Butterfly	Federal Candidate/ State Endangered	Conservation of habitats (estuarine grasslands, meadow habitats) that include host plants and nectaring plants for this butterfly will assure continued occurrence in this area. In May of 2003	Status Report (WDFW 2005) and Guidelines for Protecting Habitat (WDFW 2009).

		WDFW survey documented occurrence of Taylor's checkerspot butterflies in the Dungeness basin. The agency continues to annually monitor unique nearshore Taylor's Checkerspot populations near the project site. (Surveys conducted by WDFW and consultant biologist).	
Common Loon	State Sensitive	Acquisition and subsequent restoration of habitat conditions in the estuary will maintain or increase prey levels for common loons. Continued rapid residential development encroaches on freshwater wetlands and estuaries. This project will stop development on the lands that are conserved by acquisition.	Status Assessment and Conservation Plan (USFWS) Washington Status Report (WDFW 2000) Important Bird Areas of WA
Western Grebe	State Candidate	Protecting habitat conditions in estuaries would maintain or increase prey levels for Western grebes. Continued rapid residential development encroaches on freshwater wetlands and estuaries. This project will stop development on the lands that are conserved by acquisition.	Status Report (WDFW 2011) Marine Bird Monitoring (WDFW 2011)
Common Murre	State Candidate	Conserving habitat conditions in estuaries would maintain or increase prey levels for common murres. Continued rapid residential development encroaches on freshwater wetlands and estuaries. This project will stop development on the lands that are conserved by acquisition.	Marine Bird Monitoring (WDFW 2011)
Sandhill Crane	State Endangered	Small flocks of Sandhill Cranes have been observed (mostly in the spring) landing on wetland areas very near the project site (Audubon members). The Dungeness area is becoming an important migratory stop for the birds. The project will protect resting and foraging habitat for this species through acquisition.	Washington State Recovery Plan for the Sandhill Crane (WDFW 2002) and Management Recommendations (WDFW 2005).
Pileated Woodpecker	State Candidate	This species prefers dense, mature forest but is becoming more tolerant of disturbed habitats and second growth woodlands. Adult Pileated Woodpeckers are observed along the Dungeness River and are likely nesting along the riparian corridor (WDFW and Audubon Observations). They will benefit from the conservation of foraging habitat.	Priority Species Management Recommendations (WDFW 2005)
Purple Martin	State Candidate	Populations are declining due to competition with starlings and limited nesting sites. The only well- established colony in Clallam County is on offshore nest boxes directly in front of the project site (Audubon Project). Young Purple Martins successfully fledged from this colony last season. Nesting potential could be increased if nest boxes are maintained and if more suitable nesting structures could be installed.	Priority Species Management Recommendations (WDFW 2005)

Townsend's Big-eared bat	Federal Species of Concern State Candidate	This species occurs statewide but population declines have been noted. Most habitats are suitable for foraging but the distribution of suitable roost locations influences their ability to feed. The WDFW has documented a Townsend's Big-eared bat roosting along the Dungeness River. Other surveys have shown evidence that they are also roosting in old structures in the Dungeness Valley. Healthy riparian and aquatic systems provide a valuable source of insect prey. The project will improve foraging opportunities for bats.	Management Recommendations (WDFW 2005) Towsend's Big-eared Bat Conservation Assessment (USDA – Forest Service 2004)

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

This proposal will effectively provide a state matching component to a large scale estuarine and nearshore wetland restoration project. The $10,000 request will match $180,000 that will be provided by USFWS for restoration on the newly acquired 3 Crabs Site of the Lower Dungeness Unit of the North Olympic Wildlife Area.

The goal of this project is to **eliminate a tidal and freshwater restriction**, **restore natural sediment transport processes,** increase public access, improve water quality, reduce flooding, recreate historic wetlands, reconnect floodplain habitat, remove toxic creosote and enhance fish and wildlife habitat. These are necessary steps that will enable the Coastal Inlet restoration of the 3 Crabs nearshore and estuary on newly acquired WDFW lands. The 3 Crabs parcel is a 51 acre site, 49 of which are marine intertidal acres, located on Dungeness Bay. The 3 Crabs parcel was filled and armored beginning in the 1950's, creating a "hard point" that has interfered with nearshore sediment transport (Figure 1). The 3 Crabs Restaurant was built on top of the nearshore fill and was in operation from 1958 until it was acquired by WDFW in 2012. This filled area has also had a significant effect on the Meadowbrook Creek estuary on the south side of the project area. During storm and high water events throughout the winter, the Meadowbrook Creek estuarine environment is moderately to heavily used by migratory waterfowl. This project will restore these habitats and expand the acreage that is available to waterfowl.

WDFW opened the Lower Dungeness Unit to waterfowl hunting in 2010 through a Land Use agreement with the Dungeness Farms duck hunting club. This has proved to be a consistent quality hunting location at the mouth of the Dungeness River. Public hunting grounds are extremely limited throughout Clallam County, especially along the Strait of Juan de Fuca and Dungeness Bay. The City of Sequim and the Dungeness Valley have received a tremendous amount of development pressure over the past two decades. As exurban development continues to compromise open space and farmland, the numbers of waterfowl migrating and wintering in the area has declined. The restoration activities that are included in this project will provide quality resting and feeding habitat for the high numbers of waterfowl that utilize this site. This will benefit the hunting that takes place at the Dungeness estuary.

b. Description of required maintenance and schedule:

The restoration elements that are associated with this project will be designed to be self-sustaining. During the course of the 3 Crabs restoration, WDFW will be constructing a new access point to the wildlife area with up to 20 parking spots. This new access point will be maintained by wildlife area staff. During the waterfowl hunting season, WDFW provides a sani-can at the main Lower Dungeness parking access.

c. Description of current water supply and water rights if applicable:

NA

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat	5	
*Pair, resting water	60	
*Nesting cover	5	
*Winter food resources	30	
*Hunting area	2	

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:

The Dungeness area is surveyed annually by USFWS and WDFW. WDFW will continue to survey the proposed improvements through the duration of the project to ensure that the habitat objectives are being met.

2. Cost Estimate (Annual Costs)

	July 1, 2013-June 30, 2014	July 1, 2014-June 30, 2015
CAPITAL BUDGET	$10,000	
OPERATING BUDGET	$10,000	
A/B Salaries/Benefits	$3,160	
C Personal Services		
E Goods and Services	$6,840	
G Travel		
J/K Equipment		
N Grants		
Other		
TOTAL COST	$10,000	
Est. Annual Costs after June 30, 2015: $0.0		

Legend

- Lower Dungeness Unit
- Land Use Agreement WDFW Management Area
- WDFW Conservation Easement - PCC Farmland Trust

3 Crabs Nearshore and Estuarine Restoration

Township 31N, Range 3W, Section Ptns 30

0 0.5 1 Miles

N

3 Crabs Nearshore and Estuary Restoration
Project Site Prep and Design Elements

N

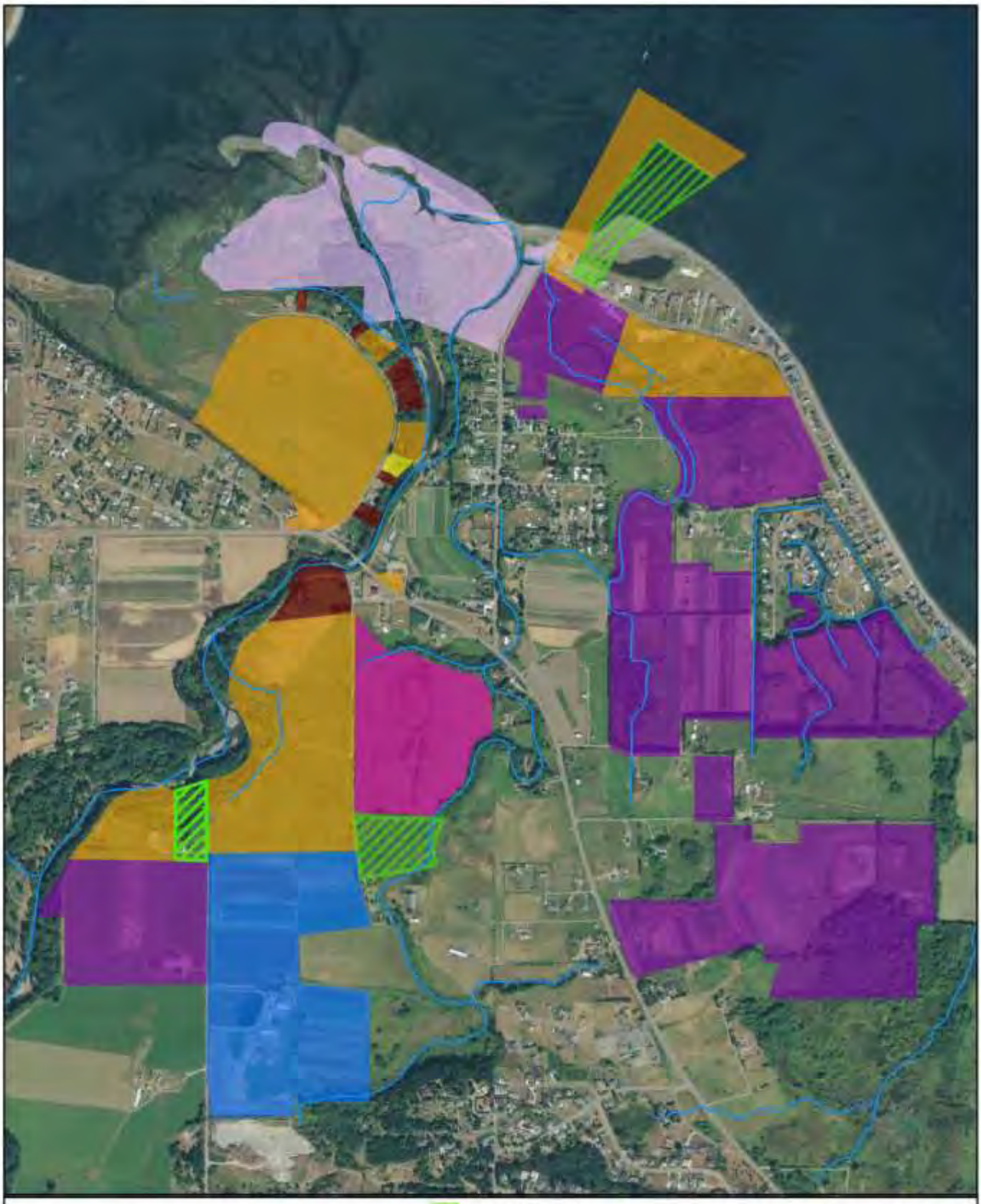
0 155 310 Feet

Site Prep
- Infrastructure Removal
- Septic System Removal

100% Design
- Removal of Road fill/Reroute Utilities
- Bridge Construction Removal (pending road alternatives)
- Regrade to Salt Marsh and Dune Elevation
- Removal of Rip Rap Groins
- Shoreline Armoring Removal
- Large Woody Debris Placement
- Dike Removal
- Remove Creosote Pilings
- Creosote Contaminant Removal

10% Design
- Road Fill Dike Removal
- Road Relocation- Option B
- Road Relocation- Option A
- Meadowbrook Creek Realignment

NORTH OLYMPIC SALMON COALITION



Existing and Proposed Conservation Efforts in the Dungeness Estuary Basin

N

0 0.15 0.3 Miles

- Proposed WDFW Acquisition
- Department of Transportation (in process)
- Tribal Fee-Simple
- Washington Department of Fish and Wildlife
- PCC Farmland Trust (WDFW CE)
- North Olympic Land Trust Conservation Easements
- Dungeness Farms Hunting Reserve
- Clallam County
- Dungeness River and Tribs

Figure 1 – Flocks of Brant on the 3 Crabs shoreline

Figure 2 – Meadowbrook Creek Estuary (to the west of the project site)

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: January 23, 2013
Contact: Kyle Guzlas

1. Region: 6

2. County: Pacific

3. Name of Area: Chinook and Willapa Wetlands Wildlife Area Units

4. Region Priority___2____(assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration _X_____ Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram): T9N R10W S5 and T14N R9W S 20

7. Current wetland acreage of project site: 800

8. Current upland acreage of project site: 72

9. Current function (attach additional sheets if necessary)

a. Primary use (breeding, migration, and/or wintering):
Breeding, Wintering, and Migration use occurs at the project site. Waterfowl including dusky geese and pintails winter in the wetlands on this site.

b. List species and numbers of waterfowl that use area:
Mallards 500, pintails 750, geese 1,000, gw teal 300 typical wintering numbers

c. List species and numbers of other migratory game bird species that use area:

d. List species and numbers of other game or diversity species that use area:
(note all endangered, threatened, and sensitive species)

- 13 evolutionary significant units (ESUs) of federally listed Columbia Basin anadromous salmonids.

- Wintering elk herd

10. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

The Chinook and Willapa Wetlands Units currently receive the most hunting pressure in the Olympic Willapa Hills Wildlife Area Complex. The quality waterfowl hunting and migratory waterfowl usage at both locations is consistent, largely because of the recent Duck Stamp projects which has funded the maintenance and enhancements at these units. WDFW is also working with BPA on a potential new acquisition that will expand the Chinook Wildlife Area by more than 200 acres of high quality estuarine and freshwater wetlands. This addition to the wildlife area will provide walk-in access to Giles Island (currently part of the Chinook Unit) that will provide an additional 175 acres of hunting area.

<u>Chinook Unit</u>

Wetland enhancement and moist soil management techniques are conducted on approximately 212 acres on the Chinook Unit. This involves a series of spraying, disking, planting and mowing activities. Five drainage ditches have been plugged to increase flooding as part of the restoration on this site. Annually, all fields associated with this project are mowed for sheetwater habitat. Additionally, approximately 30-40 acres are sprayed and disced for promotion of smartweed. All activities that are conducted on the site are consistent with the NRCS Wetland Reserve Program Compatible Use Agreements that have been established and amended as the adaptive enhancement techniques have progressed over the past 7 years.

In 2012, staff refined this activity with great results. Timing of spraying, retreating, and discing largely effect the amount and productivity of the smartweed (climatic conditions also played a large role). In 2012, staff sprayed in late spring (May), re-treated spot areas in June and disced the fields in late July and early August. As an experiment, staff also seeded barley into sections of the smartweed managed areas selected for 2012. In the end, duck stamp funding produced a substantial area of sheetwater habitat full of food resources. See the photographs from November 2012 attached.

If the wildlife area grows during the duration of this Duck Stamp project, staff will efficiently dedicate resources to the most critical use areas for migratory waterfowl.

<u>Willapa Wetlands Unit</u>

Three separate freshwater wetland cells were created in 2007 at this unit. Each cell is controlled by a water control structure that requires annual management for the draw down and filling of the wetland cells. Duck stamp funds will be utilized for controlling noxious weed infestations throughout the unit in order to maintain

the highly productive wetland units that were created on this site. Three hunting blinds are also maintained, further improving the hunting access to the site.
Over the past 5 years two of the three cells have self-sustained in regards to the quality of the wetland. Wetland Cell #1 has experienced a semi-substantial spread of reed canary grass which has limited the productive values that are present to wildlife. In 2013 and 2014, wildlife area staff will conduct several actions that will control the canary grass and enhancement the wetland. This will include complete drawdown in early spring, discing and spraying in summer, and possible re-treat in the fall just prior to the winter rains.

b. Description of required maintenance and schedule:
Description of maintenance of enhancement activities is described in 10.a above.

c. Description of current water supply and water rights if applicable:
The Chinook Unit utilizes a series of 5 plugged ditches for retaining the water that creates the waterfowl habitat benefits on the site. Further, WDFW manipulates the Chinook River tidegates throughout the year to maximize estuarine and wetland benefits across the wildlife area unit.
The Willapa Wetlands Unit utilizes three water-control structures for retaining water.

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat		
*Pair, resting water		
*Nesting cover		
*Winter food resources	310	180
*Hunting area	310	180

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:
The area is surveyed as part of breeding waterfowl section surveys as well as part of midwinter inventory. Existing management has increased breeding pair numbers on the wildlife area.
Also, the management units are surveyed several times throughout the winter to determine the effectiveness of the annual techniques. These funds will allow continuation of these practices.

11. Cost Estimate (<u>Annual Costs</u>)

		July 1, 2013-June 30, 2014	July 1, 2014-June 30, 2015
CAPITAL BUDGET			
OPERATING BUDGET		$14,845	$14,845
A/B	Salaries/Benefits	$11,595	$11,595
C	Personal Services		
E	Goods and Services	$3,250	$3,250
G	Travel		
J/K	Equipment		
N	Grants		
Other			
TOTAL COST		$14,850	$14,850
Est. Annual Costs after June 30, 2015: 15,000/yr			

TOTAL REQUEST = $29,700

Legend

Chinook Unit

Developed Parking Area

Wetland / Moist Soil Enhancement Fields

0 0.2 0.4 Miles

N

Legend

- Willapa Wetlands (Potters Slough) Unit
- Established Hunting Blinds
- Developed Parking Area
- Trail

0 0.25 0.5 Miles

N

CHINOOK UNIT - 900 acres

The Chinook Unit is located off of Highway 101 just outside of the city of Chinook on the Lower Columbia River. There are two access points that can be utilized. The northern parking area is located .25 miles east of the Chinook River Bridge on Hwy 101. This access point affords a small boat launch area adjacent to the main parking area. Hunting on the main Chinook river channel and sloughs is common on this unit via boat. Also, this access point provides a walk-in experience to wetlands and ponded areas on the southern portions of the wildlife area unit. The other access point is located off of Ligenfelter Road off of Highway 101. This small parking area provides access to the southern and eastern portions of the wildlife area. Fields immediately adjacent to this parking area are managed to provide waterfowl feeding habitat and can provide solid hunting conditions when the water is up. Both access sites are utilized by pheasant and big game hunters throughout the hunting season. This is a popular unit since it provides a variety of quality hunting prospects. It also provides excellent bird watching opportunities.

Scouting Report

Dabbling Ducks:
Dependant on conditions on the Columbia River. Moderate numbers of mallards, wigeon, green-winged teal, and pintails

Diving Ducks:
Low to moderate numbers of bufflehead, mergansers, and goldeneye

Geese:
Low to moderate numbers of several subspecies of Canada geese

WILLAPA WETLANDS (POTTER'S SLOUGH) UNIT – 580 acres

The Willapa Wetlands (Potter's Slough) Unit is a restored tidally influenced estuary located about 2 miles west of South Bend along the Willapa River and adjacent to Highway 101. There is a developed parking area at this site, as well as, 3 established hunting blinds. The unit is managed for restored estuary function, waterfowl habitat, and elk forage. In early morning and late evening this is an excellent location for Roosevelt elk viewing.

Scouting Report

Dabbling Ducks:
Moderate numbers of mallards, wigeon, teal and pintails.

Diving Ducks:
Low numbers of common goldeneyes and buffleheads.

Geese:
Moderate numbers of Canada Geese.
High numbers of Dusky Canada Geese

CHINOOK UNIT

Figure 1. Smartweed Bounty, Chinook Wildlife Area Unit, Duck Stamp Project

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program

Migratory Bird Habitat Project Proposal

Date: January 31, 2013

Columbia Basin, Waterfowl Habitat Management
DSP Funding Request: **$54,100**
Total Project Cost: $199,940

Contacts: Rich Finger 509-754-4624
Greg Fitzgerald 509-765-6641

1. Region: 2

2. County: Grant and Adams

3. Name of Area: Columbia Basin Wildlife Area Complex, with focused efforts on;

   1) 239 Drain Ponds, Desert Unit; T18N, R24E, S ½ S25
   2) Farm Unit Pond, Gloyd Seeps Unit; T20N, R28E, N ½ S10
   3) Frenchmen Regulated Access Area (FRAA), Desert Unit; T17N, R27E, S ½ Section 8 and W ½ S9
   4) Frenchmen Reserve, Desert Unit; T17N, R27E, S17
   5) Gloyd, Gloyd Unit;
   6) Mansfield Pond, Gloyd Seeps Unit; T21N, R28E, S20
   7) Saddle Mountain Pump Plant (SMPP), East Columbia Basin Irrigation District; T15N, R28E, NE ¼ S24
   8) Spud Field, Gloyd Seeps Unit; T21N, R28E, S19
   9) TD-02, Desert Unit; T18N, R27E, S31
   10) Westlake, Desert Unit; T19N, R28E, S31 and T18N, R28E, S06
   11) Winchester Reserve, Desert Unit; T18N, R25E, S12 and T18, R26E, S ½ S7
   12) Winchester Regulated Access Area (WRAA), Desert Unit; T18N, R25E, NE ¼ S13; T18N, R26E, NW ¼ S18

4. Region Priority_____(assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration _____X_____ Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram):

   Grant County, between towns of Moses Lake, Stratford, Quincy, and George.
   See Figure 1.

7. Current wetland acreage of project site:

Project Site	Wildlife Area Unit	Acres		
		Wetland	Upland	Project Area
Winchester RAA	Desert	155	185	340
Winchester Reserve	Desert	348	644	992
Frenchmen RAA	Desert	136	486	622
Frenchmen Reserve	Desert	227	252	479
Gloyd	Gloyd	0	150	0
239 Ponds	Desert	100	243	343
TD-02	Desert	80	196	276
Westlake	Desert	762	1,578	2,340
Mansfield Pond	Gloyd	109	428	537
Spud Field	Gloyd	88	191	279
Farm Unit Pond	Gloyd	95	152	247
Saddle Mt. Pump Plant	Other	4	16	20
	TOTAL ACRES	2,104	4,371	6,475

8. Current upland acreage of project site: No upland acreage will be impacted.

9. If area is not owned by WDFW:

a. Current ownership:

Project Site	Ownership			MANAGER
	WDFW	BOR	ECBID[1]	
239 Ponds		YES		WDFW
Farm Unit Pond	YES			WDFW
Frenchmen RAA	YES			WDFW
Frenchmen Reserve		YES		WDFW
Gloyd	YES	YES		WDFW
Mansfield Pond	YES	YES		WDFW
Saddle Mt. Pump Plant			YES	WDFW
Spud Field	YES			WDFW
TD-02	YES			WDFW
Westlake		YES		WDFW
Winchester Reserve		YES		WDFW
WRAA		YES		WDFW

[1]ECBID – East Columbia Basin Irrigation District

b. Zoning: All sites are zoned as Rural, Open Space Recreation

c. USGS Quad reference:

Project Site	QUAD REFERENCE
239 Ponds	GEORGE
Farm Unit Pond	GLOYD
Frenchmen RAA	ROYAL CAMP
Frenchmen Reserve	ROYAL CAMP
Gloyd	GLOYD
Mansfield Pond	GLOYD
Saddle Mt. Pump Plant	OTHELLO
Spud Field	GLOYD
TD-02	MAE
Westlake	MOSES LAKE SOUTH
Winchester Reserve	WINCHESTER SW, WINCHESTER SE
WRAA	WINCHESTER SW, WINCHESTER SE

d. Habitat threats: The primary habitat threat at all project sites is wetland succession resulting in closed wetlands. The establishment and spread of non-native invasive plant species such as common reed and Russian olive as well as native species such as cattail and hardstem bulrush are creating late-successional wetlands with little to no value to waterfowl and recreation. *Phragmites* in particular is highly invasive and a significant threat to wetland management objectives.

e. Public access: WRAA, FRAA, Winchester and Frenchmen Reserves, TD-02, and 239 Ponds are within the Desert Unit of the Columbia Basin Wildlife Area. The Farm Unit Pond, Spud Field, and Mansfield Pond are within the Gloyd Seeps Unit of the Columbia Basin Wildlife Area. Westlake is within the Potholes Unit of the Columbia Basin Wildlife Area. All but the reserves are open to public hunting as well as wildlife viewing. Although not located on a designated Wildlife Area, the SMPP is also open to public hunting and wildlife viewing as well.

10. Current function (attach additional sheets if necessary)

a. Primary use (breeding, migration, and/or wintering):

Currently, wetlands in all project areas function primarily as wintering areas for a variety of waterfowl species. As such, they also provide very popular waterfowl hunting and viewing opportunities. Most of the areas were once important to breeding waterfowl as well, particularly during the 1980s, before wetland succession reduced open water habitats and forage resources in the system.

b. List species and numbers of waterfowl that use area:

Project Area	Mallard	Canada Geese	N. Pintail	Other Dabblers	Divers	Swans	Sandhill Cranes
239 Ponds	5k	10-100	10-100	100-500	10-100	0	0
Farm Unit Pond	100-500	100-500	100-500	300	10-100	10-100	0
FRAA	5k	500	1000	500	10-100	200	10-100
Frenchmen Reserve	15k	5k	1000	500	100-200	100	200-500
Gloyd	20k	200	100-500	100-500	100-500	10-50	10-100
Mansfield Pond	15k	10-100	100-500	100-500	100-500	10-50	10-100
SMPP	10-100	0	10-100	10-100	0	0	10-100
Spud Field	5k	10-100	100-500	100-500	10-100	0	0
TD-02	1k	10-100	10-100	100-500	10-100	10-50	0
Westlake	500-5k	10-100	10-100	100-500	10-100	10-50	0
Winchester Reserve	50k	5k	100-500	100-500	10-100	10-50	200-500
WRAA	10k	1k	5k	1k	10-100	200	10-100

c. List species and numbers of other migratory game bird species that use area:
Common Snipe: 100s
Mourning dove: 1,000s

d. List species and numbers of other game or diversity species that use area:
(note all endangered, threatened, and sensitive species)

Species	Number	Status
American Avocet	10-100	
American Bittern	10-100	
American Coot	100's	
American Goldfinch	100's	
American Robin	100's	
American Tree Sparrow	10-100	
American White Pelican	10-100	SE
Bald Eagle	10-100	ST
Bank Swallow	100's	
Barn Swallow	100's	
Belted Kingfisher	10-100	
Bewick's Wren	10-100	
Black Tern	10-100	
Black-billed Magpie	1000's	
Black-crowned Night Heron	10-100	
Black-headed Grosbeak	10-100	
Black-necked Stilt	10-100	
Bonaparte's Gull	10-100	
Brewer's Blackbird	10-100	
Brown-headed Cowbird	100's	
Bullock's Oriele	100's	
California Gull	10-100	
California Quail	100-1000	
Caspian Tern	10-100	
Cliff Swallow	100's	
Common Raven	10-100	
Common Yellowthroat	10-100	
Cooper's Hawk	10-100	
Dark-eyed Junco	100's	
Dunlin	10-100	
Eared Grebe	10-100	
Eastern Kingbird	10-100	
European Starling	100's	
Evening Grosbeak	10-100	
Foresters Tern	10-100	
Grasshopper Sparrow	100's	
Great Blue Heron	10-100	
Great Egret	10-100	
Great Horned Owl	10-100	
Greater Yellowlegs	10-100	

Species	Number	Status
Gyrfalcon	<10	
Hairy Woodpecker	10-100	
Killdeer	100's	
Lazuli Bunting	10-100	
Lesser Yellowlegs	10-100	
Long-billed Curlew	10-100	
Long-billed Dowitcher	10-100	
Long-eared Owl	<10	
MacGillivray's Warbler	100's	
Marsh Wren	100's	
Nashville Warbler	100's	
Northern Flicker	100's	
Northern Harrier	100's	
Osprey	<10	
Pied-billed Grebe	100-1000	
Prairie Falcon	10-100	
Red-tailed Hawk	10-100	
Red-winged Blackbird	100-1000	
Ring-billed Gull	10-100	
Ring-necked Pheasant	1000's	
Sandhill Crane	100-1000	SE
Savannah Sparrow	100's	
Say's Phoebe	10-100	
Sharp-shinned Hawk	10-100	
Short-eared Owl	10-100	
Song Sparrow	100's	
Sora	10-100	
Spotted Sandpiper	10-100	
Spotted Towhee	10-100	
Swainson's Hawk	10-100	
Trumpeter Swan	10-100	
Varied Thrush	10-100	
Violet-green Swallow	10-100	
Virginia Rail	10-100	
Western Kingbird	100's	
Western Meadowlark	100's	
Western Tanager	10-100	
Western Wood-pewee	10-100	
White-crowned Sparrow	1000's	
Wilson's Phalarope	10-100	

(SE) – State Endangered, (ST) – State Threatened

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

239 PONDS. Invasive species control. Supported primarily by BOR funding.

A photo showing the current condition of the 239 Ponds are provided in **Figure 2** as well as before and after photos of the treatment method.

FARM UNIT POND. Invasive species control and water level management. Supported by Duck Stamp and Print Funding.

Photos of the Farm Unit Pond in 2006 before management efforts began and in 2009 after the establishment of smartweed are provided in **Figure 3**.

FRENCHMEN REGULATED ACCESS AREA. Invasive species control, water level management, and establishment of food plot. Supported primarily by BPA funding.

35 acres of food plot will require herbicide treatment(s), burning/mowing, disking, fertilizing, and seeding.

Photos of established *Phragmites* stands along the FRAA inlet ditch and past efforts to establish stands of desirable plant species are provided in **Figure 4**.

FRENCHMEN RESERVE. Invasive species control. Supported primarily by BOR funding.

Frenchmen Reserve has been invaded by *Phragmites* and Russian olive which has greatly reduced loafing sandbar habitat used heavily by mallards and Canada geese. Herbicide application from last year provided in **Figure 5.** We intend to continue herbicide treatments as needed and will begin Russian olive removal using a TurboSaw.

GLOYD. Upland habitat restoration and riparian development. Supported by Pheasants Forever and ALEA. Some Russian olive removal planned which would be supported by this Duck Stamp and Print Proposal.

Approximately 150 acres of old ag fields are currently being reverted to native bunchgrass stands with planting planned for fall 2013. These fields are in their second growing season of a chemical fallow treatment. Additionally, approximately 3 acres of riparian development has occurred using chemical fallow followed by planting of willow and dogwood cuttings (**Figure 6**).

MANSFIELD POND. Invasive species control and water level management. Supported primarily by Duck Stamp and Print Funding.

A new water control structure was installed on Mansfield Pond during June of 2011 giving increased management flexibility in this area. Efforts have been ongoing to reduce tall emergent coverage to about 25%. Smartweed has naturally re-invaded (**Figure 7)** in most areas. More consistent management of water control structure and 5-10 acres of mowing are needed annually.

SADDLE MOUNTAIN PUMP PLANT. Invasive species control. Supported primarily by BOR funding.

The SMPP was created in August 2010. The site was dominated by tall wheatgrass and Canada thistle prior to excavation and is susceptible to noxious weed (e.g., Canada thistle) establishment. Since production creation we have realized soil chemistry (alkalinity) is limiting vegetation establishment. This site requires <u>approximately 5 acres of herbicide application</u> annually. Photos of the SMPP before and after water delivery are provided in **Figure 8**.

SPUD FIELD. Invasive species control and water level management. Supported by Duck Stamp and

Print Funding.

Wetland management of the Spud Field is not a high priority because of competing vegetation and significant hydrologic changes planned for near future associated with Supplemental Feed Route Project. Past herbicide treatments have support riparian planting along the creek and to open up areas for hunting opportunity (**Figure 9**). However, mowing several 1-2 acre patches is needed to enhance hunting opportunity, if conditions allow. Future plans for this project site for several shallow excavated basins with adjacent islands to create hunting blinds. The Spud Field is virtually un-huntable due to rank quackgrass leaving no open water patches. Further, the entire field is flooded by about 1' water depth.

TD-02 (HARRIS PONDS). Invasive species control. Supported by BPA funding.

Maintenance of shallow excavations created in 2006 is needed to keep wetlands from closing in. Pre-project, wetlands consisted of only 10% open water. Since 2007, due to the excavations and herbicide control, these wetlands have maintained 56% open water.

WESTLAKE. Invasive species control. Supported primarily by BOR funding.

WINCHESTER RESERVE. Invasive species control. Supported primarily by BOR funding.

WINCHESTER REGULATED ACCESS AREA. Invasive species control, water level management, establishment of food plot, and vegetation planting around blinds for concealment. Supported primarily by BOR funding.

Primary objectives will include <u>disking and seeding ~10 acres/annually with desirable plant species</u> that provide waterfowl with quality forage and cover. Experimentation of food plots in adjacent uplands using winter and spring wheat has begun and is showing some potential **(Figure 11)** though improvements are needed for additional planting to be warranted.

NOTE: In the event that project areas do not require the proposed acreage of herbicide treatment, remaining herbicide will be used to supplement past efforts of invasive species control along the Winchester Wasteway.

b. Description of required maintenance and schedule:
Wetlands in project areas where we plan to disk and seed desirable species will require periodic (1 or 2 year interval) tillage of pond basins and herbicide application to promote desirable plant communities and control undesirable vegetation. Seeding desirable species of plants may also be necessary.

For areas where noxious weed control is the primary objective a contracted helicopter will apply initial herbicide treatments in September 2011. Wherever feasible, chemically-killed *Phragmites* will be burned by the Columbia Basin Wildlife Area staff in February 2012 (feasibility is determined primarily by accessibility, standing biomass, and safety). Any *Phragmites* regrowth will then be re-sprayed by helicopter in September 2012.

c. Description of current water supply and water rights if applicable:

Water for wetlands in the WRAA and FRAA project areas is diverted from the Winchester and Frenchmen Wasteways, respectively, via a delivery ditch. Authority to divert water was provided by BOR and QID for period of time outside of the irrigation season. Mansfield Pond receives water naturally from an existing spring. Water for wetlands at the SMPP site are diverted from an adjacent irrigation canal under the authority of the ECBID. A water contract is in place which allows for irrigation of the unit during the irrigation season.

d. Benefits to migratory game birds and recreation (quantify benefits below):

Projected acreage increase for waterfowl:

Benefit	Brood habitat	Pair, resting water	Nesting cover	Winter food resources	Hunting area
239 Ponds	100	100	0	25	100
Farm Unit Pond	40	40	0	10	40
FRAA	0	0	0	40	40
Frenchmen Reserve	20	160	0	20	0
Gloyd	0	0	150	0	0
Mansfield	25	25	0	25	25
SMPP	0	0	0	4	4
Spud Field	0	0	0	0	5
TD-02	10	10	0	10	10
Westlake	25	25	0	25	25
Winchester Reserve	25	25	0	25	0
WRAA	0	0	0	40	40

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:

Vegetation-. Annual site visits are conducted to (1) determine where tall emergent vegetation coverage is becoming excessive, (2) determine areas most in need of disking and seeding, (3) determine areas which provide high value to waterfowl species without a need for tilling and seeding, (4) identify best areas to plant specific species based on available moisture, and (5) identify areas most likely to be colonized by undesirable plant species.

Wildlife Use-. With the exception of the SMPP, all of these areas are surveyed for waterfowl use during winter by fixed wing. Surveys typically occur during November and January (mid-winter inventory). However, because these surveys take place during the hunting season, waterfowl use is typically under-estimated.

Recreational Value-. Local staff are working to establish ‘register to hunt’ boxes at the WRAA and FRAA. Proposed registration would provide for a measure of hunter success and satisfaction. We intend to have this program implemented for the 2011-12 season.

2. Cost Estimate (**Annual Costs**)

		July 1, 2011-June 30, 2012	July 1, 2012-June 30, 2013
CAPITAL BUDGET			
OPERATING BUDGET			
A/B	Salaries/Benefits	$7,250 Nat Res Tech (3 mth) $8,200 Bio II (2 mth) $2,500 Bio IV (0.5 mth) $17,950 TOTAL	$7,250 Nat Res Tech (3 mth) $8,200 Bio II (2 mth) $2,500 Bio IV (0.5 mth) $17,950 TOTAL
C	Personal Services		
E	Goods and Services	$4,000 aerial herbicide (100 ac) $2,000 contract disking (20 ac) $1,300 fertilizing/seeding (20 ac) $7,300 TOTAL	$4,000 aerial herbicide (100 ac) $2,000 contract disking (20 ac) $1,300 fertilizing/seeding (20 ac) $7,300 TOTAL
G	Travel		
J/K	Equipment	$1,800 Vehicle (3 mth MP)	$1,800 Vehicle Vehicle (3 mth MP)
N	Grants/Cost share BPA BPA BPA BPA BPA/Wildlife Area BPA/Wildlife Area Pheasants Forever ALEA	$21,800 NRT2 (9 mth) $2,000 Bio II (0.5 mth) $3,500 disking (35 ac) $5,500 aerial herbicide (135 ac) $2,300 fertilizing/seeding (35 ac) $5,400 Pickup (9 mth MP) $50,000 grassland restoration (150 ac) $14,840 riparian stabilization (3-4 ac) $105,340 TOTAL	$21,800 NRT2 (9 mth) $2,000 Bio II (0.5 mth) $3,500 disking (35 ac) $5,500 aerial herbicide (135 ac) $2,300 fertilizing/seeding (35 ac) $5,400 Pickup (9 mth MP) $40,500 TOTAL
Other			
TOTAL COST		TOTAL: $132,390 COST SHARE: $105,340 **DSP REQUEST: $27,050**	TOTAL: $67,550 COST SHARE: $40,500 **DSP REQUEST: $27,050**
TOTAL PROJECT COST		**$199,940**	
TOTAL DSP REQUEST		**$54,100**	
Est. Annual Costs after June 30, 2013: The provided budget represents annual maintenance needs and will likely be carried forward in the future depending on results.			

Assumptions:

- Herbicide application at $40/ac (includes staff time for recon effort)
- Disking at $100/ac.
- Fertilizing and seeding at $65/ac.

Figure 1. Area Map.

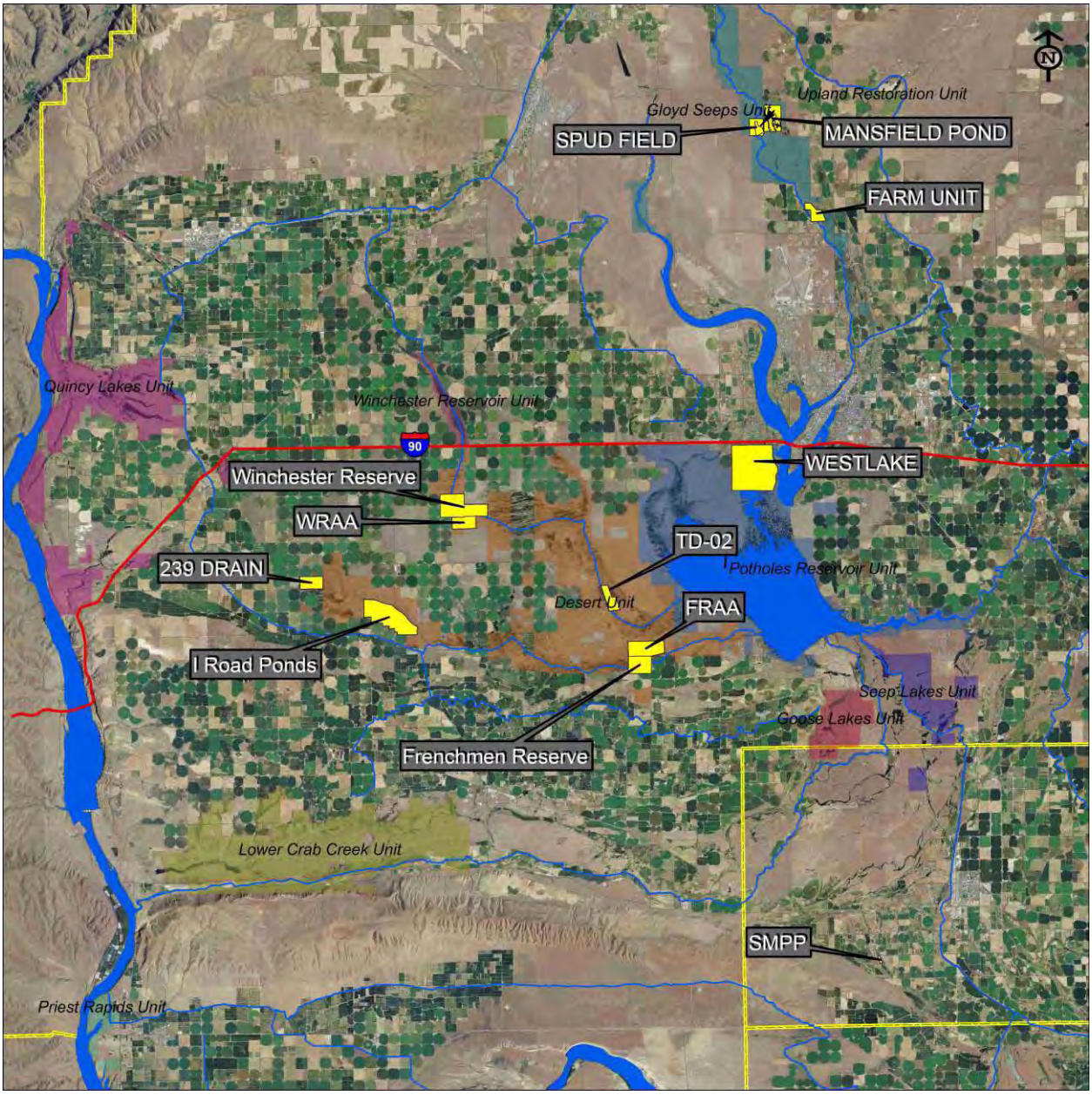


Figure 2. Photo of the 239 Drain Ponds that are late successional and dominated by tall emergent species including *Phragmites* and Russian olive trees. This project site is adjacent to a hunt club that draws thousands of mallards.

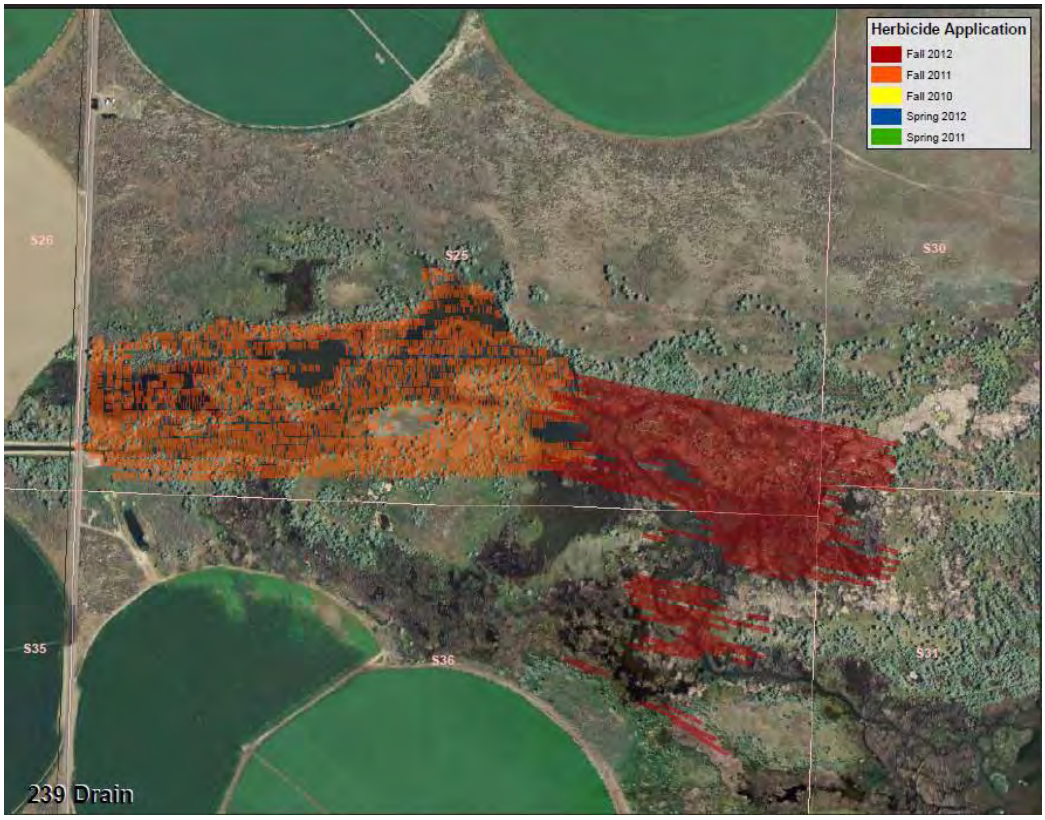
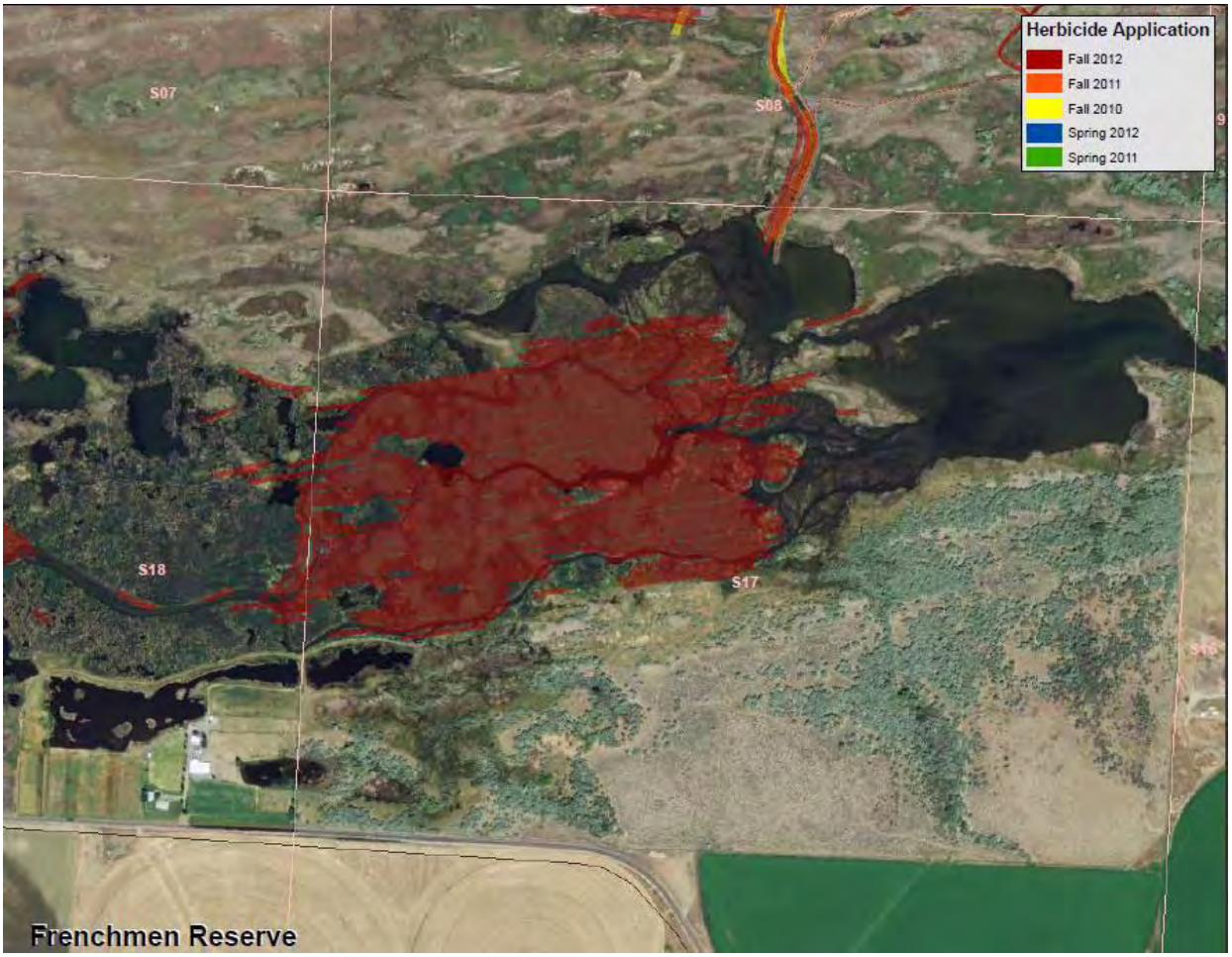


Figure 3. Photos showing the Farm Unit Pond in 2006 prior to tall emergent control and in 2009 after tall emergent vegetation was eliminated and smartweed was established. The black arrow represents the 2009 aspect, which shows a considerable smartweed response.

Figure 4. TOP: Photo of *Phragmites* that is established along the banks of the FRAA inlet ditch. *Phragmites* must be controlled aggressively within the FRAA project wetlands. **BOTTOM:** Photo of a pond basin on the FRAA that was disked and seeded with millet.

Figure 5. Herbicide application at Frenchmen Reserve to eliminate *Phragmites*.



Turbo Saw attachment to be used to control Russian olives. Saw includes spray boom to apply herbicide to Russian olive stumps.

Figure 6. TOP: Installation of willow and dogwood cuttings with waterjet stinger and volunteer help covered by ALEA. 3,200 cuttings were planted during November 2012. **BOTTOM:** Photo of cuttings during January 2013 after reed canarygrass had flattened from winter snows.

Figure 7. TOP: Smartweed establishment in mudflat areas of Mansfield Pond following drawdown. Drawdowns require continual visits to unplug the water control structure from beaver activity. **BOTTOM:** Smartweed response in lower pond which Mansfield historically drained into. By dewatering, we have successfully stimulated smartweed production.

Figure 8. Saddle Mountain Pump Plant Impoundment before and after water delivery. This is a new project in need of seed bed enhancement.

Figure 9. Spud field herbicide treatments to assist in establishment of riparian planting along the west side of creek and to open up areas for hunting opportunity by boat (east side of creek) and walk-in access (eastern pond sprayed during fall 2011).

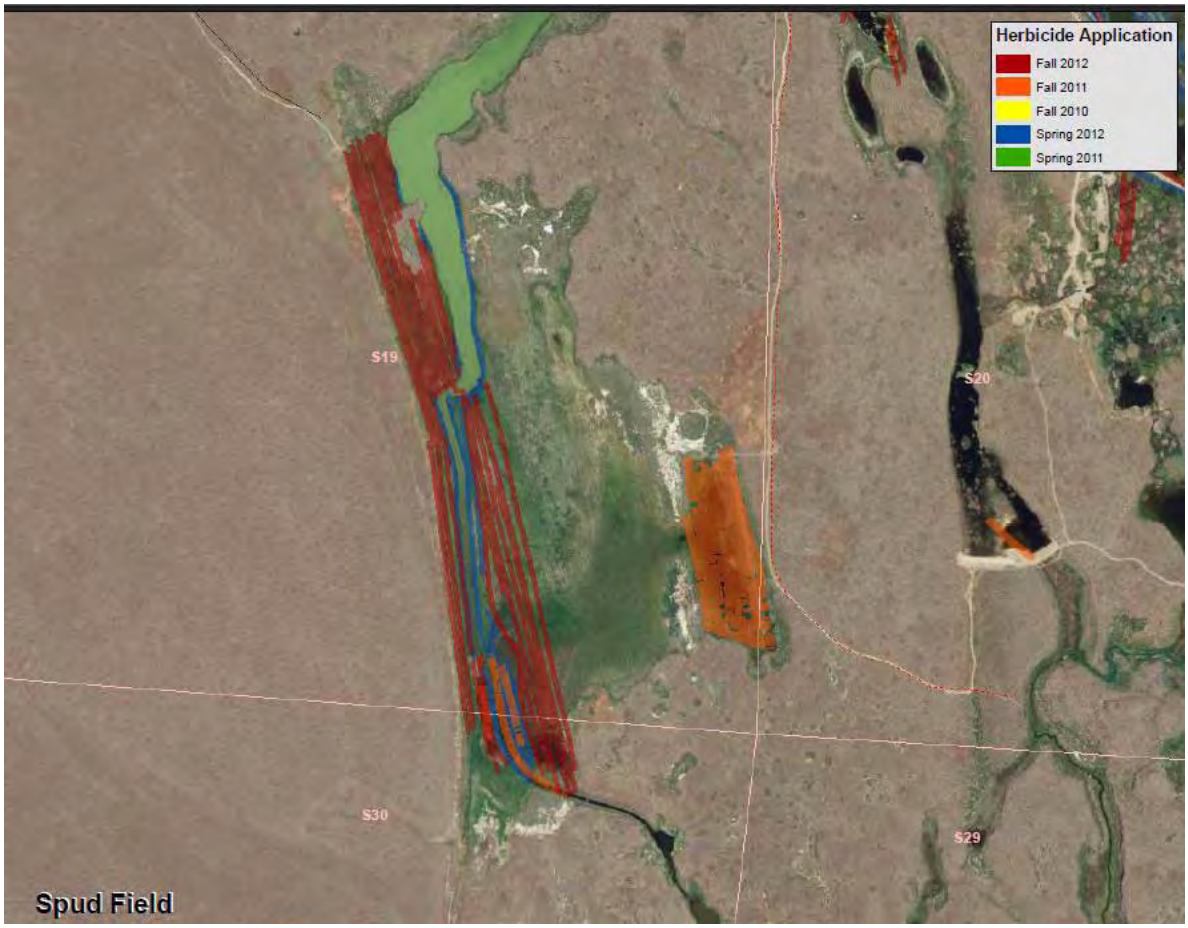


Figure 10. TD-02 (HARRIS PONDS) past herbicide applications to remove *Phragmites*.

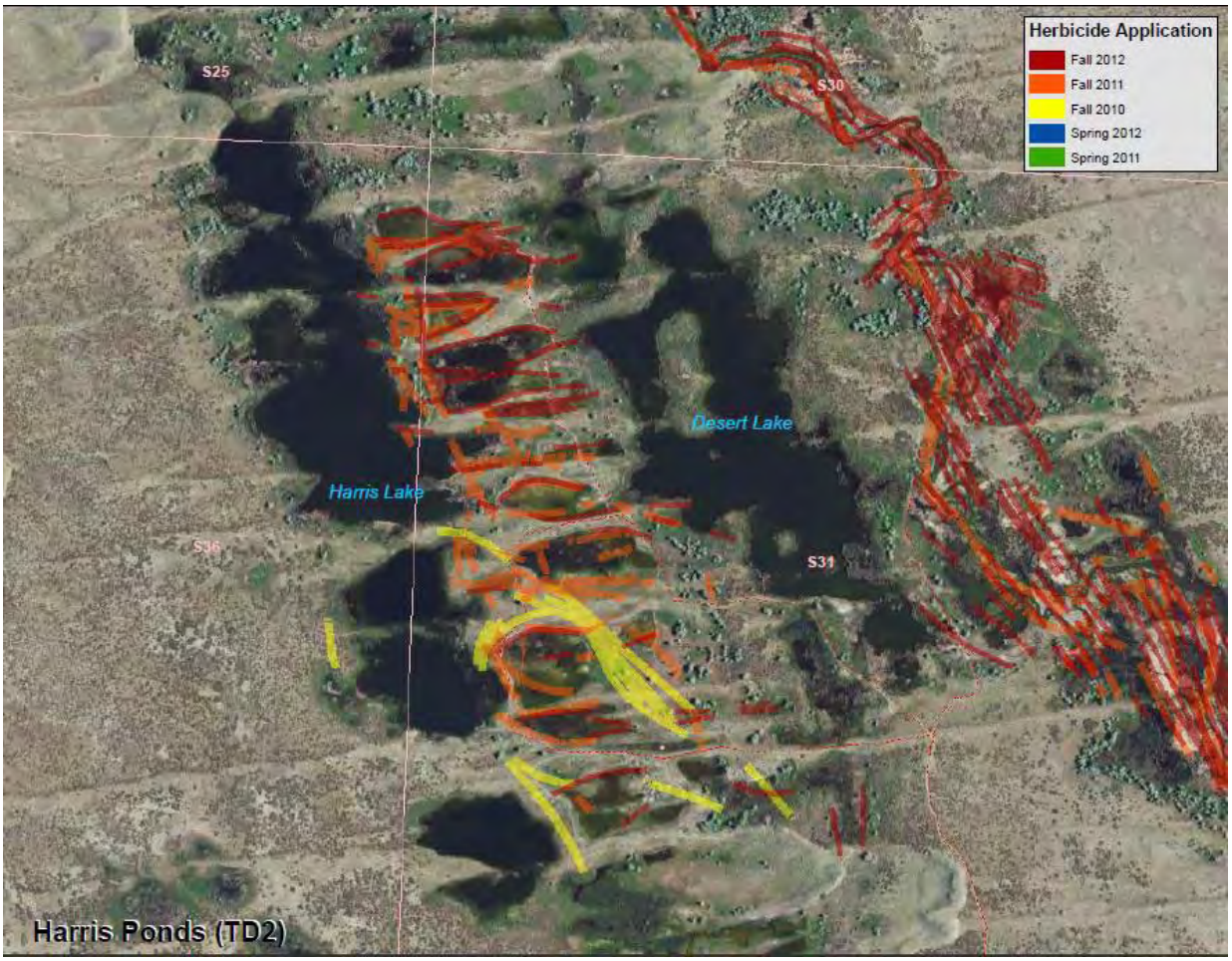
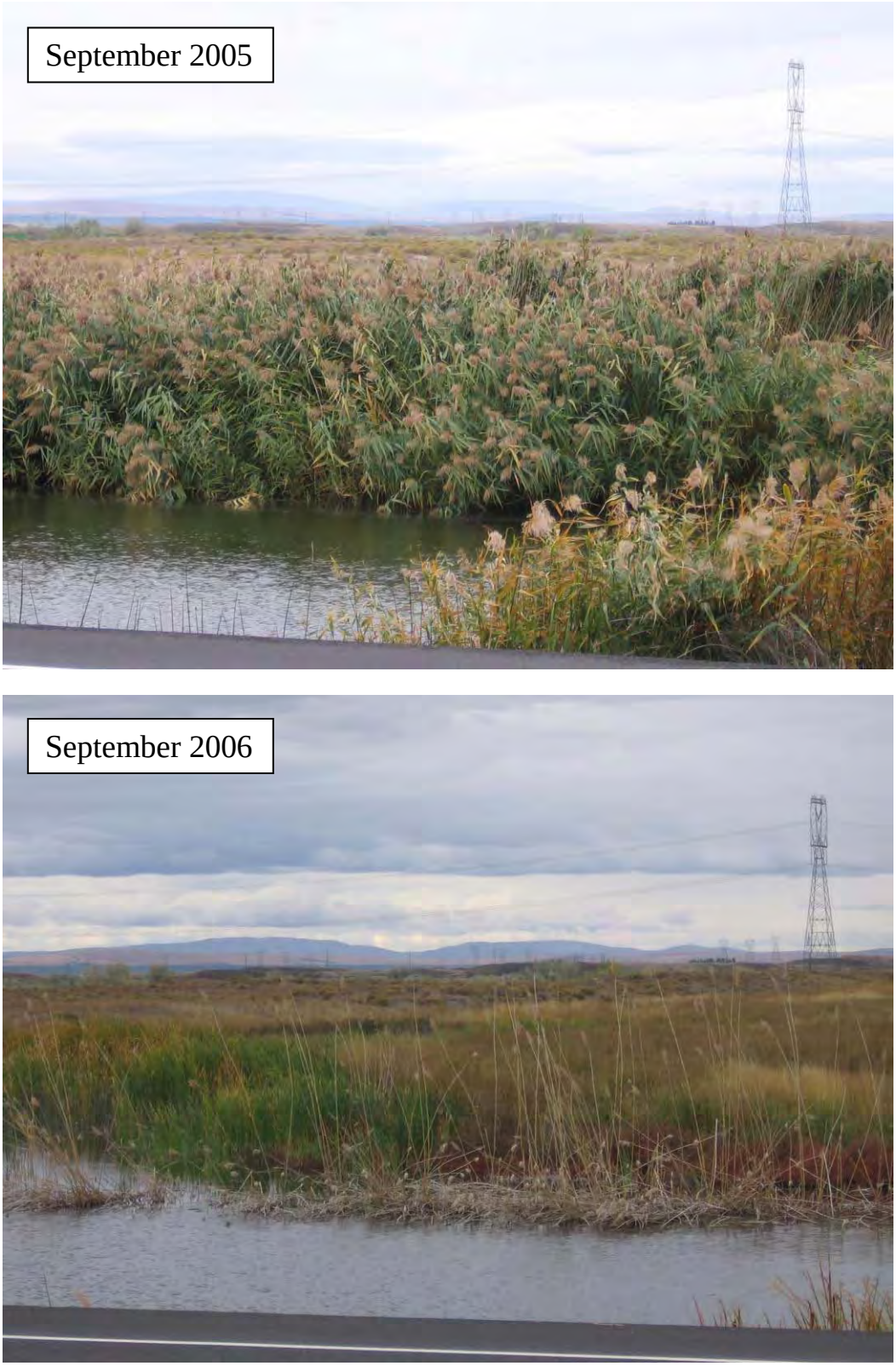


Figure 11. Winter wheat planting at Winchester Regulated Access Area. Pond in background. Unfortunately, seeding depth could not be controlled and the stand was patchy. Duck Stamp dollars funded a new grain drill with depth bands which should overcome this issue. Further, we allowed too much time to pass between disking and seeding and lost considerable moisture, which delayed germination until fall, allowing cheatgrass a competitive advantage. No evidence of Canada geese using the plot but mule deer have been using it heavily.

Figure 12. Before and after photographs of a *Phragmites* stand west of Dodson Road that was treated with glyphosate in September 2005, then burned in February 2006. These stands were only treated with herbicide once, whereas we plan to treat each stand twice to kill regrowth.



2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: 1/16/13
Contact: Daren Hauswald

1. Region: 5

2. County: Clark

3. Name of Area: Shillapoo Wildlife Area and adjacent county resource lands

4. Region Priority 1 (assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration X Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram): The Shillapoo Wildlife Area is adjacent to the city limits of Vancouver in the vicinity of Vancouver Lake. Satellite units referenced are distributed throughout Cowlitz and Clark County.

7. Current wetland acreage of project site: Shillapoo 796

8. Current upland acreage of project site: Shillapoo 1,545

9. If area is not owned by WDFW:
   a. Current ownership: WDFW/Clark County

   b. Zoning: Ag/Wildlife/Open Space/Park

   c. USGS Quad reference: Vancouver

   d. Habitat threats: Invasive species such as Reed Canary grass, Purple loosestrife, Yellow iris, Blue indigo bush, nutria and the potential for inadequate funding to maintain existing high value waterfowl habitats. A shift toward providing fish benefits may have effects on the quality of habitat for migratory game and diversity species.

   e. Public access: The wildlife area is open to public access. The county lands are also open to access however hunting is not permitted. Habitat quality on the county lands influences the quality of hunting on the wildlife area by helping to hold birds in the area.

10. Current function (attach additional sheets if necessary)

a. Primary use (breeding, migration, and/or wintering):

Primarily a wintering area for Canada Geese and Puddle Ducks including mallard, pintail, shoveler, and others. Wetland enhancements completed over the last two decades appear to have increased the breeding capacity here but this has not been quantified.

b. List species and numbers of waterfowl that use area:

This area is important to Canada geese (including the Dusky Canada goose), mallard, pintail, widgeon, wood ducks, as well as numerous other wetland dependent species. Canvasback, ring-necked duck, northern shoveler, teal, and gadwall are common species to the area. In recent years several hundred to a few thousand snow geese have also started wintering in the area. The site is part of a larger wintering area that supports up to 200,000 birds during peak periods.

c. List species and numbers of other migratory game bird species that use area:

Mourning doves nest on and use the area. A good estimate of their numbers is not available but could be easily estimated at several hundred during the early fall. We also occasionally have influxes of snipe which has caused excitement among a few hunters at times.

d. List species and numbers of other game or diversity species that use area:
(note all endangered, threatened, and sensitive species)

The Aleutian Canada goose, bald eagle, great blue heron, and numerous songbirds are all relatively common to the area. Species that commonly use the area during migration or wintering include Short-eared owls, Northern Harriers, Tundra Swans and Sandhill cranes. Anadromous fish including several listed stocks of salmon and steelhead migrate through the Columbia River and into Vancouver Lake.

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

The purpose of this proposal is to provide support for ongoing projects within the Shillapoo Wildlife Area, adjoining lands managed for waterfowl habitat, and potentially, to a lesser degree, smaller Wildlife Area satellite units; this includes providing support for volunteer activities directed toward improving waterfowl habitat and waterfowl hunting on the area. Some of these activities are not supported by our primary funding source (BPA) or are only partially supported. Future funding levels are subject to change. A funding reduction by BPA would impact our ability to continue to maintain and improve migratory bird habitat on the wildlife area. BPA specifically will not fund the items listed below that that are directed toward recreation. Some of the funding requested is needed to support survey work designed to track waterfowl response to habitat improvements that for a time was suspended due to funding cuts. A key feature of this project provides us the opportunity to support management of wetland habitat on the Clark County parcel adjacent to the Shillapoo wildlife area where past investments from the Migratory Bird Stamp Account helped with initial enhancement.

The project includes providing temporary labor and associated goods, services, and equipment on an annual basis to assist with:

- Managing upland pasture or cover crop areas for geese (mowing, seeding, or fertilizing)
- Maintaining waterfowl hunting blinds including two that are suitable for disabled persons
- Replacement or new construction of hunting blinds

- Operating, monitoring, and maintaining wetland water management features
- Continuing a Wood Duck nest box program on the wildlife area
- Maintaining and building duck nesting tubes on the Shillapoo Wildlife Area
- Providing nest boxes for some of the wildlife area satellite units in the region where appropriate.
- Removing unnecessary fences, weeds, and brush that detract from waterfowl habitat values
- Building new fences to improve pasture management in grazed areas
- Monitoring of winter waterfowl use in response to enhancements
- Monitoring waterfowl hunter distribution and success
- Support volunteers involved in similar projects.
- Potential implementation of a trial nutria control program

The monitoring of winter waterfowl use is intended to assess the relative value of different land management practices for waterfowl and to track changes as enhancement projects are implemented. With past grant funding, many of our blinds were repaired and several new ones were installed in an effort to redistribute effort and improve hunting opportunity and quality. Potential major wetland enhancements or reestablishment of fish access will make many of the current North Unit blind locations unusable, creating the need for new structures.

We are also considering seeking approval to implement a nutria control program utilizing baited traps on a trial basis. Nutria have been the principal cause of damage to water control structures on the wildlife area and may compete for food resources with native species. There are a number of hurdles that would have to be cleared prior to implementation. If such a project is approved, temporary employee time included in the project budget may be needed to implement such a program effectively.

b. Description of required maintenance and schedule:

The pasture management activities represent a continuation of a program supported by past migratory waterfowl stamp grants that resulted in at least 300 additional acres being suitable for use by wintering waterfowl and hunting. The improvements to existing waterfowl blinds has been a popular improvement with many hunters that would continue under this project. Existing nest boxes have been mapped and inventoried and these boxes need to be maintained on an annual basis. Additional boxes that would be placed will also need to be maintained. This project also supports the ongoing management of numerous moist soil management wetland basins that were initially developed with support from the migratory bird stamp fund. Funding for seed purchases also allows us the option of providing food plots in areas that otherwise would produce little feed during a given winter with the sites changing on an annual basis. The majority of the work described in this proposal is expected to occur from November 1 to April 30 each year and intermittently at other times.

c. Description of current water supply and water rights if applicable:

Water permits and supply have already been secured for the activities described above.

d. Benefits to migratory game birds and recreation (quantify benefits below):

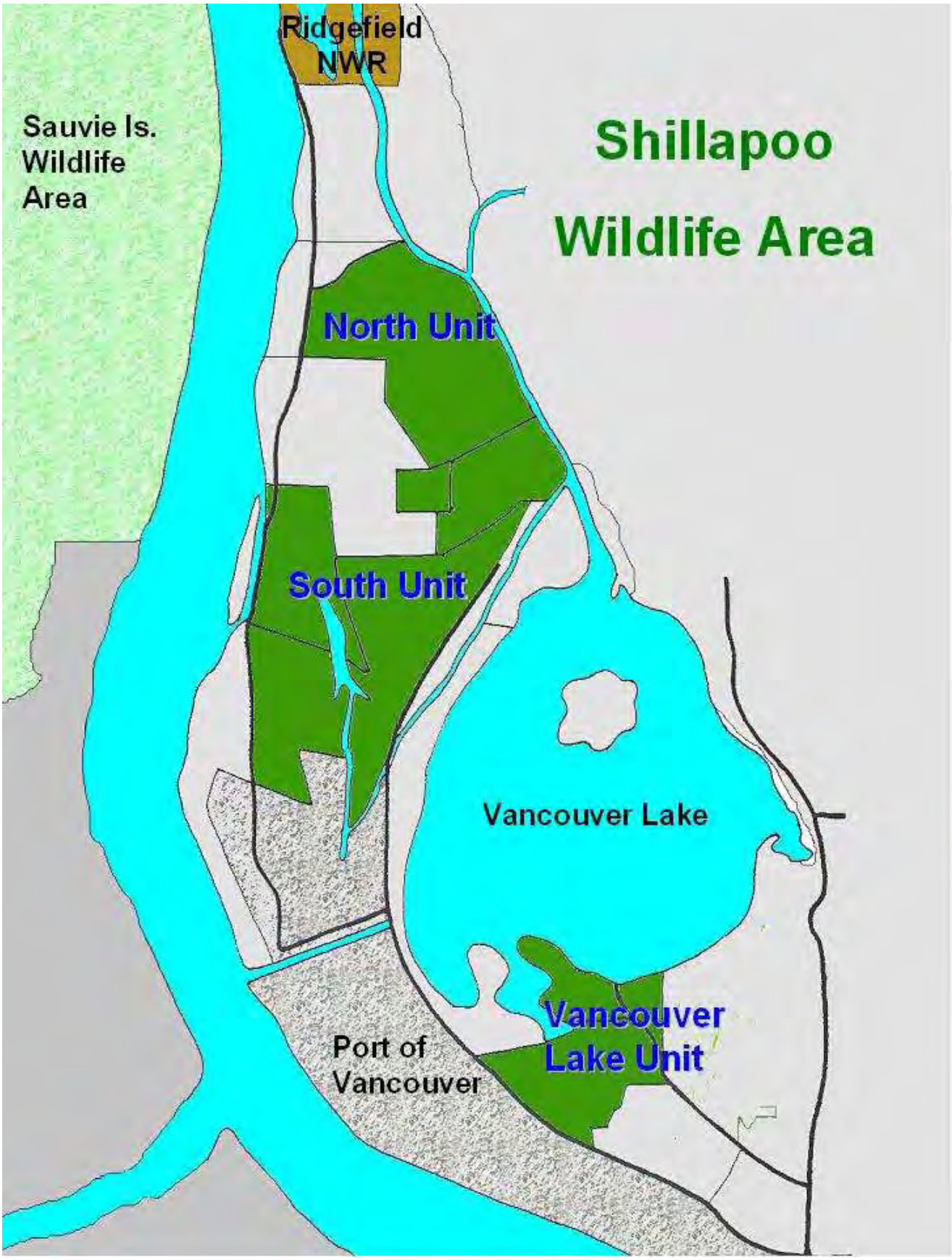
Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat		
*Pair, resting water	200 ac. (enhance and maintain)	
*Nesting cover	50 acres	
*Winter food resources	350 ac. (or more)	
*Hunting area	~1,000 acres improved	

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:

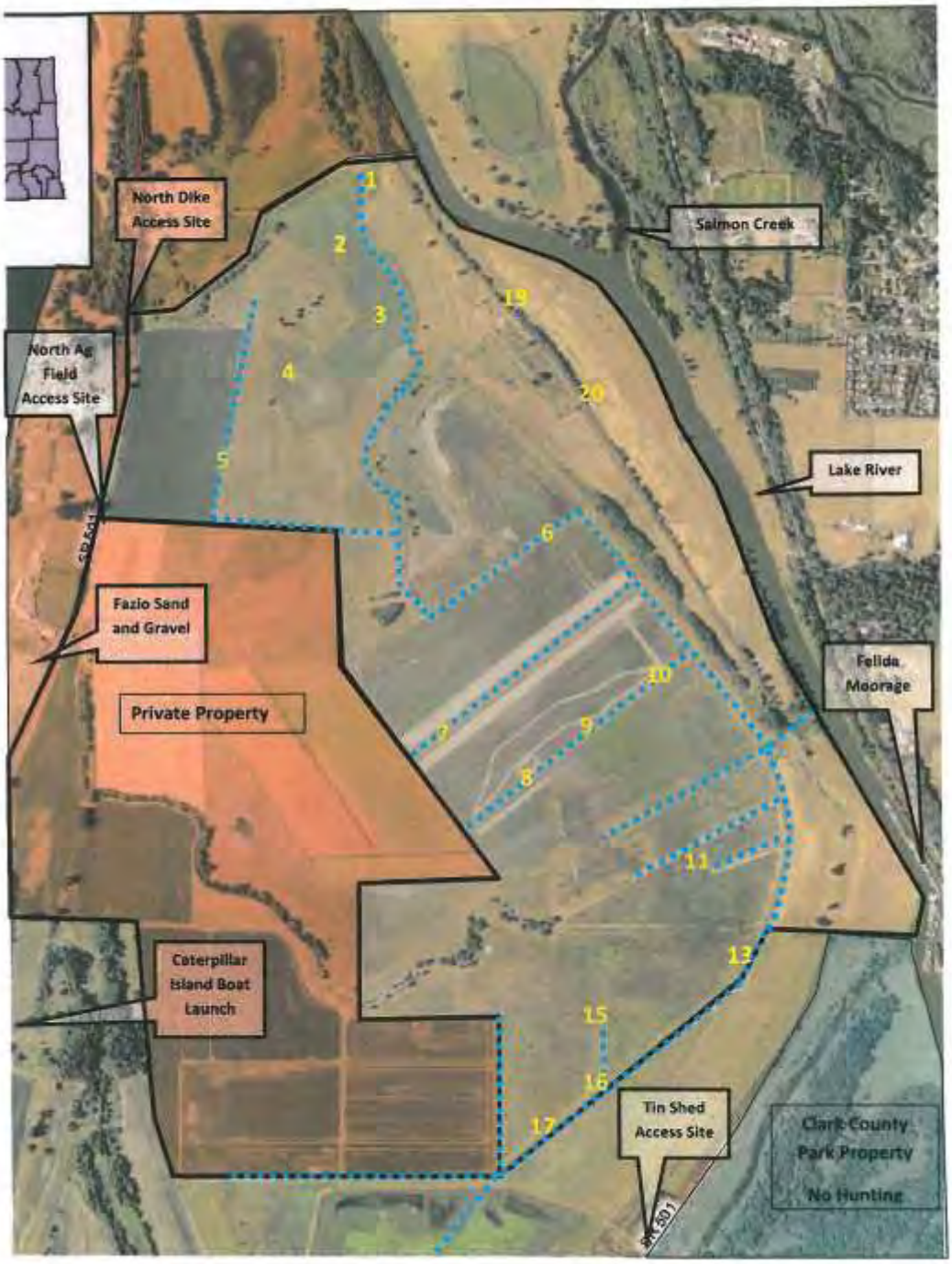
In the past, volunteers and employees funded though migratory bird stamp funds have collected field data in specific parts of the Wildlife Area on wintering waterfowl use to compare different management types (e.g., mowed vs. grazed pasture). Much of the past data collection was pre-enhancement and serves as a baseline for future monitoring. The availability of temporary employees helps assure that field data is reliable and collected on a consistent basis. The information could be used to track changes in waterfowl use when different practices are employed. For example, a substantial increase in waterfowl use from one year to the next was documented when reed canary grass was mowed in a wetland basin prior to it being flooded. The long term monitoring effort will also be able to identify changes as croplands are restored to wetland habitat as well as helping to identify responses to different wetland treatments such as disking, varied flooding regimes, and mowing. We have also begun to monitor plant stand composition of beneficial vs. undesirable plants within moist soil units, which may enable us to draw some correlation between what we perceive to be improvements in habitat quality and actual use by the target wildlife species. Similar tracking may also be able to show waterfowl response to upland pasture rehabilitation, crop types, or other measures.

2. Cost Estimate (**Annual Costs**)

		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET			
OPERATING BUDGET			
A/B	Salaries/Benefits	$25,000	$25,000
C	Personal Services		
E	Goods and Services	$10,000	$10,000
G	Travel		
J/K	Equipment		
N	Grants		
Other			
TOTAL COST		$35,000	$35,000
Est. Annual Costs after June 30, 2015: $20,000 to $40,000 depending upon funding levels from other sources			


Ridgefield NWR
Sauvie Is. Wildlife Area
Shillapoo Wildlife Area
North Unit
South Unit
Vancouver Lake
Vancouver Lake Unit
Port of Vancouver

Shillapoo Wildlife Area North Unit



Unit Boundary

Drainage Ditch

Numbers indicate hunting blind locations

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: 1/23/2013
Contact: Kyle Guzlas

1. **Region: 6**

2. **County: Grays Harbor**

3. **Name of Area: Chehalis Wildlife Area Unit**

4. **Region Priority___1_____(assigned by Regional Wildlife Program Manager)**

5. **Enhancement/Restoration _X_ Acquisition _____(check one or both)**

6. **Location of project site (attach map, aerial photo, and/or diagram): maps attached**

7. **Current wetland acreage of project site: 450**

8. **Current upland acreage of project site: 300**

9. **Current function (attach additional sheets if necessary)**
   a. **Primary use (breeding, migration, and/or wintering):**
   The site provides breeding, nesting, and migrating habitat for numerous priority waterfowl species. The following tables display species use in the Lower Chehalis and Grays Harbor area.

HIGH PRIORITY SPECIES	BREEDING	WINTERING	MIGRATION
1. Dusky Canada Goose		X	X
2. Tule Greater White-fronted Go		X	X
3. Cackling Canada Goose		X	X
4. Greater Scaup	X	X	X
5. Lesser Scaup	X	X	X
6. Mallard	X	X	X

7. Northern Pintail	**X**	**X**	**X**

OTHER PRIORITY SPECIES	BREEDING	WINTERING	MIGRATION
1. Ring-necked Duck		**X**	**X**
2. Wood Duck	**X**	**X**	
3. American Wigeon		**X**	**X**
4. Pacific Greater White-fronted Goos		**X**	**X**

OTHER WATERFOWL	BREEDING	WINTERING	MIGRATION
1. Bufflehead		**X**	**X**
2. Western Goose		**X**	**X**
3. Common Goldeneye		**X**	**X**
4. Gadwall		**X**	**X**
5. Green-winged Teal		**X**	**X**
7. Hooded Merganser	**X**	**X**	**X**
8. Redbreasted Merganser		**X**	**X**

b. List species and numbers of waterfowl that use area:

The following table displays the waterfowl usage by species within the general vicinity of the project including the project lands.

SPECIES	BREEDING	WINTERING	MIGRATION
1. Dusky Canada Goose	**40**	**40-250**	**> 10,000**
2. Tule Greater White-fronted Goose	**150**	**75**	
3. Cackling Canada Goose	**800**	**500**	
4. Greater Scaup	**75**	**150**	
5. Lesser Scaup	**100**	**150**	
6. Mallard	**3500**	**> 10,000**	
7. Northern Pintail	**2000**	**> 8,000**	
8. Ring-necked Duck	**210**	**250**	**300**
9. Wood Duck	**35**	**X**	
10. American Wigeon	**4000**	**> 11,000**	**> 80,000**
11. Pacific Greater White-fronted Goose	**25**	**> 100**	**> 1,000**
12. Bufflehead	**200**	**150**	
13. Canada Goose	**300**	**> 10,000**	**> 120,000**
14. Common Goldeneye	**45**	**125**	
15. Gadwall	**25**	**X**	
16. Green-winged Teal	**1500**	**2,000**	**> 8,000**
18. Hooded Merganser	**30**	**75**	
19. Redbreasted Merganser	**50**	**75**	

c. List species and numbers of other migratory game bird species that use area:

The lower Chehalis River and associated wetlands are used by numerous migratory birds each year. Species that will benefit most from this project from are the Northern harrier, Sand hill crane, Black-bellied plover, Whimbrel, Marbled Godwit, Red knot, dunlin, Short-billed dowitcher, Short-eared owl, Northern rough-winged swallow,

and the Marsh wren.

d. List species and numbers of other game or diversity species that use area:

(note all endangered, threatened, and sensitive species)
Trumpeter (275) and Tundra (30-40) Swans
Bittern
Mink
Red-tailed Hawk

Federal Listings
Bull Trout, Threatened, found in Grays Harbor and tributaries and shoreline, will benefit from protected riparian areas and creeks and sloughs flowing through project area
State Listings
Vauxs Swift, State Candidate, feeding and breeding
Olympic Mudminnow, State Sensitive species, project sites include considerable habitat for this endemic species
Columbia Torrent salamander, State Candidate species
Dunns salamander, State Candidate species
Van Dykes salamander, State Candidate species
Other Species of State Concern: **Newcomb's Littorine Snail, River Lamprey**

10. **Project Description (attach additional sheets if necessary)**

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

The wildlife area is funded exclusively with migratory bird stamp funds. This is part of the ongoing commitment to this duck stamp funded acquisition. Increased use has been directed as this area as adjacent private lands that are all now leased and this remains one of the only public access sites in the Valley. In 2011, WDFW acquired an additional 110 acres on the south border of the Chehalis Wildlife Area. The "Osgood Acquisition" connects the wetlands of the Newman Creek and Vance Creek corridors with the main stem of the Chehalis River. In 2012, this site has already provided consistent quality waterfowl hunting, with a shorter walk-in access point. Wildlife Area staff constructed an access parking area with an informational kiosk prior to the 2012 waterfowl opener. Additional mowing was completed on the new acquisition to provide expansive sheetwater habitat. Pictures of this new site are included in the attached exhibits.

The majority of funds are for mowing of fields for winter waterfowl use. Canary grass fields are mowed to allow open water areas. Other management techniques include spraying and disking wet swales (if dry enough in the summer to complete this activity). Management actions currently occur on approximately 165 acres within the 500+ acres of wetland present on the site.

b. Description of required maintenance and schedule:

Fields are mowed in late summer (August/September) to promote sheet water habitat. All field work will occur during this time. Each of the hunter access roads are maintained to ensure public access as well as the parking facilities.

c. Description of current water supply and water rights if applicable:

Project is within the Lower Chehalis River Floodplain

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat		
*Pair, resting water	80	80
*Nesting cover		
*Winter food resources	180	
*Hunting area	220	

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:

The area is surveyed as part of breeding waterfowl section surveys as well as part of midwinter inventory. Existing management has increased breeding pair numbers on the wildlife area. These funds will allow continuation of these practices.

11. Cost Estimate (Annual Costs)

		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET			
OPERATING BUDGET		12,000	12,000
A/B	Salaries/Benefits	9,500	9,500
C	Personal Services		
E	Goods and Services	4,500	4,500
G	Travel		
J/K	Equipment		
N	Grants		
Other			
TOTAL COST		**14,000**	**14,000**
Est. Annual Costs after June 30, 2015: $14,000/yr			

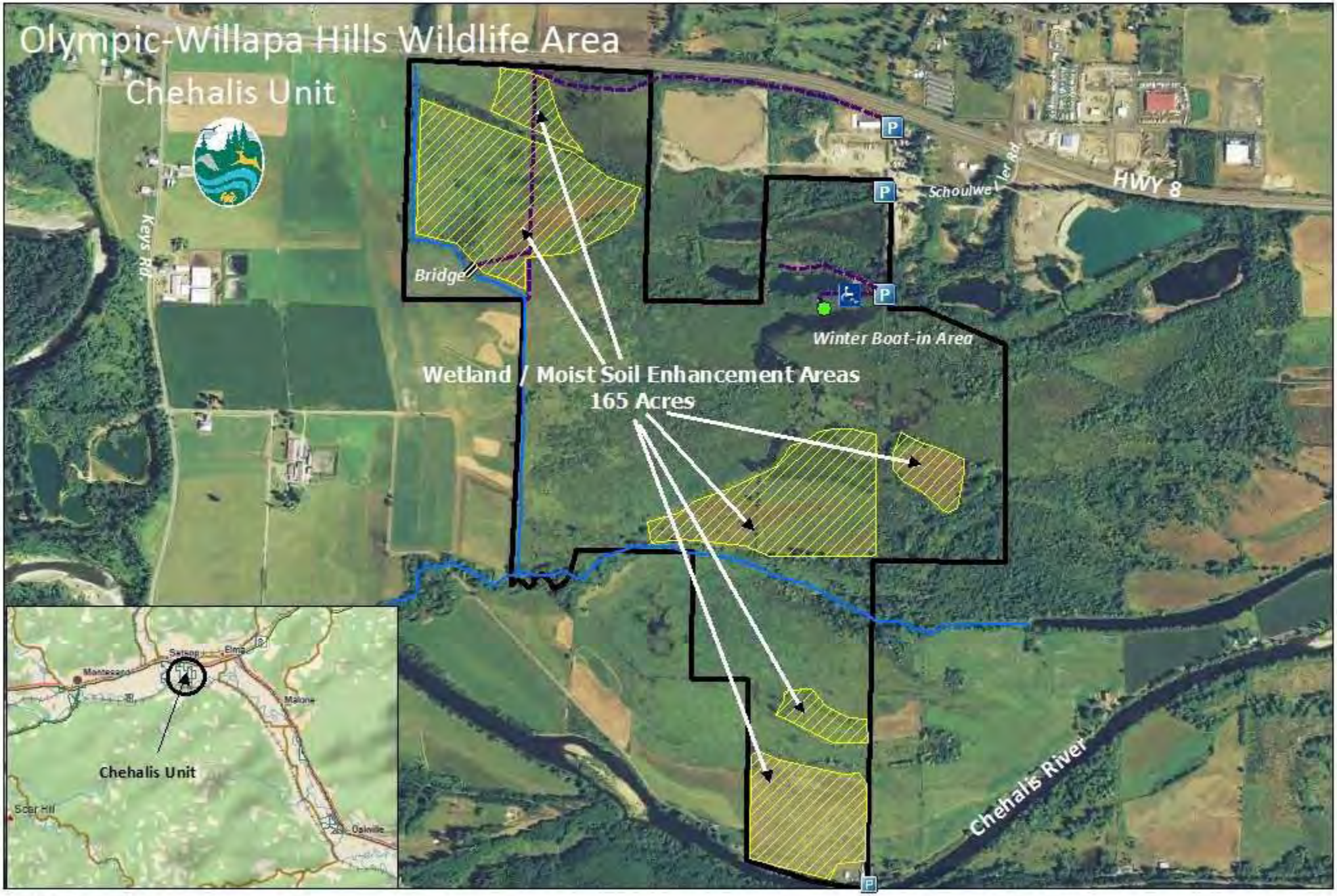
Olympic/Willapa Hills Wildlife Area
Chehalis Unit

PROJECT LOCATION MAP

N
W E
S

0 12.5 25 Miles

For general use only - map displays approximate ownership boundaries - Respect Private Property



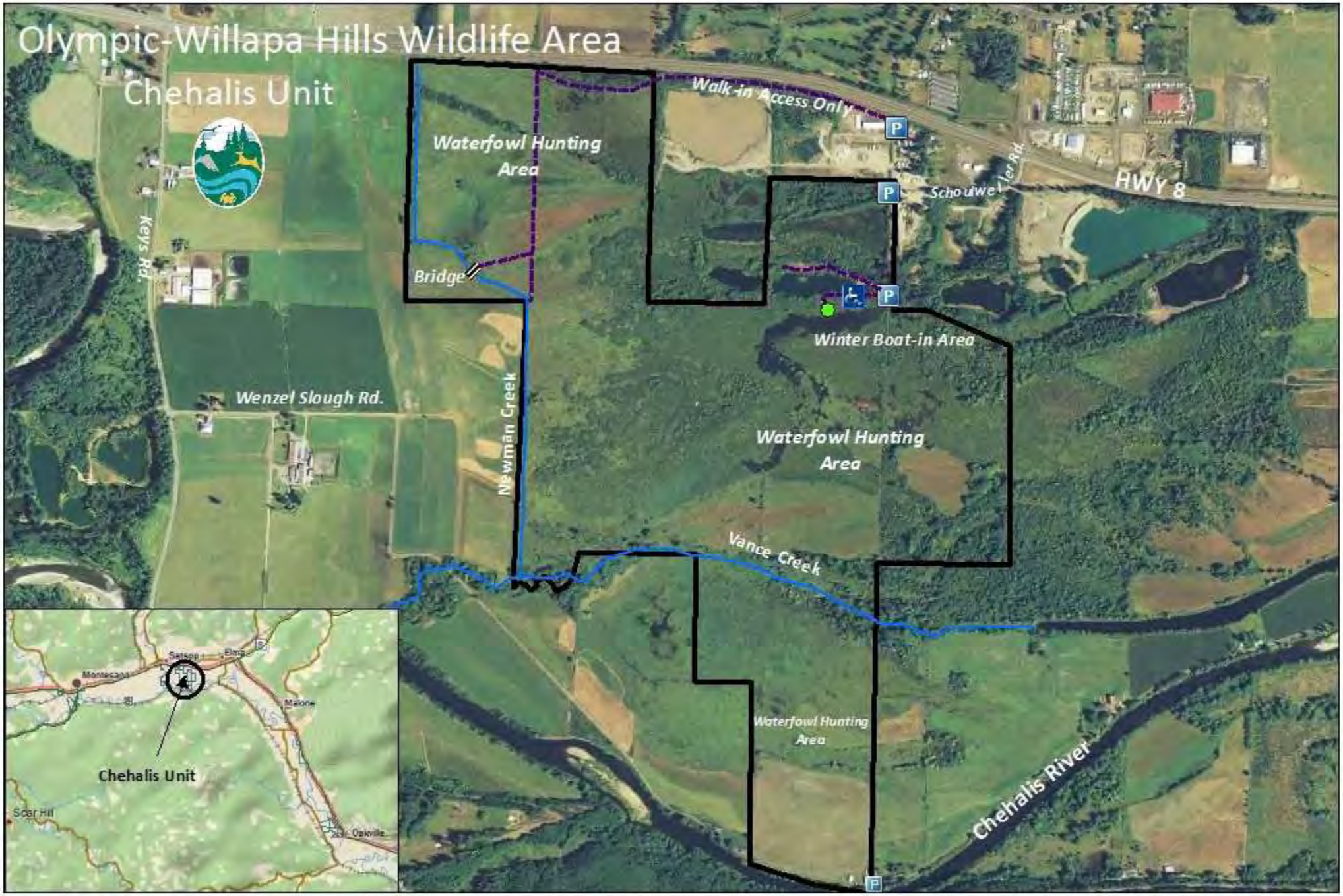
Legend

Chehalis Unit — Trail — Wetland / Moist Soil Enhancement

Parking Area — ADA Hunting Blind

0 0.25 0.5 Miles

N


Olympic-Willapa Hills Wildlife Area
Chehalis Unit
Walk-in Access Only
Waterfowl Hunting Area
Schouweiler Rd.
HWY 8
Keys Rd.
Bridge
Winter Boat-in Area
Wenzel Slough Rd.
Newman Creek
Waterfowl Hunting Area
Vance Creek
Waterfowl Hunting Area
Chehalis River
Chehalis Unit
Legend
Chehalis Unit
Trail
Parking Area
ADA Hunting Blind
0
0.375
0.75 Miles
N

CHEHALIS RIVER UNIT - 640 acres

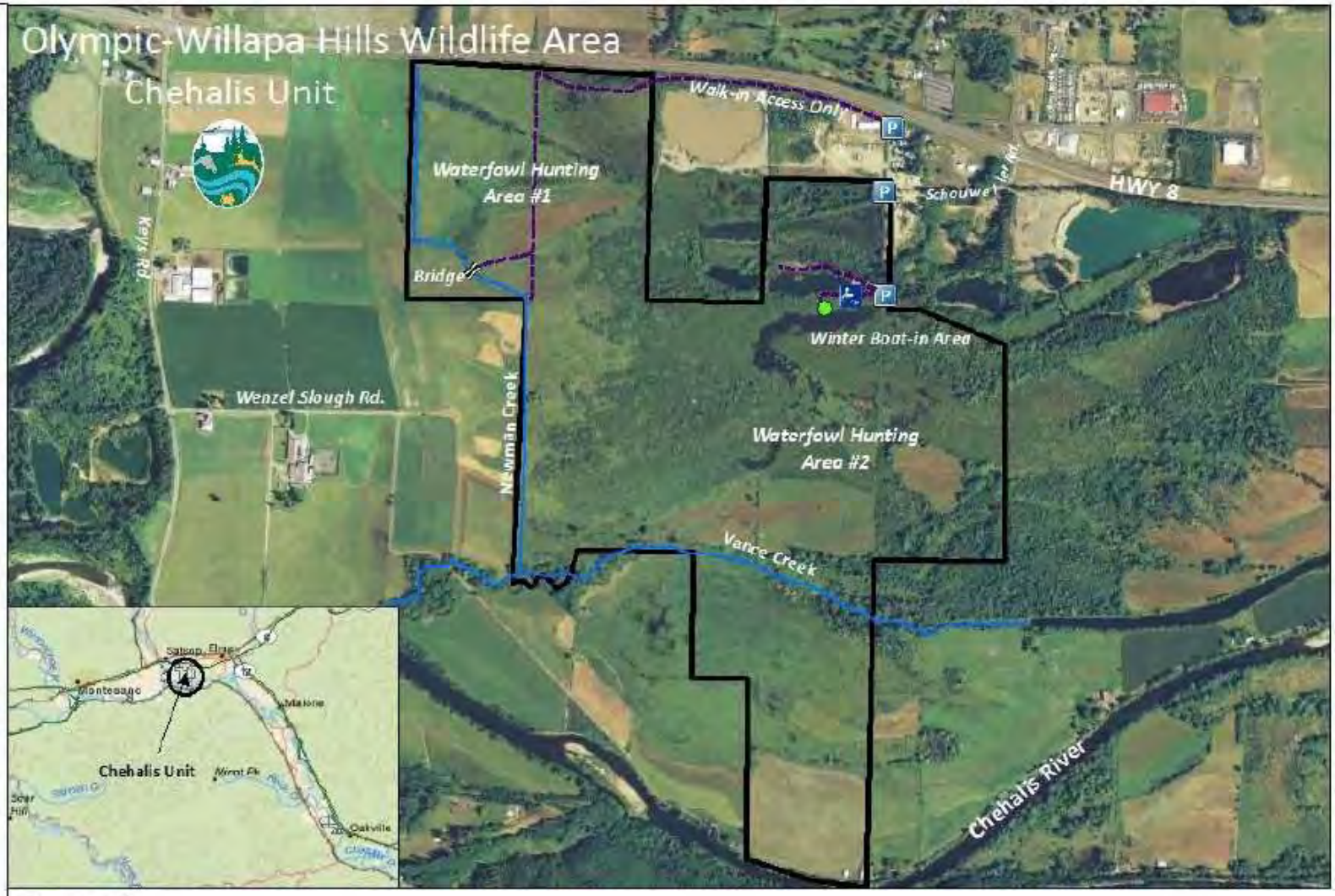
The Chehalis unit is approximately 600 acres located southwest of Elma. This unit is maintained for waterfowl habitat and associated recreation. The Lower Chehalis Valley winters between 5,000-20,000 ducks and geese. This farmland area is linked to the wintering waterfowl of Grays Harbor estuary, with 50,000 ducks and geese utilizing the area for feeding. Most of the land owned by WDFW is open wetland, riparian shrub habitat, or meadow/field habitat. From Montesano, drive East on Hwy 12 7.7 miles to Schoulweller road. From Elma, drive west on Hwy 12 2.1 miles to Schoulweller road. Several options are present for parking to access the wildlife area. To access "Waterfowl Area #1" park at the north end of Shoulweller Rd. and walk over sand pile and down the gravel road adjacent to Hwy 8. "Waterfowl Area #2" is generally accessed by boat during the waterfowl season. The first gate at the end of Shoulweller is left open to allow for easier boat deployment.

Scouting Report

Dabbling Ducks:
Moderate to high numbers of mallards, wigeon, pintail, green-winged teal, and shovelers

Diving Ducks:
Low numbers of bufflehead, goldeneye, and hooded mergansers

Geese:
Low to moderate numbers of Canada Geese throughout the season

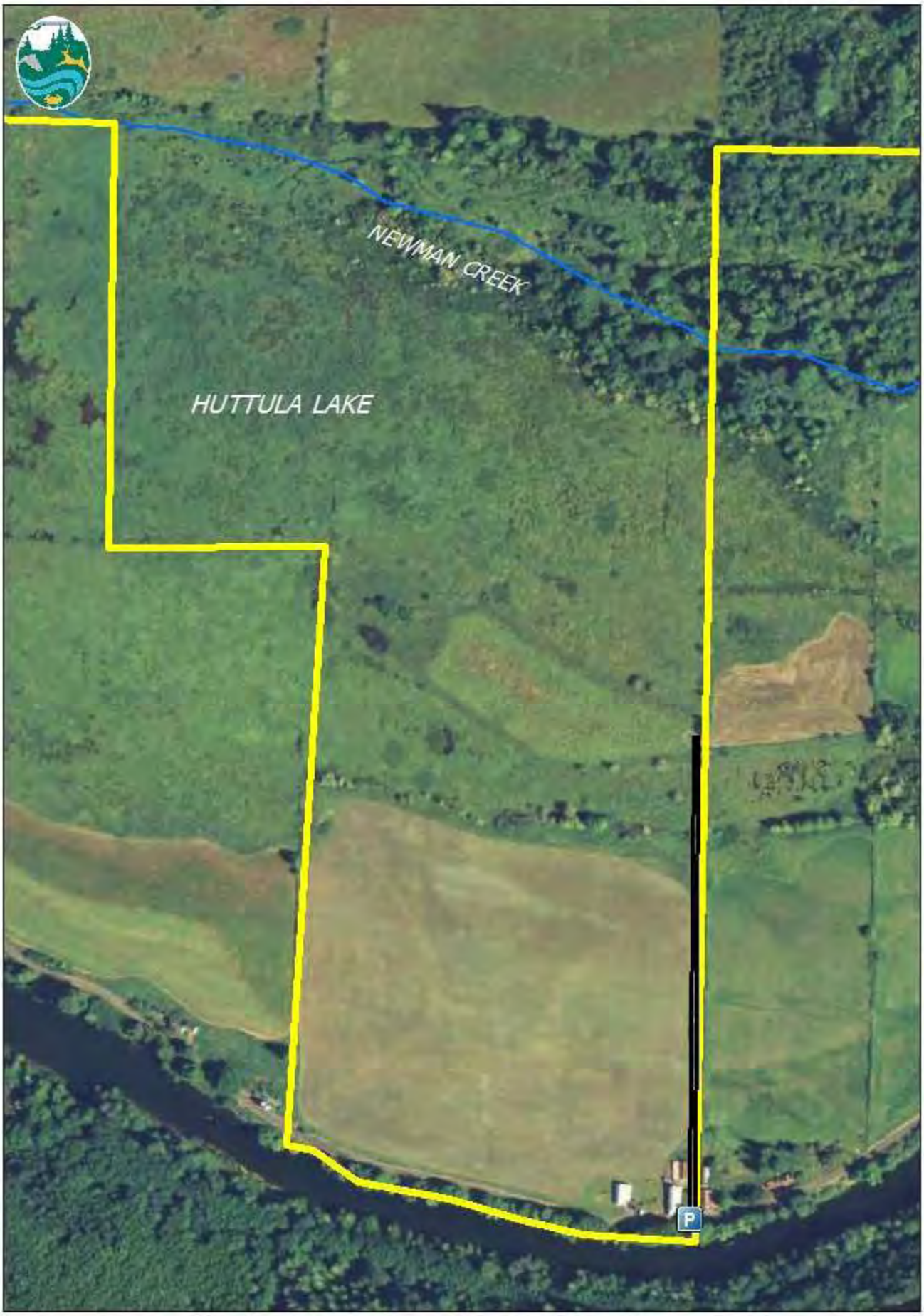


Legend

Chehalis Unit — Trail

Parking Area — ADA Hunting Blind

0 — 0.375 — 0.75 Miles



Legend

WDFW Property Boundary

Parking Area

Field Access Road

Osgood Quality Hunt Unit

0 250 500 1,000 Feet

N

Figure 1. Chehalis Wildlife Area Unit, Osgood Parking Facility

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date:
Contact:

1. Region: 4

2. County: Snohomish

3. Name of Area: Boe Road Snow Goose Reserve

4. Region Priority_____(assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration X_____ Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram): See attached.

7. Current wetland acreage of project site: 0

8. Current upland acreage of project site: 181

9. If area is not owned by WDFW:
   a. Current ownership: Stuart Lervick

   b. Zoning: Open Space Ag RCW 84.34

   c. USGS Quad reference: SEC 01 TWP 31 RGE 03 RT-1 GOVT LTS 1,2,3 & 4

   d. Habitat threats: Conversion to farm crops that do not benefit geese.

e. Public access: The proposed project is on private property and, pending funding, will continue to be managed as reserve with no public access. Public viewing is available to the north, from Boe Road and from the dike to the west

10. Current function (attach additional sheets if necessary)
    a. Primary use (breeding, migration, and/or wintering):

This property provides quality winter forage and idling habitat for a wide variety of waterfowl species on private land on Florence Island, Snohomish County. Mr. Lervick has provided a cover crop for snow geese since the inception of WDFW's current snow goose program. The site has received Duck Stamp funds for this purpose in the past. This has been a highly effective strategy for attracting snow geese to the site, which has mitigated crop damage to adjacent properties and benefitted hunting on nearby adjacent properties, including lands enrolled in

WDFWs Snow Goose Quality Hunt program. For these reasons, Region 4 staff has a strong desire to continue this partnership. The site is used primarily as a reserve for wintering snow geese and provides feeding and resting habitat for thousands of geese that are found in the area, offering them a respite from hunting among the nearby and adjacent fields where hunting occurs. Foraging habitat for geese when they first arrive on the wintering grounds, and throughout the winter season is provided by this property. Data from an ongoing snow goose research project demonstrate that this site is a critical stop over area in the early fall for snow geese and Canada geese migrating through the North Puget Sound to wintering areas further south.

Public viewing offered from Boe Road provides a quality experience for bird watchers who come to view the geese.

If WDFW does not continue to pay for the cover crop on these 181 acres, the landowner will likely lease the property for other agricultural uses. There is also the potential that the property could be opened to hunting, similar to the program in place on the north side of Boe road. This action would eliminate the only reserve available to geese in the Stillaguamish Delta, reducing viewing opportunities for the public and eliminating the site as a resting and foraging place for the geese.

b. List species and numbers of waterfowl that use area:
5,000 American widgeon; 250 mallards; 100 Canada geese, 100 white-fronted geese, 10,000 to 50,000 snow geese.

c. List species and numbers of other migratory game bird species that use area:
10-50 Wilson's snipe, 50 band-tailed pigeons.

d. List species and numbers of other game or diversity species that use area:
(note all endangered, threatened, and sensitive species)
20 or more bald eagles (state sensitive); 10,000 dunlin; 2,000 least sandpipers; several peregrine falcons, northern harriers, barn owls, snowy owls, short-eared owls; 50 trumpeter swans; 20 killdeer, 100 great blue herons (a breeding site is nearby), 100 dowitchers, 100 greater and lesser yellowlegs.

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

A green chop cover crop will be planted, with a target date of September 1, 2013. The snow goose forage and respite area will remain closed to hunting and available to geese from October 1 through April 30, 2013 and 2014. WDFW staff will have access to the site at all times.

b. Description of required maintenance and schedule:

Landowner will maintain vegetative cover crops that are beneficial and attractive to snow geese. Planting will be completed by September 1 of each year. Landowner will be responsible for establishing and maintaining the crop.

c. Description of current water supply and water rights if applicable: NA

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for	Projected acreage increase for

	waterfowl	other migratory game birds
*Brood habitat		
*Pair, resting water		
*Nesting cover		
*Winter food resources	181	181
*Hunting area		

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:

WDFW biologists have verified that snow geese have used the site every year since the winter of 2006/2007. WDFW currently has a snow goose marking and radio-tracking project underway and the site is an integral part of this project. As a part of that project, this site will continue to be monitored, enhancing our understanding of resource selection of Wrangel Island snow geese wintering in the North Puget Sound. If the snow goose research project continues during the winter of 2013/2014, this site will serve as a potential capture site for the WDFW staff working on the project.

The quality of the 2012 crop was slightly degraded compared to previous years. The proposed planting plans for 2013 and 2014 will greatly enhance the current conditions by increasing the yield, and therefore the quality of the forage available to snow geese and other species that utilize the site.

2. Cost Estimate (**Annual Costs**) $40/acre x 181 acres.

		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET			
OPERATING BUDGET			
A/B	Salaries/Benefits		
C	Personal Services		
E	Goods and Services	$10,860	$10,860
G	Travel		
J/K	Equipment		
N	Grants		
Other			
TOTAL COST			
Est. Annual Costs after June 30, 2015: $10,860/year			

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My Notes

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Population Assessment, Delineation, and Habitat Use of Wrangel Island Snow Geese

Principal Investigator:

Don Kraege
Washington Department of Fish and Wildlife
don.kraege@dfw.wa.gov
(360) 902-2522

Project Collaborators:

Dr. Christian Grue and Vasiliy Baranyuk
WA Cooperative Fish and Wildlife Research Unit
University of Washington
cgrue@u.washington.edu / baranyuk@uw.edu
(206) 619-2816

Proposal Category:
Request for Funding and Endorsement

Proposal Request: $30,000 FY13

March 7, 2013

Problem/Issue Statement:
With recent increases in the size of the population of Wrangel Island snow geese (WISG) on the breeding grounds, there are concerns about the adequacy of current knowledge regarding delineation within the Pacific Flyway and winter abundance in the Skagit-Fraser wintering area. This proposal addresses the following information needs for WISG contained in the Arctic Goose Joint Venture strategic plan:

- Population Definition or Delineation (Medium Priority)
- Population Status or Assessment (High Priority)

In addition, it addresses the strategic plan focus area: Status Assessment and Population Dynamics of Snow and Ross's Geese.

AGJV Population(s) Targeted: Wrangel Island Snow Goose (WISG)

Justification: Since the mid-1990s, growth of the Skagit-Fraser flock of WISG has provided expanded recreational opportunities and economic benefits to communities in the Skagit-Fraser delta areas of Washington and British Columbia. At the same time, growth of this population has increased the potential for agricultural depredation and, at times, been a source of tension in the communities. With the resources available, managers have been able to implement strategies to address these issues in a mostly "reactive" manner. In addressing the objectives below, agencies can be more "proactive" by applying this information to: 1) continue to refine a more comprehensive method of estimating the flock, which represents the largest wintering concentration of WISG in the world; 2) manage lands to provide appropriate quantities of winter habitat and recreational opportunities; 3) continue to identify important migration areas for this flock. It is equally important that agencies and the Pacific Flyway Council develop a better understanding of snow goose distribution, demography, and habitat use as this population changes so decision making for implementation of the Pacific Flyway harvest strategy for this flock remains well informed.

Objectives or Hypotheses:
The project is intended to address the following objectives and questions regarding the wintering population of WISG in the Skagit-Fraser area:

OBJECTIVE 1: Document current population size.

1. Is the population survey methodology developed during the 2012-13 season sustainable and able to produce variance estimates?
2. What changes to survey methodology, if any, should be implemented in the future?

OBJECTIVE 2: Evaluate current distribution, site fidelity, and habitat use.

1. What is the current distribution of the Skagit-Fraser flock?
2. How has the distribution changed over the years?
3. How much interchange occurs among subgroups in the flock?
4. Do individual geese have fidelity to specific areas within one winter and among years?
5. Do sub-adults and adults behave similarly, or are distribution and interchange patterns different between these cohorts?
6. What food resources are being selected and utilized compared to availability?
7. What food resources are not selected and utilized?

OBJECTIVE 3: Examine the relationship of the Skagit-Fraser flock to other flyway use areas.

1. When do geese depart and return to Skagit-Fraser during spring and fall migration?
2. Where are important flyway use areas during migration?
3. When and how long do geese use areas along migration routes?
4. Do some geese that use Skagit-Fraser move to other locations within the flyway during the same winter or among different years?
5. If Skagit-Fraser geese are moving to other locations, what is the timing of emigration and potential return to Skagit-Fraser?

Scope and Location: The project activities will occur within the Skagit-Fraser area of Washington State and British Columbia (see figure below), but data will be collected from throughout the range of the northern flock of WISG in the Pacific Flyway.

Experimental Design: The project is designed to address the project objectives and associated study questions as follows:

OBJECTIVE 1: Document current population size.

Methods

In 2012-13, WDFW and EC each flew three separate surveys to estimate the wintering flock of WISG on the Skagit-Fraser deltas. WDFW surveys produced comparable results to past EC surveys. In 2013-14, WDFW will continue to refine new photo count methodology to encompass the entire known distribution of Skagit-Fraser flock of WISG, including the Fraser Valley. As in 2012-13, transects through available habitat will be surveyed contiguously from south to north along fixed lines. When a flock is identified the aircraft will break from the transect line to circle the flock to obtain location data, digital images for flock

counts (adults, sub-adults, total. Once these data have been acquired, the aircraft will resume flight along the transect line.

Data Analysis

Population estimates will be calculated by summing the total counts of all flocks encountered by cohort (adults, sub-adults, total). Estimates of variance will be calculated from the flock photo count information. In 2013-14, WDFW will investigate the use of computer-assisted image recognition software (e.g. ARC-GIS feature analyst) to improve photo interpretation efficiency.

OBJECTIVE 2: Evaluate current distribution, site fidelity, and habitat use.

Methods

Although substantial progress was made on this objective during 2012-13, additional subflock and collar location information can be obtained from existing neck collars and satellite transmitters applied in 2012-13. This will provide better information on inter-annual variation of distribution and habitat use. The study area will be broken into three separate zones with a driving survey route within each zone:

1. Northern Skagit County
2. Southern Skagit and northern Snohomish Counties
3. Southern Snohomish County.

Driving survey routes within each zone will be developed in such a way that they can be surveyed over roughly half a day. Each route will be designed to be surveyed as a loop. There will be 24 evenly spaced reference points across the linear distances of each respective route. For each scheduled survey day, driving survey routes within two zones will surveyed (e.g. Route 1 = zones 1 and 2; Route 2 = zones 2 and 3; Route 3 = zones 1 and 3).

Three to four surveys will be conducted over each 7 day period (week) through the end of April, 2014. This will result in approximately 67 total surveys for each of the three survey routers. To reduce bias associated with time of day and day of week, the days to survey each route (during a given week) will be randomly selected, as will the starting point (randomly selecting from the set of 24 reference points for each route, each survey). Direction of travel on the route will be randomly selected from (1) north to south, or (2) south to north.

The survey vehicle will be equipped with a laptop computer running the mapping software (i.e. nRoute), which will have respective routes and starting reference points visually displayed. The laptop will be interfaced with a GPS which nRoute will use to log vehicle track, and provide a visual reference of location along the route. During the survey, the biologist will visually scan for snow geese. When snow geese are encountered the following information will be collected:

- Location of center of flock (can be derived from nRoute software from location of vehicle, compass bearing and distance from vehicle to flock (using rangefinder or two vehicle/compass bearing reference points).
- Estimated flock size and age composition

- Flock behavior (e.g. resting, preening, foraging, flying)
- Neck collared marked geese observed
- Current crop status
- Social status of marked birds (e.g. pairs, family groups, etc.)

After each encounter is completed, the survey will continue until the respective route is completed.

Data Analysis

Data collected from aerial and ground-based surveys will be used to determine the distribution of WISG throughout the study area. Flock size, and location will be geospatially referenced, to document population distribution and how it changes over the residency period. Survey distribution data from past EC surveys will be combined with flock location data obtained from this project to evaluate trends in spatial distribution changes. This will largely be a descriptive and spatial display of data.

We will use neck-band location from ground-based surveys and new PTT data to assess interchange among subgroups. We will assess to what degree individually marked geese are present, not-present, together within the same flocks. We will look at interchange patterns for the population of marked birds as a whole, as well as for the different cohorts (AM, AF, SM, and SF). We will assess movement patterns and extent of Utilization Distributions (UD) by cohort and for the population as a whole. From these data we should be able to estimate how distribution changes over time, what level of interchange there is for the various cohorts.

Assessing habitat use (e.g. what crops/fields snow geese are/are not selecting) is important in developing and implementing plans for future quality hunt areas on private lands, as well as in aiding decision making regarding crops to plant on reserves, and selecting areas for future reserves. A geodatabase will be created that includes parcel coverages of the agricultural lands within the NPS study area. Crop information will be obtained for each parcel. These data will include crop type harvested from the previous summer/fall prior to the snow goose arrival, presence/absence of crops within a parcel, crop types, planting dates, and maturity dates.

Relationships between the distribution data from ground-based and aerial surveys will be assessed to estimate what food resources are being selected / not-selected, if/what parcels are being utilized for resting, if there is a cohort effect on habitat use. We will complete Resource Selection Function (RSF) analyses to assess habitat availability throughout the wintering period (Manly et al 2003).

OBJECTIVE 3: Examine the current relationship of the NPS population to other flyway use areas.

Methods

As in 2012-13, a subset of snow geese will be captured in late winter after the conclusion of goose hunting season and will be outfitted with surgically implanted satellite platform terminal transmitters (hereafter referred to as PTTs). We will use rocket nets and other capture techniques (Coda net gun and net launcher) to capture snow geese. To increase the

probability of capturing individuals from different subgroups, we will trap in 2 locations in Skagit, Snohomish, and Island Counties, Washington.

PTT Deployment Matrix	
Area	**PTTs**
Northern Port Susan, southern Skagit Bay	2
Fir Island to Padilla Bay	3
Total	**5**

We will select up to 5 adult females to receive a PTT abdominal implant (Model IMPTAV-2640, 42g, Telonics, Inc.). A veterinarian will surgically implant the transmitters following established surgical protocols (Korschgen et. al 1996). Data are transmitted from the PTT to polar-orbiting satellites, relayed to an ARGOS Data Collection and Location System (Largo, MD), and forwarded to investigators for mapping and analysis. PTT duty cycles will be programmed to transmit more frequently during periods of migration, and less frequently during non-migratory periods. Using these duty cycles will permit frequent and long transmissions during the migratory periods while providing inter-annual philopatry information over three winters, three spring and two fall migratory periods. Ten PTTs from 2012-13 should hopefully be functioning as well, giving an optimal sample size of 15.

Data Analysis

PTT data will yield a wealth of original information about movement of WISG among flyway use areas. Specifically, these data will be used to document spring and fall migratory pathways used, as well as length of stay at migratory staging and stop-over sites.

In addition, we will also use these data to assess inter-year philopatry among flyway areas. Intra-year site philopatry will be determined by estimating the wintering UD of individually PTT marked geese over the study period. Inter-annual site philopatry will be assessed at the local scale and at the regional scale by estimating annual UD for each individual that returns to the study area and comparing extent of UD overlap between years.

We will also utilize band return and re-sight data that is collected for marked birds reported from other areas outside of the study area, both directly to us and the BBL. These data will also be solicited by establishing a reporting network comprised of resource agencies along the flyway, as well as birding and hunting communities along the flyway. We will also use mark-resight data collected from neck-collared birds during the harvest season of each year to provide additional information to evaluate if the population during this period is closed.

Anticipated Output

Project output will be included in the AGJV project report, annual Pittman-Robertson status and trend reports, as well as peer-reviewed journal articles detailing study results, conclusions, and management recommendations. We will produce maps of seasonal distribution, home range, and habitat use summarizing collar and radio telemetry data collected during the project. Satellite PTT data will be most valuable for providing information on spring and migration routes, and WDFW will sponsor a webpage tracking the PTT subjects for interested parties.

Management Implications

- Ensure that aerial survey methods provide an accurate enumeration of the population.
- Evaluate whether expanding distribution affects habitat use patterns and/or impacts to private agricultural lands
- Assess whether the current management of Skagit-Fraser WISG as a "closed population" (i.e. no emigration or immigration) is appropriate
- Provide habitat use information for Pacific Flyway areas north of Skagit-Fraser

Relationship to Other Projects

Lesser snow geese have been marked with standard USFWS aluminum bands on Wrangel Island since 1979 (Syroechovsky and Litvin 1986). From 1979 to 1990, a subset of several thousand of these geese was also outfitted with neck collars (Armstrong 1999, Hines et al 1999a, Hines et all 1999b, Kerbes et all 1999). During the early 1990's several geese from this population were also marked by USGS with prototype PTTs, however results from this project are not available.

During 2011 and 2012, WDFW personnel captured 500 geese Skagit and Snohomish counties, WA. Captured geese were outfitted with standard USFWS aluminum bands and alphanumeric neck collars similar to the collars proposed in this project. Marked geese that return in the fall of 2013 will be part of the marked subpopulation used for this project.

In 2000, CWS published work on distribution changes in WISG (Boyd and Cooke 2000). In 2005, CWS published work on age of first pairing in WISG, based on field work in the Fraser Delta during 1998-2002 (Ganter et al 2005). WISG have been extensively studied on the breeding grounds by Vasiliy Baranyuk, formerly of the Wrangel Island Nature Reserve, Russian Federation (see citations below).

Relevant Literature

Armstrong, W.T. 1999. Routes and timing of migration of lesser snow geese from the western Canadian arctic and Wrangel Island, Russia, 1987-1992. Pages 75-88 *in* Kerbes, R.H., K.M. Meeres, and J.E. Hines, eds. Distribution, survival, and numbers of lesser snow geese of the western Canadian Arctic and Wrangel Island, Russia. Occasional Paper No. 98, Canadian Wildlife Service, Saskatoon, Saskatchewan, Canada.

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Personnel

Don Kraege has been the Waterfowl Section Manager for WDFW since 1983, and worked on a collaborative project on Wrangel Island to capture snow geese during the summer of 1994. He was the main editor for the Pacific Flyway WISG plan and subsequent harvest strategies. He successfully managed the WISG snow goose project in the Skagit-Fraser area during 2012-13. Dr. Chris Grue manages the Washington Cooperative Fish and Wildlife Research Unit, University of Washington in Seattle, WA, and will provide indirect technical oversight for the project. Vasiliy Baranyuk formerly worked 30 years on WISG for the Wrangel Island Nature Reserve, and has published numerous scientific articles (see above). Baranyuk was the primary field researcher for the Skagit-Fraser project in 2012-13.

Schedule:

Beginning date:	October 2013
Completion of field work:	April 2014
Report preparation:	May 2014
Completion date:	June 2014

Budget

BUDGET (US Dollars) for FY13	AGJV	*Washington Waterfowl Association*	*Washington Department of Fish and Wildlife*	*UW*	TOTAL
Status of funding	**Requested**	***Requested***	***Secured***	***Secured***	
Personnel					
Collaborator salary (Baranyuk (UW): 8 months @ $4,200/month)	33,600				33,600
WDFW salaries: 2 months @ $5,300 / month)			10,600		10,600
UW Coop Unit Support			5,000	12,000	17,000
Travel/accommodations					
Commercial travel			1,000		1,000
Field vehicle costs			15,000		15,000
Materials/equipment					
PTTs (5) and data costs		15,000			15,000
Contractual					
Fixed wing aircraft			10,000		10,000
Vet Contract			3,000		3,000
Past FY13 Costs (2012-13 season)			80,000	12,000	92,000
TOTALS by funding source	$33,600	$15,000	$124,600	$24,000	$197,200

Letters of commitment: Pending submission.

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: **1/16/2013**
Contact: **Phillip Buser / Greg Bjornstrom / Rocky Ross**

1. Region: **3**

2. County: **Franklin**

3. Name of Area: **Sunnyside/Snake River Wildlife Area – Mesa Lake Unit**

4. Region Priority **2** (assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration **X** Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram): **See attachments**

7. Current wetland acreage of project site: **The Mesa Lake property includes 558 total acres, the lake, pond, and wetland habitat making up 108 acres or about 20 percent of the overall area. This includes the west end of Mesa Lake, owned by the Bureau of Reclamation, but managed by WDFW for many years.**

8. Current upland acreage of project site: **Approximately 410 acres. The remaining acreage (about 30) is irrigated field corn.**

9. If area is not owned by WDFW:
   a. Current ownership: **WDFW owns the Mesa Lake property and manages a contiguous 60 acre parcel for the Bureau of Reclamation.**

   b. Zoning: **Agricultural**

   c. USGS Quad reference:

   d. Habitat threats: **The property is protected through public ownership but could still be threatened by wildfire**

   e. Public access: **There are two points of access; from the west end, on Bureau of Reclamation property (includes gravel boat launch), and from a new parking area in the middle of the property. Access is from Langford and Sheffield roads, respectively.**

10. Current function (attach additional sheets if necessary)

a. Primary use (breeding, migration, and/or wintering): **Breeding, brood rearing, migration and wintering habitat. The property also provides habitat for substantial numbers of pheasant and quail. Sandhill cranes feed in cornstalk residue during spring migration.**

b. List species and numbers of waterfowl that use area: **This area is located 3.5 miles from the Windmill Ranch (WDFW), 6 miles from the Bailie Youth Ranch (WDFW hunting easement), and 4.5 miles from the Sugar Ranch (private) all of which have initiated waterfowl projects. Winter counts have reached 30,000 to 40,000 ducks in the immediate vicinity. Mallards make up the majority of duck concentrations, with pintails, scaup, wigeon, gadwall and teal also present. Larger lakes/ponds have held large numbers of scaup (300-500) in winter. This property includes a 35 acre lake, which provides resting habitat for several thousand ducks post-season.**

c. List species and numbers of other migratory game bird species that use area: **The area has 100-200 resident mourning doves and approximately 1,000 seasonal doves.**

d. List species and numbers of other game or diversity species that use area:
(Note all endangered, threatened, and sensitive species)
Black necked stilts, avocet, several sandpiper species, sora, Virginia rail, long billed curlew, red-tailed hawk, northern harrier, rough legged hawk, kestrel, osprey, prairie falcon, barn/great horned/short eared/long eared/saw-whet/screech owls, American white pelican, swan, white egret, great blue heron, black-crowned night heron, American bittern, beaver, muskrat, otter, mink, weasel, quail, pheasant, Hungarian partridge, mule deer, elk, large diversity of neotropical migrants, and large population of migrating sandhill cranes.

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements): **This project is to enhance a seasonally wet, pie-wedge shaped area of a new center pivot at Mesa Lake. The wildlife area recently invested $75,000 in a new center pivot system to improve habitat on a 45 ac. circle, plus periphery acres. Currently, the system can only irrigate a partial circle because it cannot walk through this low, wet swale. This project will identify the wheel routes of the pivot. Using a contractor with a dozer, in cooperation with WDFW equipment and staff, we will place rock (from local sites) and culverts accordingly to build up a solid base for each tower track. The reverser barricades will then be removed which will allow the pivot to make a complete revolution through the field. The culverts will allow water to maintain equilibrium throughout the sections. The end section dike will have a water control structure installed to manage this entire wetland for moist-soil habitat. There will be two pressure sensing valves installed in the center pivot system that will shut off water as it moves through this wedge. This will allow the pivot to walk through the wetland without adding excess water during the dry season, which will decrease erosion on the steep side slopes of the wedge. Water may be supplied to this wetland either naturally, or from a discharge pipe off the center pivot that was installed with the new pivot system. The rest of the swale will be developed with more diverse upland cover as part of a separate grant using volunteer labor. This project will be done in summer of 2014. This will give us another year (2013) to monitor existing hydrology and site conditions in order to confirm the feasibility of the project. As climate forecasts predict shifts towards warmer, drier conditions, enhancement of wetlands will help reduce the negative impacts to waterfowl in the Columbia Basin.**

b. Description of required maintenance and schedule: **As with all moist soil units, periodic vegetation control is needed to setback plant succession. Other duties would be to manage water flow in and out of the system. All work would be performed by Wildlife Area personnel.**

c. Description of current water supply and water rights if applicable: **There is a water service assessment from the irrigation district. Water initially comes from Mesa Lake for irrigation, then surface runoff and seepage collects in this low swale. When additional water is needed, water can be added from a discharge pipe directly off the new pivot.**

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat	5	This project will enhance surrounding uplands and watering areas for mourning dove.
*Pair, resting water	5	
*Nesting cover	8	
*Winter food resources	5	
*Hunting area	5	

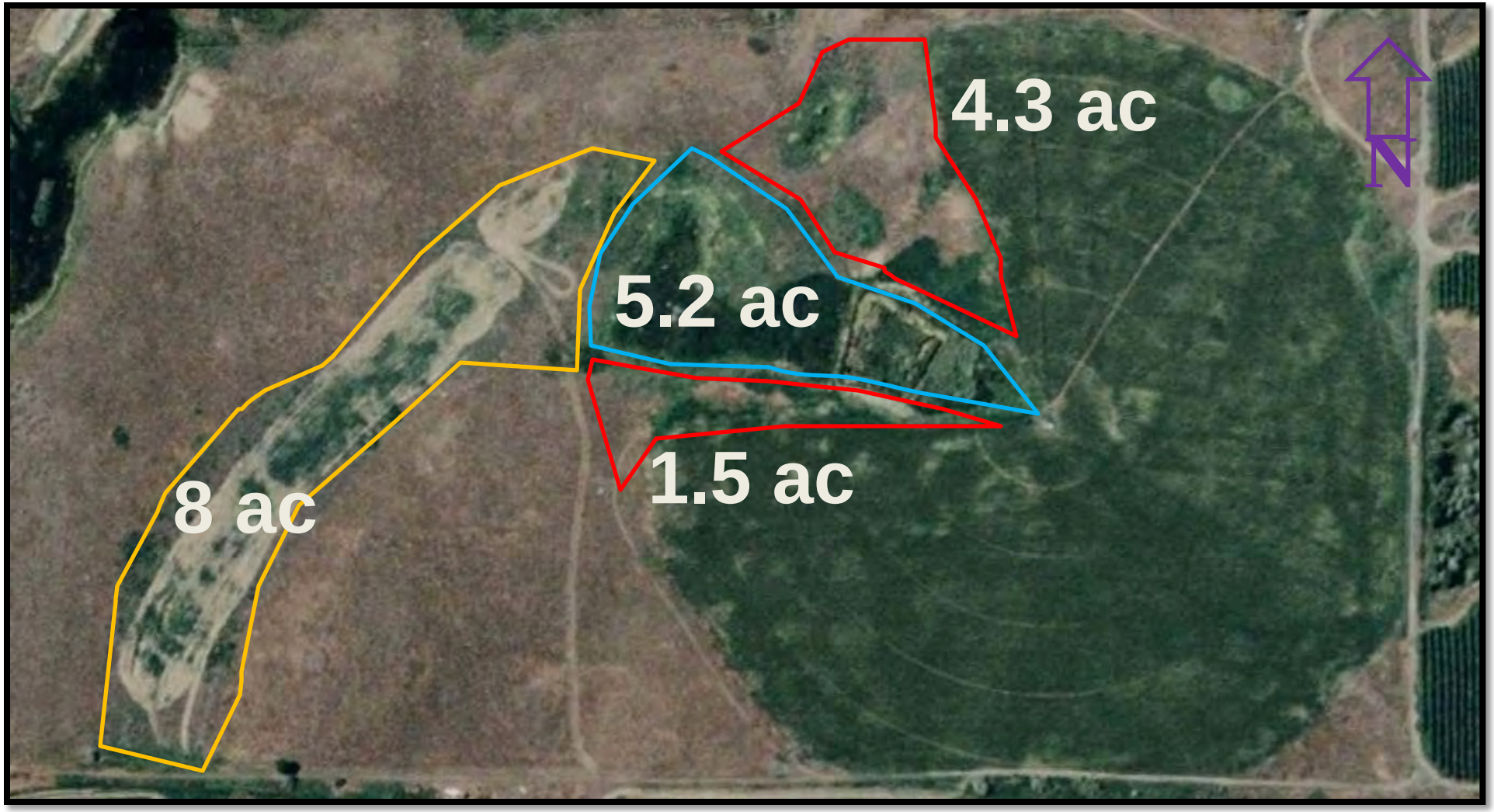
e. Description of baseline survey/habitat information available and monitoring planned to measure benefits: **There is currently no baseline information available. Mesa Lake is a Register to Hunt Site and hunter participation and success can be compared for two years prior to project work to subsequent years after completion.**

2. Cost Estimate (**Annual Costs**)

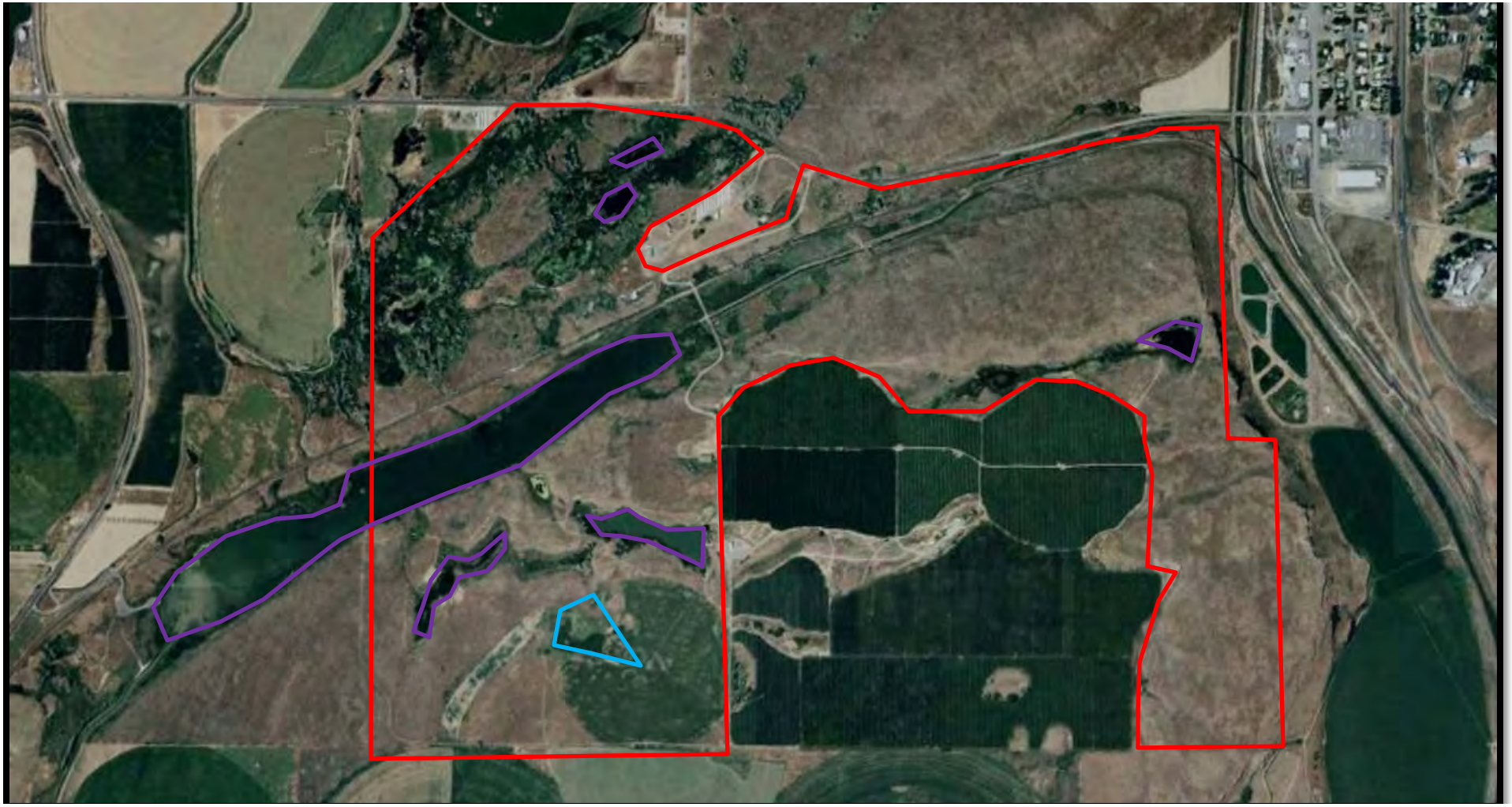
		July 1, 2013-June 30, 2014	July 1, 2014-June 30, 2015
CAPITAL BUDGET			
OPERATING BUDGET			
A/B	Salaries/Benefits		
C	Personal Services		$2,970
E	Goods and Services		$4,900
G	Travel		
J/K	Equipment		
N	Grants		
Other WA St. Sales Tax @ 8.2%			$401.80
TOTAL COST			$8,271.80
Est. Annual Costs after June 30, 2015: **Operational costs will be absorbed by the Wildlife Area.**			

Cost breakdown is as follows:

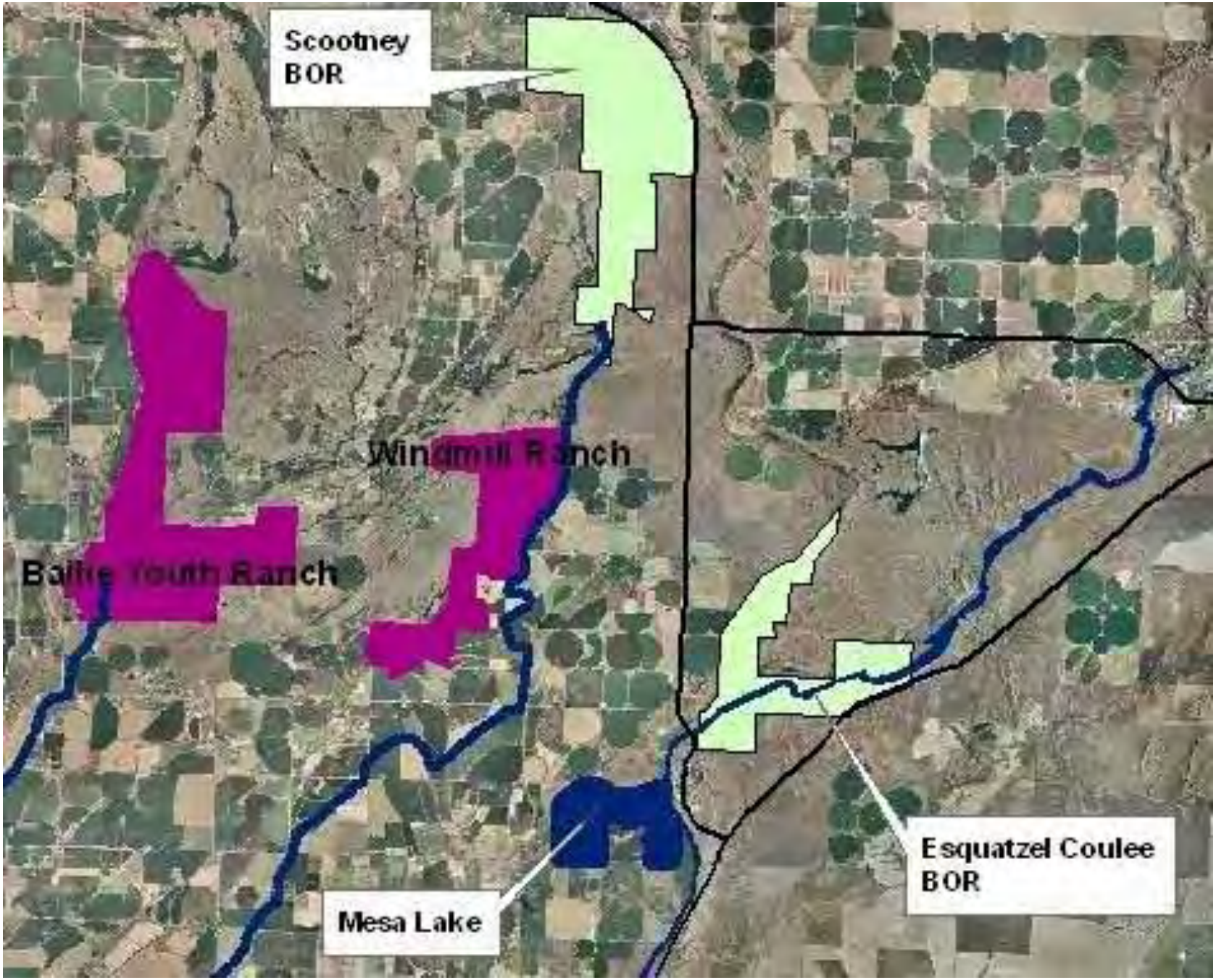
5-15 inch culverts @ $200 each
D-8 Dozer work for 18 hours @ $165 equals $2,970
Diesel fuel @ $400
Pressure valves @ $3,500 (includes installation)



This aerial photo shows the project area of the Mesa Lake Unit. The area outlined in blue is the wetland enhancement site. The area outlined in red is the side slopes of the swale that will be protected from erosion. The area outlined in yellow is a continuation of the swale and an area of influence by the hydrology of the wetland. This area consists of bunch grasses and forbs consistent with waterfowl nesting habitat.



This map shows the entire Mesa Lake Unit. The property boundary is delineated in red. The light blue shows the proposed wetland enhancement location. The purple outlines other wetlands and surface water currently on the property.



This map shows the juxtaposition of the Mesa Lake Unit to other wetland management properties in North Franklin County.

2013-2015 Proposal Form
Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: 1-29-13
Contact: Steve Loreng
WWA Tri Cities, 509948-5042

1. Region: 3

2. County: Franklin

3. Name of Area: Windmill Ranch, Sunnyside/Snake River Wildlife Area

4. Region Priority___**3**_____(assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration X_____ Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram): see attached maps

7. Current wetland acreage of project site: 300 (entire management unit)

8. Current upland acreage of project site: 1700 (entire management unit)

9. If area is not owned by WDFW:
   a. Current ownership: WDFW

   b. Zoning: Agricultural

   c. USGS Quad reference:

   d. Habitat threats: The property is protected through public ownership but could still be threatened by wildfire.

   e. Public access: There are two parking lots serving as public access. One parking lot allows access to the NE corner of the property; one parking lot allows access to the SW corner of the property.

10. Current function (attach additional sheets if necessary)
    a. Primary use (breeding, migration, and/or wintering):

    The Windmill Ranch is a working farm with over 400 acres of irrigated cropland surrounded by diverse upland and wetland habitat types. One of the goals for the property has been to improve wetland habitat for resident and migratory waterfowl, plus maximize small grain production on the agricultural lands for waterfowl and sandhill cranes during the fall, winter and early spring migration.

b. List species and numbers of waterfowl that use area: This area is surrounded on 3 sides by private hunt clubs, all of which have initiated waterfowl projects. Winter counts have reached 30,000 to 40,000 ducks in the immediate vicinity, and including this property. The Bailie Memorial Youth Ranch, on which WDFW holds a perpetual hunting easement, is located 3 miles to the west. The newly acquired Mesa Lake property lies 4 road miles to the southeast. Mallards are the primary duck species, although many other species use the area such as Canada geese, pintail, widgeon, teal, gadwall, scaup, ringneck ducks and wood duck. Swans and white pelicans are commonly found in the wetlands in the spring.

c. List species and numbers of other migratory game bird species that use area: 100-200 resident mourning doves and approximately 1000 seasonal doves

d. List species and numbers of other game or diversity species that use area: black necked stilts, avocet, several sandpiper species, sora, Virginia rail, long billed curlew, red tail hawk, northern harrier, rough legged hawk, kestrel, osprey, prairie falcon, barn/great horned/short eared/long eared owls, white pelican, swan, white egret, great blue heron, beaver, muskrat, otter, mink, mule deer, elk, large diversity of neotropical migrants, large population of migrating sandhill cranes

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements): The Windmill Ranch has 9 fields irrigated with center pivots. Field #3 on the north end of the ranch is 100 acres in size. Several years ago 3 pond projects were developed within this field. A grass buffer was planted around each multi-cell pond for nesting cover. In addition, the NW quadrant of the circle was planted to grass because it was too wet to farm. Approximately 20 acres were developed in ponds and nesting cover, leaving about 80 acres, which are planted to small grains annually. A fourth pond project, in the NW quadrant, was never completed. This proposal is to trench and bury approximately 1000 feet of 3 inch PVC pipe between the pivot and a natural swale in the NW quadrant of the circle so land managers can fill the swale with the existing irrigation system in the fall. This is the last pond project within this field.

b. Description of required maintenance and schedule: This pond development will be managed annually by WDFW staff, along with the other ponds in the field.

c. Description of current water supply and water rights if applicable: Source of water mostly comes from annual irrigation assessment on the property. Water is stockpiled in an irrigation pond on WDFW property at the end of the farming season, and is pumped from there to fill the ponds in circle 3 for hunting season.

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat	3-4	
*Pair, resting water	3-4	3-4 ac of surface water for dove watering
*Nesting cover	Ponds are surrounded by nesting cover. No acreage increase	
*Winter food resources	1-2 acres, depending on extent of moist soil plants	
*Hunting area	2 blinds	

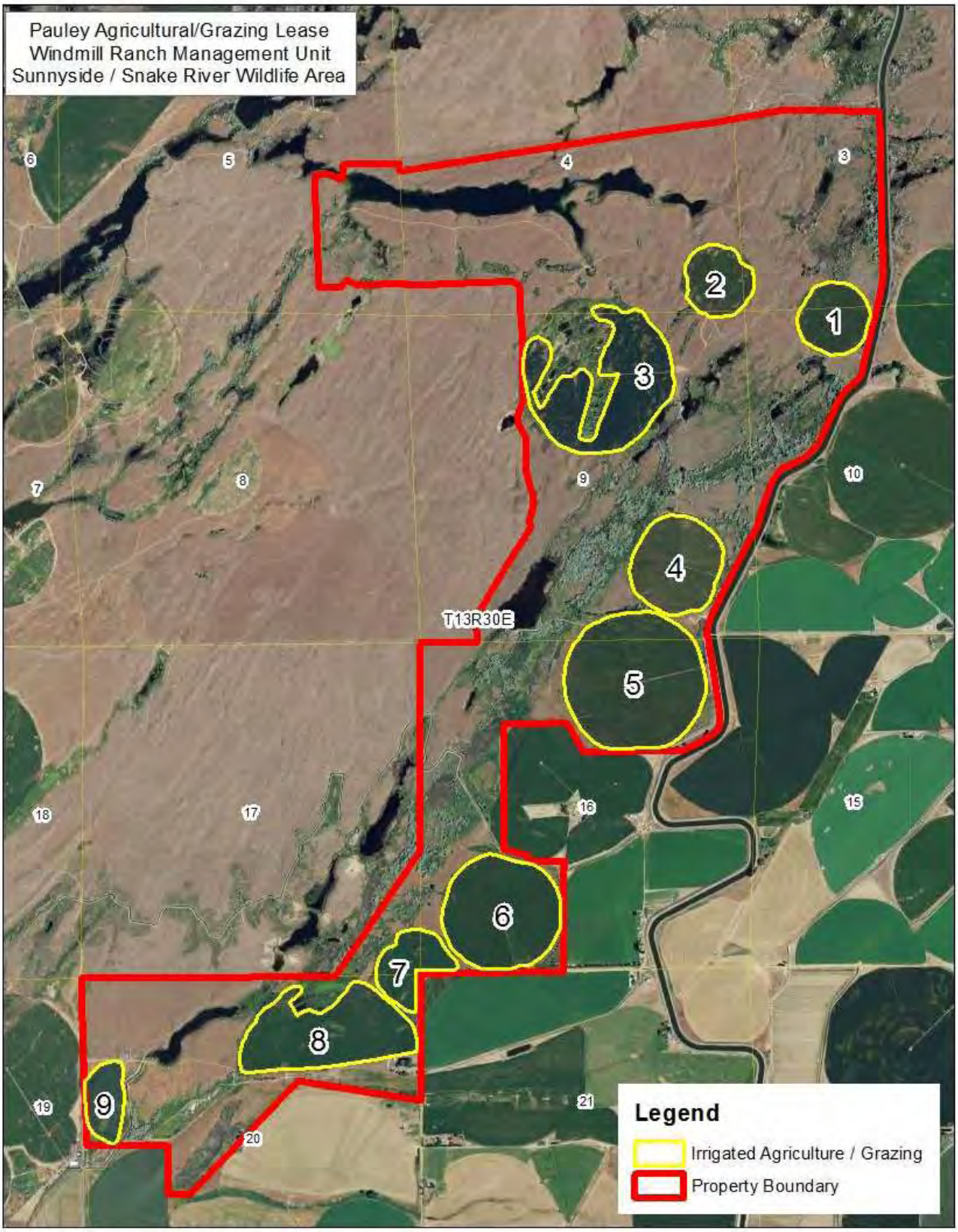
e. Description of baseline survey/habitat information available and monitoring planned to measure benefits: This request is for funds to improve an existing waterfowl project. Without the project, there was no open water habitat. Hunter interviews have shown that the pond development has been very successful for hunting opportunities. The surrounding cornfield provides a substantial food source for migrating waterfowl, especially after the hunting season ends, when large flocks of ducks and sandhill cranes use this field. Benefits are not measured quantitatively, but increased hunter days of use, increased bag limits and high numbers of waterfowl use clearly show the importance of this project. The Windmill Ranch is a Register to Hunt area and hunters are required to record their harvest. This data has been collected for many years but a change in harvest may not be attributable to this project due to natural fluctuation in waterfowl harvest within the region.

2. Cost Estimate (**Annual Costs**)

		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET			
OPERATING BUDGET			
A/B	Salaries/Benefits		
C	Personal Services	All work will be performed at no cost by Washington Waterfowl Association	
E	Goods and Services	$1400.00	
G	Travel		
J/K	Equipment		
N	Grants		
Other			
TOTAL COST		$1400.00	
Est. Annual Costs after June 30, 2015:			

Maps of site:

WETLAND TO BE
IMPROVED WITH WATER
STRUCTURE
3 INCH PVC PIPE
FIELD 3


Pauley Agricultural/Grazing Lease
Windmill Ranch Management Unit
Sunnyside / Snake River Wildlife Area
T13R30E
1
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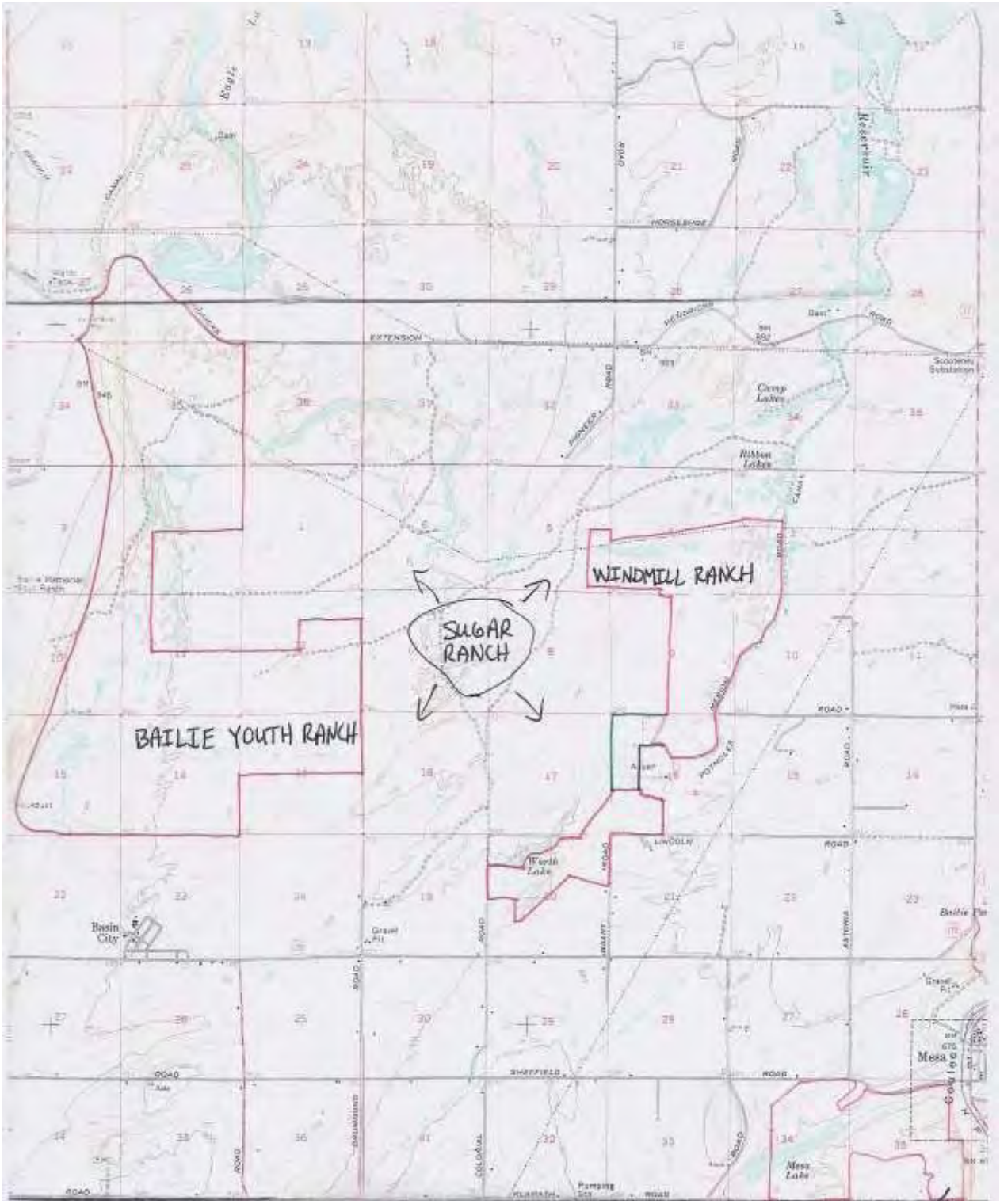
9
Legend
Irrigated Agriculture / Grazing
Property Boundary



This map shows the juxtaposition of WDFW-owned and controlled lands in North Franklin County. The Sugar Ranch is a privately owned duck club. Smaller private duck clubs are located in sections 19 and 21, on the west and east sides of Worth Lake, respectively, and in multiple sections between the north end of Windmill Lake and Hendricks Road.

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: January 23, 2013
Contact: Kyle Guzlas

1. **Region: 6**

2. **County: Grays Harbor**

3. **Name of Area: Johns River Wildlife Area Unit**

4. **Region Priority____4____(assigned by Regional Wildlife Program Manager)**

5. **Enhancement/Restoration _X_____Acquisition _____ (check one or both)**

6. **Location of project site (attach map, aerial photo, and/or diagram): maps attached**

7. **Current wetland acreage of project site: 320 (total unit)**

8. **Current upland acreage of project site:1180 (total unit)**

9. **Current function (attach additional sheets if necessary)**
   a. **Primary use (breeding, migration, and/or wintering):**
   Migration and Wintering

   b. **List species and numbers of waterfowl that use area:**
   - Species and Numbers are for Grays Harbor / Lower Chehalis

HIGH PRIORITY SPECIES	BREEDING	WINTERING	MIGRATION
1. Dusky Canada Goose		X	X
2. Tule Greater White-fronted Go		X	X
3. Cackling Canada Goose		X	X
4. Greater Scaup	X	X	X
5. Lesser Scaup	X	X	X
6. Mallard	X	X	X
7. Northern Pintail	X	X	X

OTHER PRIORITY SPECIES	BREEDING	WINTERING	MIGRATION
1. Ring-necked Duck		X	X
2. Wood Duck	X	X	
3. American Wigeon		X	X
4. Pacific Greater White-fronted Goos		X	X

OTHER WATERFOWL	BREEDING	WINTERING	MIGRATION
1. Bufflehead		X	X
2. Western Goose		X	X
3. Common Goldeneye		X	X
4. Gadwall		X	X
5. Green-winged Teal		X	X
7. Hooded Merganser	X	X	X
8. Redbreasted Merganser		X	X

SPECIES	BREEDING	WINTERING	MIGRATION
1. Dusky Canada Goose	40	40-250	> 10,000
2. Tule Greater White-fronted Goose	150	75	
3. Cackling Canada Goose	800	500	
4. Greater Scaup	75	150	
5. Lesser Scaup	100	150	
6. Mallard	3500	> 10,000	
7. Northern Pintail	2000	> 8,000	
8. Ring-necked Duck	210	250	300
9. Wood Duck	35	X	
10. American Wigeon	4000	> 11,000	> 80,000
11. Pacific Greater White-fronted Goose	25	> 100	> 1,000
12. Bufflehead	200	150	
13. Canada Goose	300	> 10,000	> 120,000
14. Common Goldeneye	45	125	
15. Gadwall	25	X	
16. Green-winged Teal	1500	2,000	> 8,000
18. Hooded Merganser	30	75	
19. Redbreasted Merganser	50	75	

c. List species and numbers of other migratory game bird species that use area:
Snipe

d. List species and numbers of other game or diversity species that use area: (note all endangered, threatened, and sensitive species)
Great blue herons, yellowlegs, dunlin, dowitcher, western sandpiper, killdeer, swallow

10. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):
The Johns River Wildlife Area Unit located on the south shore of Grays Harbor has specific management objectives that are related to maintaining high density waterfowl numbers. This strategy is achieved through a variety of wet soil management techniques. These include the utilization of 2 water control structures, discing for smartweed production, and field mowing. Each activity is critical to the maintenance of this site in order to provide enhanced feeding and resting habitat for migratory bird populations.
This site provides a quality hunt location in Grays Harbor, including the recent addition of an ADA hunting blind in 2009.

b. Description of required maintenance and schedule:
Annual maintenance includes management of two water control structures, mowing of 85 acres and farming approximately 10 acres for cereal grain production.

c. Description of current water supply and water rights if applicable:
Two water control structures are located within the project area.

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat	5	
*Pair, resting water	35	
*Nesting cover	5	
*Winter food resources	95	95
*Hunting area	95	95

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:

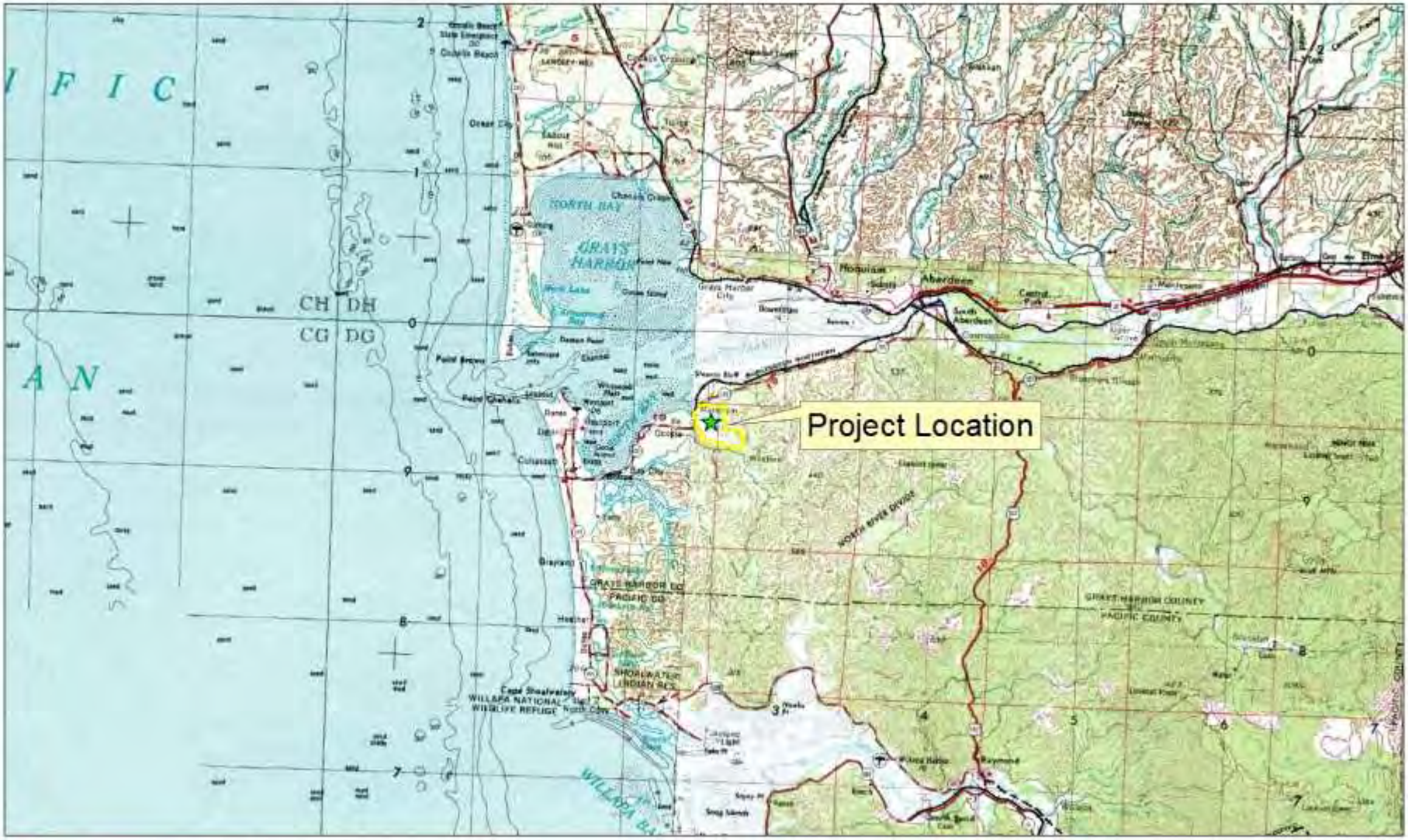
The area is surveyed as part of breeding waterfowl section surveys as well as part of midwinter inventory. Existing management has increased breeding pair numbers on the wildlife area. These funds will allow continuation of these practices.

11. Cost Estimate (<u>Annual Costs</u>)

		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET			
OPERATING BUDGET		6,250	6,250
A/B	Salaries/Benefits	4,250	4,250
C	Personal Services		
E	Goods and Services	2,000	2,000
G	Travel		
J/K	Equipment		
N	Grants		
Other			
TOTAL COST		6,250	6,250
Est. Annual Costs after June 30, 2013: 6,250/yr			

Olympic-Johns River Wildlife Area Complex

Johns River Unit



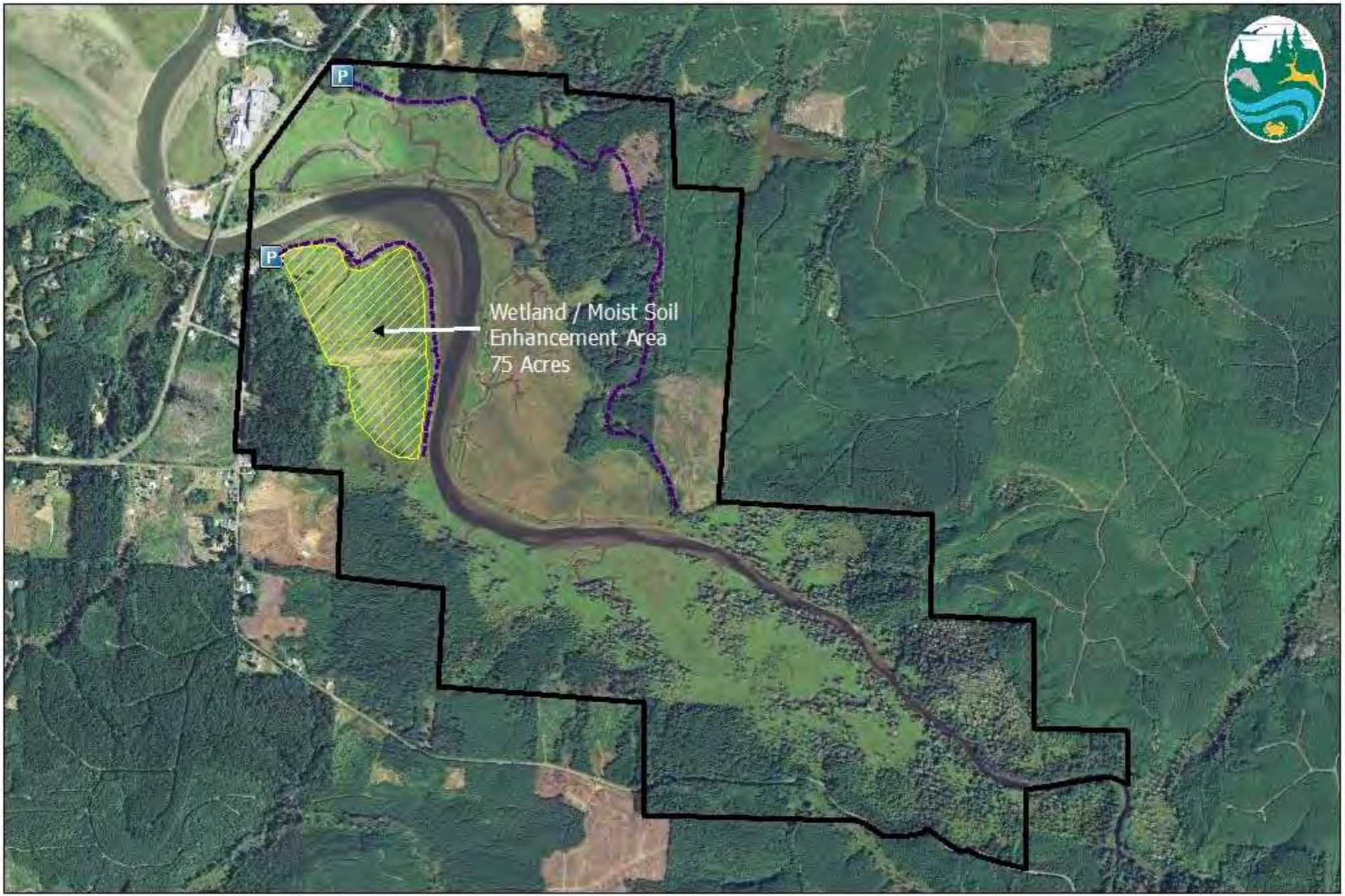
Legend

WDFW - Johns River Unit

N
W E
S

0 5 10 Miles

1 inch = 20,833 feet



Legend

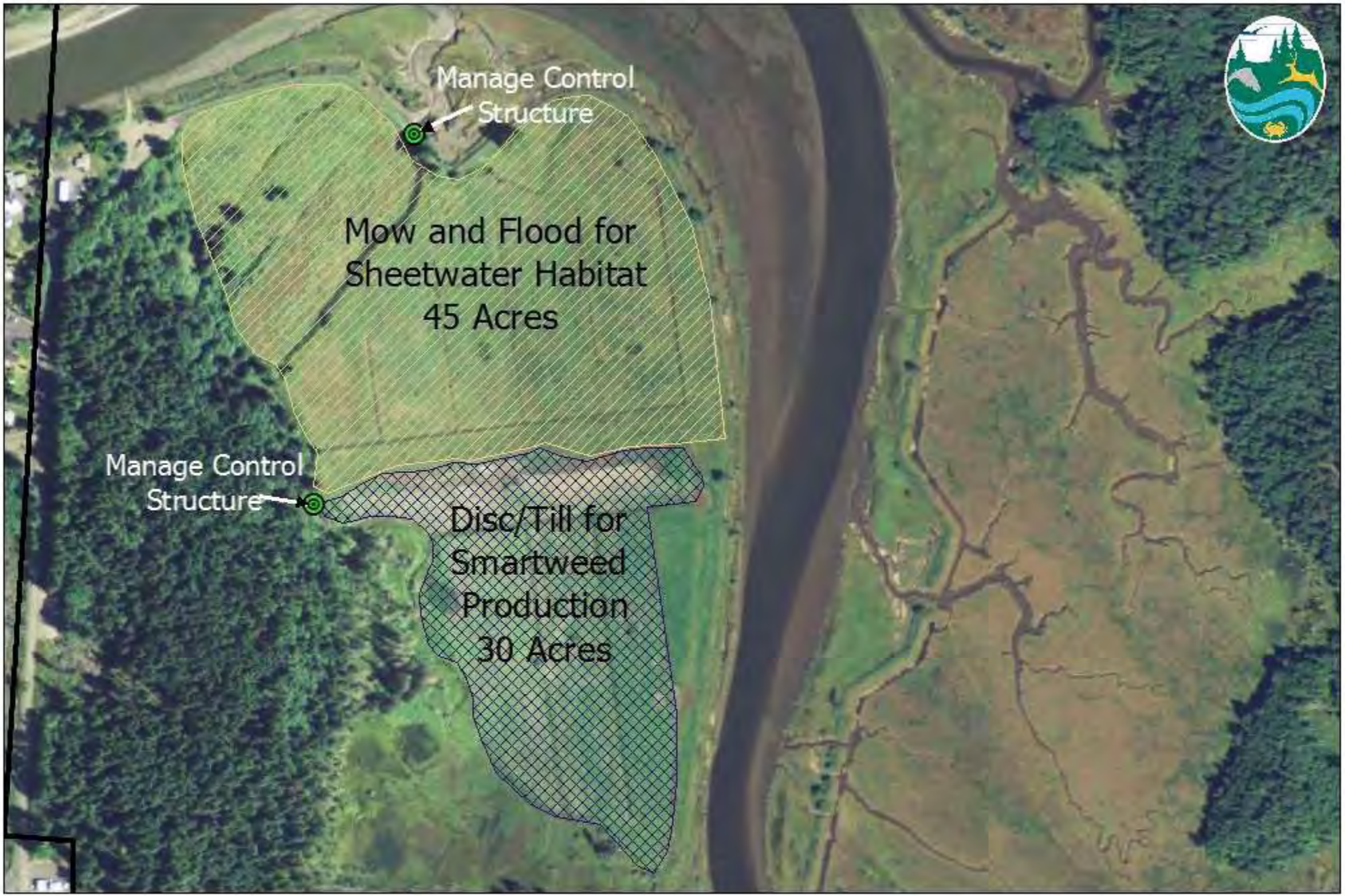
Johns River Unit

Developed Parking Area

Wetland Enhancement Area

0 0.5 1 Miles

N



Legend

Johns River Unit

Developed Parking Area

0 0.125 0.25 Miles

N

JOHNS RIVER UNIT - 1500 acres

A visitor parking area, boat launch, and gated access roads and trails provide largely a walk-in experience. Hunting occurs for deer, waterfowl, elk, bear, band-tailed pigeon, and forest grouse. Waterfowl hunting is particularly popular and successful on the tidelands on nearby Markham Island. Fishing is widespread for whitefish, rainbow and cutthroat trout, sea run cutthroat, and several races of salmon. Hiking and wildlife watching trips are common on the dikes and the established trail system. Drive West from Aberdeen on Hwy 105 approximately 11 miles, turn Left .1 mi. on John's River Road, Left on Game Farm Rd .1 mi. to parking area.

Scouting Report

Dabbling Ducks:
Moderate numbers of mallards, wigeon, teal and pintails.

Diving Ducks:
Moderate numbers of common goldeneyes and buffleheads.

Geese:
Low to moderate numbers of Canada Geese.

Legend

- Johns River Unit
- Trail
- Developed Parking Area
- ADA Hunting Blind

0 0.5 1 Miles

N

Figure 1 – Purple Haze of Smartweed at the John River Wildlife Area prior to flooding

Figure 2 – Flooded enhancement fields

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: January 18, 2013
Contact: Brandon Roozen

1. Region: Region 4

2. County: Whatcom, Skagit, Snohomish

3. Name of Area: Private Lands Access Program

4. Region Priority_____(assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration _____X_____ Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram):

7. Current wetland acreage of project site: 0 acres

8. Current upland acreage of project site: Approximately 100 acres of agricultural/upland at a minimum of 15 sites.

9. If area is not owned by WDFW:
   a. Current ownership: Private landowners cooperating in Private Lands Quality Hunt Programs

   b. Zoning: Agricultural

   c. USGS Quad reference: Multiple locations in Whatcom, Skagit, and Snohomish Counties

   d. Habitat threats: No habitat threats present

   e. Public access: Public access allowed at all proposed locations during 2013-14 waterfowl season.

10. Current function (attach additional sheets if necessary)
    a. Primary use (breeding, migration, and/or wintering):

The current function of the proposed project sites is marginal agricultural production. Enrollment in WDFW's Waterfowl Quality Hunt Program facilitates hunting opportunity, but, through implementation of the proposed project will enhance winter forage. The proposed food plots will primarily benefit dabbling ducks, with some additional use by geese and swans, and incidental use by shorebirds and wading birds.

b. List species and numbers of waterfowl that use area:

Mallard, Northern pintail, American widgeon, green-winged teal, gadwall, wood duck, snow goose, Canada goose, trumpeter swan, tundra swan

c. List species and numbers of other migratory game bird species that use area:
Mourning dove, common snipe (numbers vary across sites)

d. List species and numbers of other game or diversity species that use area:
(note all endangered, threatened, and sensitive species)

Herons (wading birds), raptors, shorebirds

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

The 2013-2014 waterfowl season marks the fourth year of implementation of the Waterfowl Quality Hunt Program in Skagit and Whatcom Counties. In this program, WDFW managed hunting opportunities located on private property are made available to the public. Units enrolled in the program are selected for their potential to attract waterfowl and provide a quality hunting experience for the public. Another critical component of site selection (and blind placement) is related to the hydrology of each site. Specifically, key criteria include the potential for a site to hold sheet water at appropriate levels and in locations that attract waterfowl and are also conducive to hunting.

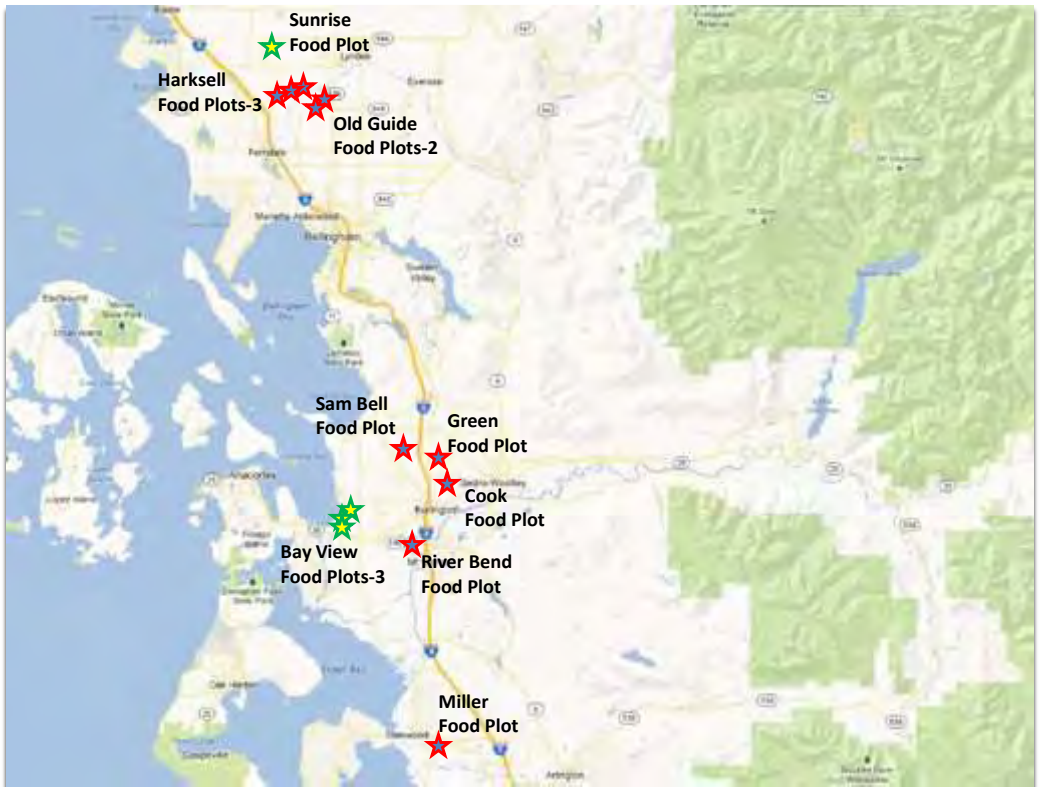
The low elevation areas (e.g. existing swales and sloughs) on units enrolled in the Waterfowl Quality Hunt Program tend form sheet water early in the season and hold it the longest, but are often the least productive for crop production. Frequently, landowner growers don't even both to plant crops in such areas because they are prone to lower yields or crop failure. As a result, undesirable plants and materials tend to accumulate in the most conducive waterfowl holding areas and are far from realizing the maximum potential for attracting waterfowl and providing critical winter forage. It is these specific areas on units enrolled in the Waterfowl Quality Hunt Program that will be targeted for forage plots

Throughout each waterfowl hunting season, WDFW Private Lands personnel monitor each site enrolled in the Waterfowl Quality Hunt Program to assess the level of hunter use, waterfowl abundance, and hunter success/satisfaction. Prior to the 2011-2012 hunting season, it became evident that hunting opportunities on some quality hunt units could be enhanced by implementing food plots. Thus, in 2011-2012 and 2012-2013 Private Lands staff oversaw the implementation of 15 food plots on 100 acres.

The Region 4 Private Lands program proposes expanding food plot implementation in Skagit and Whatcom Counties for the 2013-2014 and 2014-2015 hunting season. The objectives of this proposal are to: 1) provide additional forage for wintering waterfowl; and, 2) create conditions conducive to waterfowl hunting. The combination of eliminated cover and increased forage has the potential to greatly enhance units currently in the Waterfowl Quality Hunt Program. Some locations will be ready for tillage in their current condition and allow for food plot installation for winter 2013-14. However, others will require a two-year implementation strategy because current conditions and/or weather will not allow for grain planting after one spring of treatment.

Private lands staff has had initial discussions with partner landowners to discuss the conceptual framework for this proposal and they are generally receptive. Figure 1 (below) depicts potential locations for these food plots. When able, contractors will plant a barley crop for the Department at a rate of $80/acre with a 20 acre minimum, with additional costs of $120/hour labor rate for additional soil tillage when and where necessary. At least three large tracts currently enrolled in the Waterfowl Quality Hunt Program would facilitate this option and would be available for the Department if contracted. Smaller scale food plots at other sites can be implemented by Private Lands staff. Contract farming is the most effective and efficient strategy for larger forage plots. It is not practical for WDFW Private Lands to implement food plots larger than about five acres.

Figure 1. Proposed Waterfowl Quality Hunt Program food plot locations. Green/yellow stars are locations with food plots already implemented. Red/blue stars are proposed additional plots



For these smaller sites, WDFW Private Lands personnel will prepare a small, select piece of ground, clear old material, and install barley (or other grain), crop where fallow and/or undesirable conditions exist. When and where Private Lands personnel cannot install food plots, contracted landowner/growers will be paid for food plot installation. This is expanded below. For food plots implemented on private ground, the proposed land rental rate will be $150/acre/year. This rate is the low end of land rent in the area and reflects poor quality, undesirable ground conditions.

Some locations will require more preparation work than others before planting can occur .In such locations (e.g. high density reed canary grass), a spring herbicide application and/or late spring mowing will be required before tilling can occur. In most cases, that will sufficiently open up the ground for preparation and planting. In other cases, the amount of unwanted vegetation may be too great for a food plot implementation for that year. Site conditions on such plots would still be improved because: 1) Private Lands staff would still grub/scratch the ground to promote smartweed and duckweed growth, and thus provide at least some waterfowl forage; 2) elimination of dense grass stands on moist soils would decrease water uptake and improve accessible sheet water, creating a roost location for waterfowl; and 3) reduction of unwanted vegetation would facilitate food plot implementation the following year. Several sites are proposed for implementation of this practice in the 2013—2014 and 2014-2015 seasons.

b. Description of required maintenance and schedule:

WDFW Private Lands personnel will dedicate the months of June and July towards food plot installation. Required time will vary based on annual seasonal weather changes, but it is anticipated that 50 percent of one full-time technician will be dedicated to this effort during this period. Additionally, more time for the Private Lands biologist will be needed to facilitate landowner agreements for these food plots. Existing landowner agreements to the standard Waterfowl Quality Hunt Program will be amended to include appropriate language and payment arrangements related to food plot. Vegetation treatment and removal will occur immediately following negotiations.

c. Description of current water supply and water rights if applicable:

These plots are designed for installation adjacent to agricultural crops, in locations too wet in spring and fall for production. Naturally, these small acreages flood in late fall and winter via rainfall and poor drainage.

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat		
*Pair, resting water		
*Nesting cover		
*Winter food resources	100 acres	
*Hunting area		

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:

During 2012-13 waterfowl hunting season, private lands staff installed a pilot food plot on one of the Waterfowl Quality Hunt Program units (Appendix A). This same unit has been in the Program for the previous two waterfowl seasons. Over this period of time, WDFW Private Lands personnel have regularly monitored both waterfowl and public use on the site. Preliminary data shows a dramatic increase in use of both.

WDFW will continue monitoring this and other units while they are enrolled in the program and compare both waterfowl and hunter use to evaluate benefits of food plot installation. Data related to plant growth at food plots, presence of foraging wildlife, and hunter use, success and satisfaction for each unit will be collected. Additionally, WDFW staff will photo-document before and after conditions, food plot growth stages, waterfowl use, water fluctuations, and public use of each site. This data will be used to assess the effectiveness of the food plots to both wildlife and the public.

2. Cost Estimate (**Annual Costs**)

		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET			
OPERATING BUDGET			
A/B	Salaries/Benefits		
C	Personal Services		
E	Goods and Services	22,454	22,454
G	Travel		
J/K	Equipment	$8,100	$8,100
N	Grants		
Other			
TOTAL COST		$30,554	$30,554
Est. Annual Costs after June 30, 2015: Annual costs of $30,554 should be expected if plot acreage and number remains the same.			

Appendix 1. Photos of Pilot Food Plots on WDFW Quality Hunt Sites from the 2012-2013 Waterfowl Season

Photo 1. Tilling wet soil (not ideal) at Sunrise food plot mid-summer 2012

Photo 2. Food plot implemented in 2012 on one of WDFW's Waterfowl Quality Hunt Sites

Photo 3. Sunrise food plot mid-winter 2012

Photos 4 and 5. Bay View contracted food plots installations summer and fall 2012

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: 1/17/13
Contact: Richard Kessler

1. Region: 4

2. County: Whatcom

3. Name of Area: Lake Terrell Unit, Whatcom Wildlife Area

4. Region Priority_____(assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration _____X_____ Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram): Whatcom Wildlife Area, Lake Terrell Unit

7. Current wetland acreage of project site: 1300

8. Current upland acreage of project site: 1000

9. If area is not owned by WDFW:

   a. Current ownership: WDFW

   b. Zoning: Recreational and agricultural

   d. USGS Quad reference: Lummi Bay quad map T39, R1E, Sec 28

   e. Habitat threats: rural development, weed encroachment

   f. Public access: Full public access for hunting, fishing etc on 2300 acres

10. Current function (attach additional sheets if necessary)

   a. Primary use (breeding, migration, and/or wintering):
   Primarily a wintering waterfowl area. Heavily utilized by nesting waterfowl as well.
   Acreage is adjacent to an established Game Reserve.

   b. List species and numbers of waterfowl that use area:
   Peak wintering waterfowl numbers reach 10,000. Species utilizing area include all North American puddle ducks, greater Canadian geese, whistler and trumpeter swans, and a variety of diver ducks.

   c. List species and numbers of other migratory game bird species that use area:
   Mourning dove-250

   d. List species and numbers of other game or diversity species that use area:

(note all endangered, threatened, and sensitive species)
Pileated woodpecker (threatened), bald eagles, falcons, several raptor species, rails, bitterns, and several passerine species

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

Currently 47 acres of cereal grains are planted for wintering waterfowl feeding. This project would plant 15 additional acres of cereal grains. Providing wintering grain crops for waterfowl assists with maintaining optimal body condition for spring migrating birds, assuring good clutch production. Providing winter food also serves to hold waterfowl in the county during harsh winter weather. All agricultural equipment required is on site. Approved dollars will be used for seed, fertilizer, weed control, diesel and labor costs.

b. Description of required maintenance and schedule:
After planting and weed control, no further maintenance is required.

c. Description of current water supply and water rights if applicable:

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat		
*Pair, resting water		
*Nesting cover	20	20
*Winter food resources	20	20
*Hunting area	20	20

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:
The average number of wintering waterfowl using Lake Terrell is 10,000. These waterfowl utilize the planted grain crops as a food source during winter. The Lake Terrell WLA Manager monitors and documents wintering waterfowl use. All WDFW ownership has been surveyed for habitat types, acreage, and wildlife use.

2. Cost Estimate (**Annual Costs**)

		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET			
OPERATING BUDGET			
A/B	Salaries/Benefits		
C	Personal Services		
E	Goods and Services	$3,000.00	$3,000.00
G	Travel		
J/K	Equipment		
N	Grants		
Other			
TOTAL COST		$3,000.00	$3,000.00
Est. Annual Costs after June 30, 2015:			

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: January 28, 2013
Contact: Belinda Rotton
Skagit Wildlife Area Manager

1. Region: 4 and 5

2. County:

3. Name of Area: Workshop hosted in Vancouver, Washington Area

4. Region Priority_____(assigned by Regional Wildlife Program Manager)

5. Continuing Education __X___ Enhancement/Restoration _____Acquisition ____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram):

7. Current wetland acreage of project site: NA

8. Current upland acreage of project site:

9. If area is not owned by WDFW:
   a. Current ownership:

   b. Zoning:

   c. USGS Quad reference:

   d. Habitat threats:

   e. Public access:

10. Current function (attach additional sheets if necessary)
   a. Primary use (breeding, migration, and/or wintering):

   b. List species and numbers of waterfowl that use area:

   c. List species and numbers of other migratory game bird species that use area:

d. List species and numbers of other game or diversity species that use area:
(note all endangered, threatened, and sensitive species)

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

The purpose of this project is to provide the funding necessary for WDFW to host a wetland ecology and management workshop focused on waterfowl and waterbirds. The workshop topics include wetland distribution and function, wetland vegetation, invertebrate ecology, waterfowl and waterbird use and various wetland management techniques. The workshop will include a lecture as well as 2 field trips to federal and state managed wetlands to reinforce principle covered in the class and provide the opportunity for additional dialogue. Dr. Leigh Fredrickson, a retired Emeritus Professor from the University of Missouri, has over 40 years of experience in wetland ecology and management. Leigh is well respected for his knowledge of wetland systems all over the US and his training focus to transfer current research into on the ground management. This funding request will cover the class registration for 20 WDFW employees and the travel cost of contractor and staff teaching the workshop.

b. Description of required maintenance and schedule: NA

c. Description of current water supply and water rights if applicable: NA

d. Benefits to migratory game birds and recreation (quantify benefits below): NA

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat		
*Pair, resting water		
*Nesting cover		
*Winter food resources		
*Hunting area		

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:

2. Cost Estimate (**Annual Costs**)

		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET			
OPERATING BUDGET			
A/B	Salaries/Benefits		
C	Personal Services	$10,000.00	
E	Goods and Services		
G	Travel		
J/K	Equipment		
N	Grants		
Other: Meeting room and food expenses		$2010.00	
TOTAL COST		$12,010.00	
Est. Annual Costs after June 30, 2015:			

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program

Migratory Bird Habitat Project Proposal

Date: February, 2013
Contact: WDFW 509-754-4624
Rich Finger (x229)

1. Region: Region 2

2. County: Grant

3. Name of Area: Gloyd Seeps Wildlife Area; Mansfield Pond

4. Region Priority_____(assigned by Regional Wildlife Program Manager)

5. Enhancement _____ Acquisition _____ Phase II; permitting ___X___

6. Location of project site (attach map, aerial photo, and/or diagram):

   T21N R28E Sections 17 and 20
   Maps attached, see Figure 1.

7. Current wetland acreage of project site:

   Future Proposed Construction site (Mansfield Spring) – approx. 15 acres
   Mansfield Pond – approx. 60 acres
   Lower Basins – approx. 25 acres

8. Current upland acreage of project site:

   Enhancements will not be conducted in the uplands. A minimal acreage of uplands would be converted to wetlands if the construction phase of project is implemented.

9. If area is not owned by WDFW:

   a. Current ownership: Washington Department of Fish and Wildlife
   b. Zoning: Recreational
   c. USGS Quad reference: Gloyd
   d. Habitat threats: Wetland succession and loss of productivity.

e. Public access: Columbia Basin Wildlife Area

10. Current function (attach additional sheets if necessary)

a. Primary use (breeding, migration, and/or wintering):

The Mansfield Pond and adjacent wetlands (see Figure 1) support migrant, wintering and breeding waterfowl and other wetland obligates. The Mansfield Pond was treated with rotenone in 1983 to remove carp. It appears to fish-free today with the exception of bullheads. Ponds in the-lower basins are seasonal and do not contain fish. Fish-free (particularly carp-free) wetlands are extremely valuable to breeding waterfowl because they support a greater abundance of invertebrates (Foster and Myers 1984). Thus the value of these wetlands to waterfowl, especially breeding ducks, is high. Further, the absence of carp allows for greater productivity of submerged aquatic vegetation, which is important to migrating and wintering waterfowl, particularly diving ducks and swans (Kantrud 1990).

Unfortunately, increased coverage of tall emergent vegetation as a result of succession has reduced and further threatens the productivity of the wetland. Recently, common reed (*Phragmites australis*) has become established in Mansfield pond. Common reed is a highly aggressive, exotic plant, which is capable of greatly reducing wetland value and spreading to adjacent wetlands. Without enhancement the wildlife value of the Mansfield Pond will undoubtedly decline in the future.

BACKGROUND INFORMATION:

During 2011, the primary water control structure was replaced with a “beaver-resistant” structure. Unfortunately, due to impenetrable bedrock encountered during construction, the primary water control structure could not be placed as deeply as previously planned, leaving the culverts above water surface elevation when dewatering (photo below). This has slowed our ability to drain but more importantly has become vulnerable to beaver plugging which occurs overnight. Beavers are using tall emergent vegetation, muskgrass, sago pondweed, and mud to plug the structure and have been increasingly persistent. As seen in this photo, algae is also a source of culvert plugging.

b. List species and numbers of waterfowl that use area:

Breeding Season:
Mallard: 5-10 pairs
Gadwall: 5-10 pairs

Migration and Wintering:
Mallard: 3,000-15,000
Pintail: 400-1,500
Canada Geese: 25-500
Tundra Swan: 0-15
Sandhill Crane: 0-100 (recent response to burning and low water levels)

c. List species and numbers of other migratory game bird species that use area:

Coots: 100
Wilson's snipe: 25-100

d. List species and numbers of other game or diversity species that use area:
(note all endangered, threatened, and sensitive species)
Mule deer, pheasant, grey partridge, and a wide variety of non-hunted species.

It is possible that northern leopard frogs occur in the project area based on historic records from early 2000's.

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagram and/or aerial photo showing improvements):

No physical improvements are planned at this time. The intent is to prepare permitting for a simple bifurcation structure and potentially some levee work at Mansfield Spring, which is the primary water source which fills Mansfield Pond. The bifurcation structure is needed because beaver are plugging the culverts overnight when the surface elevation of Mansfield Pond falls below the top of the outlet culverts, thus we cannot manage Mansfield Pond water levels at their full potential and cannot dry the pond adequately to operate machinery to perform maintenance work.

The Mansfield Spring project area (Figure 1) consists primarily of perennial pepperweed and reed canarygrass, both are highly invasive, undesirable species.

b. Description of required maintenance and schedule: N/A

c. Description of current water supply and water rights if applicable:

The current water supply for Mansfield Pond and adjacent wetlands down slope from it comes from a spring on the Northwest side of the project area (Figures 1 and 2). The spring appears to be fed primarily by leakage from the East Irrigation Canal and potentially from irrigation upslope. Water slowly flows through the soil to feed the spring. As a result, peak flows from the spring that feeds Mansfield Pond occur in October. Best current estimate based on observed water levels at primary water control structure are ca. 32 acre-feet per day; ca. 16 cfs. Low flows occur during May and do not exceed evapo-transpiration rates from Mansfield Pond. Note: Both the large and small storage areas lose water rapidly, presumably through cracks in bedrock. We know that all water can be absorbed by the large storage area without overflowing, even at peak flow.

d. Benefits to migratory game birds and recreation (quantify benefits below):

Because this proposed project is a planning effort it has no immediate benefit to migratory game birds or recreation. However, should enhancement be implemented, migratory game birds would benefit from increased wetland productivity (invertebrates and submerged aquatic vegetation) associated with hemi-marsh and moist soil management practices. Further, the project would stop the spread of common reed in Mansfield Pond and adjacent wetlands because it would allow managers to access and control tall emergent vegetation. Currently, the pond is covered by about 50% tall emergent vegetation, the majority of which is bulrush and cattail. Maintenance of the hemi-marsh conditions having no more than 25-50% tall emergent vegetation would result in about 20 additional acres of open water habitat for forage production and hunting opportunity. Mansfield Pond is popular for waterfowl hunting due to springs, which maintain open water throughout much of the winter. The basins down slope also provide hunting opportunity.

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat	N/A	N/A
*Pair, resting water	N/A	N/A
*Nesting cover	N/A	N/A
*Winter food resources	N/A	N/A
*Hunting area	N/A	N/A

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:

The area has been inventoried for T&E species and species of concern and nothing was found. Due to the potential for occurrence, a spring call survey will be conducted to determine whether leopard frogs or Oregon spotted frogs occur here.

2. Cost Estimate (**Annual Costs**)

	July 1, 2013-June 30, 2013	**July 1, 2014-June 30, 2014**
CAPITAL BUDGET		
OPERATING BUDGET		
A/B Salaries/Benefits (1 mth) Bio 2 to prepare permitting SEPA, 404, Shoreline Permit, JARPA	$5,000	
C Personal Services Cultural Resources Survey Topo/Engineering Design (DU)	 $2,500 $2,500	
E Goods and Services		
G Travel		
J/K Equipment		
N Grants		
Other		
TOTAL COST	$10,000	
Est. Annual Costs after June 30, 2014: None		

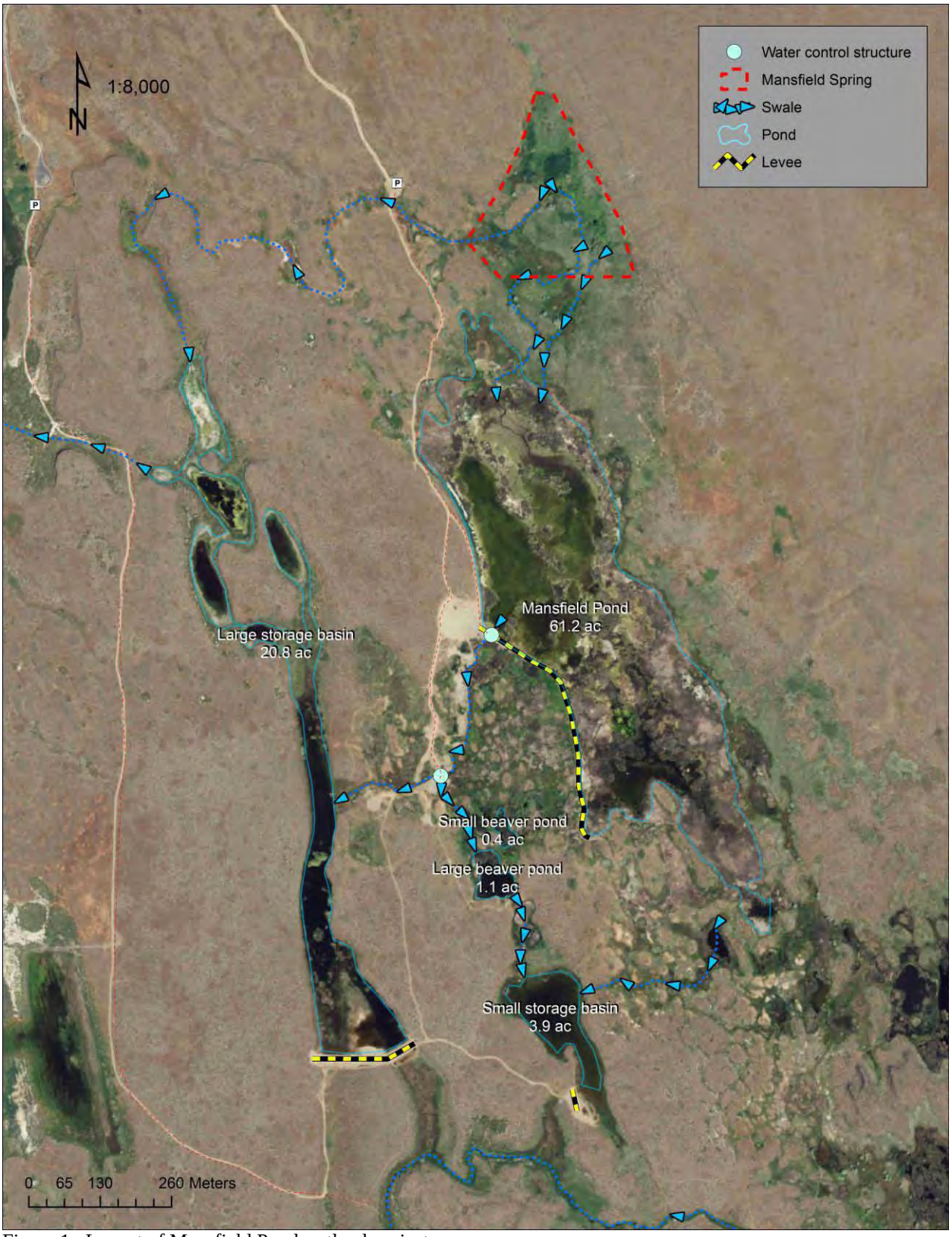


Figure 1. Layout of Mansfield Pond wetland project.

Figure 2. Mansfield Spring outflow and project area.

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: **1-31-2013**
Contact: **Don Larsen**
509.323.2967
don.larsen@dfw.wa.gov

1. Region: **1, 2 &3**

2. County: **all eastern Washington counties**

3. Name of Area: **Partner Biologist**

4. Region Priority_____(assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration _____X_____ Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram): **see Figure 1 for project area map**

7. Current wetland acreage of project site: **In eastern Washington there are currently 60 Wetland Reserve Program (WRP) easements covering approximately 14,194 acres that can be monitored for restoration success and further management needs. Further, any privately owned and drained or altered wetland in eastern Washington is a candidate for a future WRP restoration easement.**

8. Current upland acreage of project site: **N/A**

9. If area is not owned by WDFW:

   a. Current ownership: Private lands of eastern Washington

   b. Zoning: **N/A**

   c. USGS Quad reference: **N/A**

   d. Habitat threats: **Many wetlands in eastern Washington were previously drained with open ditches or other means to create better pasture for livestock or for crop production. In addition, extensive infrastructure such as levees, overflow drainage canal and large diversion structures were constructed to regulate creek flows and protect floodplain farm fields from unwanted flooding. These alterations have completely changed the hydrology of many primary and secondary streams and associated wetlands across a large area of eastern Washington. Many streams are largely disconnected from their floodplains, significantly reducing available emergent and open-water wetland habitats important to waterfowl**

during the migration and breeding periods. Native wetland plant communities are degraded and many are dominated by non-native reed canary grass, which when not grazed or hayed provides low value habitat for waterfowl.

e. Public access**: Improving existing and future WRP projects will result in higher quality wetland habitat being available for public hunting and wildlife viewing opportunities where none previously existed due to drainage for agricultural purposes and/or where existing easements could be improved through new management.**

10. Current function (attach additional sheets if necessary)

a. Primary use (breeding, migration, and/or wintering): **Eastern Washington is important for migrating and breeding waterfowl; in particular the channel scablands supports 500,000 ducks, geese and swans during the peak of the fall migration. On a statewide basis, the area is significant for breeding waterfowl.**

b. List species and numbers of waterfowl that use area: A**ll waterfowl and shorebirds species that use wetlands on private lands in eastern Washington could potentially benefit from improved management of existing WRP easements and new easements.**

c. List species and numbers of other migratory game bird species that use area: **An unknown number of mourning doves are present in eastern Washington.**

d. List species and numbers of other game or diversity species that use area: **Area contains important habitat for other game species such as Mule Deer, California quail, Hungarian partridge, and pheasant as well as WDFW designated core habitat for the following Priority Species: sharp-tailed grouse (State Threatened); Sage Thrasher; Sage Grouse; White-Tailed Jack Rabbit; Loggerhead Shrike; Burrowing Owl; Prairie Falcon; Peregrine Falcon (State Sensitive); Sage Thrasher; Swainson's Hawk (State Threatened) and Ferruginous Hawk (State Threatened).**

11. Project Description

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements): **This proposal is to provide funding to cover 0.5 FTE for a partner biologist to focus on improving and implementing WRP. Funding for the other 0.5 FTE will be provided by the Natural Resource Conservation Service (NRCS). The partner biologist will be an employee of a non-government organization experience with Farm Bill conservation programs implementation such as *Pheasants Forever*.**

Participation in WRP in Washington State greatly declined from over $7 million annually in the early 2000s to recently improving in 2011 and 2012.

WRP Dollars Obligated in WA

Year	Amount
2003	$7,000,000
2004	$7,502,900
2005	$7,782,000
2006	$5,558,000
2007	$1,641,000

Year	Amount
2008	$515,000
2009	$385,000
2010	$250,000
2011	$706,101
2012	$2,857,607

On a nationwide basis, funding for WRP has remained relatively constant over this same time period. Thus declining participation in WRP in Washington State represents significant lost opportunity to restore wetlands and benefit wetland species. Declining participation in WRP was a result of several factors, including time limitations of NRCS staff. NRCS is responsible

for implementing a wide variety of conservation programs and staff has very limited time to service WRP contracts and even less time to market the program to prospective participants.

The improvement in 2011 and 2012 represents a renewed commitment to WRP by Washington NRCS. NRCS has hired a statewide WRP coordinator and agreed to fund this partnership position specifically to improve their performance with WRP.

This proposal focuses on the following three objectives:

<u>Objective 1</u>: Conduct biological monitoring of past WRP projects to identify current management needs to improve existing habitat.

<u>Objective 2</u>: Conduct biological monitoring to evaluate effectiveness of past restoration techniques to inform future WRP restoration design.

<u>Objective 3</u>: Provide marketing and technical assistance to landowners to develop new quality WRP applications, particularly for the new reserved grazing rights WRP.

This project represents an overall private lands partnership of the following entities:

1. **<u>NRCS:</u> Will match funding provided by this proposal to create one FTE for the partner biologist; also provides office space for this partner biologist , a private lands biologist in Colfax and Private Lands Coordinator in Spokane.**
2. **<u>Palouse Rock Lake Conservation District:</u> Provides office space to co-locate a private lands biologist with NRCS and Conservation District staff in St. John.**
3. **<u>Palouse Conservation District:</u> provides computer access for private lands biologist in Colfax.**
4. **<u>Ducks Unlimited and Intermountain West Joint Venture:</u> assisted with getting NRCS approval for the new reserved grazing rights WRP for the channel scablands.**

b. Description of required maintenance and schedule: **N/A**

c. Description of current water supply and water rights if applicable: **N/A**

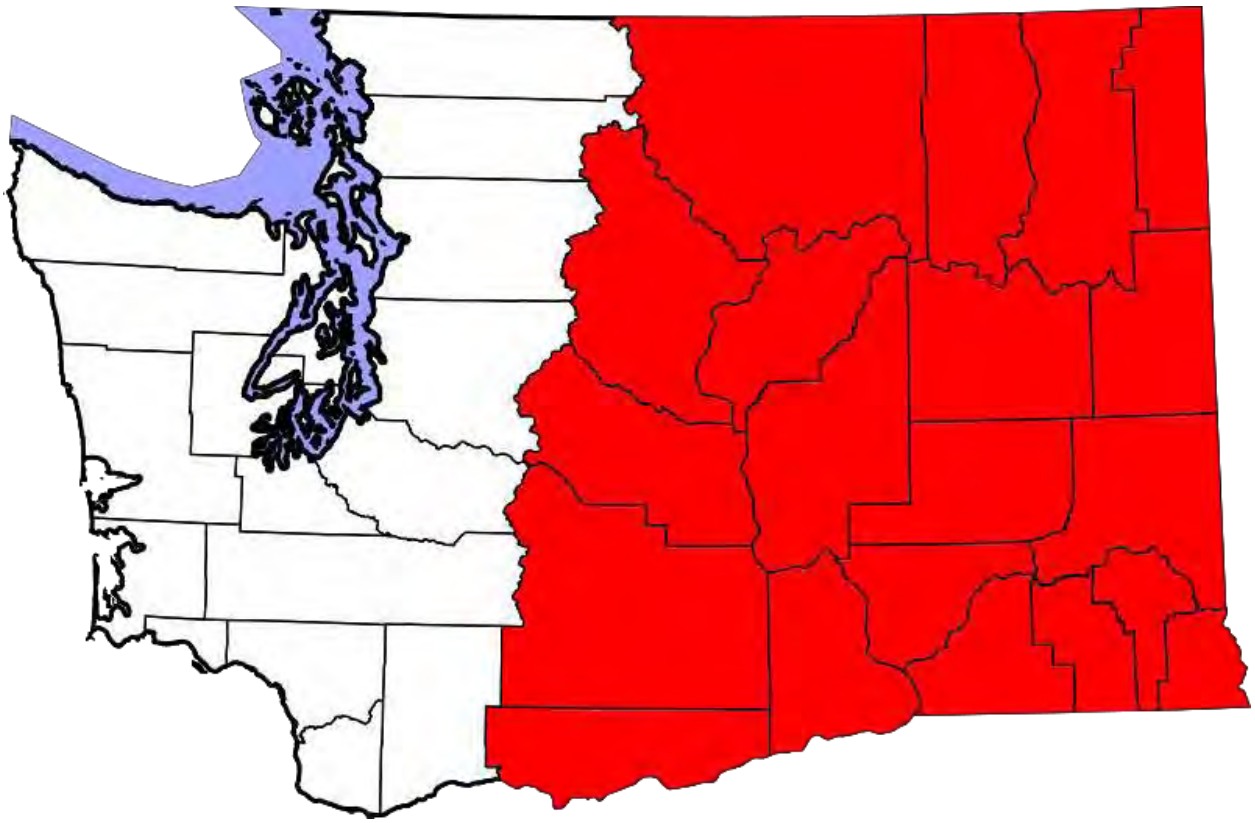
d. Benefits to migratory game birds and recreation: **Average yearly size of a WRP contract in Washington has ranged from approximately $64,000 - $258,000. Due to staff limitations NRCS has not been able to conduct biological monitoring of existing WRP easements and evaluate success of their restoration techniques. Further it is important for a state NRCS office to have a backlog of quality unfunded WRP proposals in order to increase chances of securing more WRP funds from the NRCS national office. Also due to staffing limitations, NRCS is able to devote only limited effort into seeking new voluntary participants in WRP. Outreach will be particularly important for the new reserved grazing rights WRP that has been approved for the channel scablands.**

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits: **N/A**

2. Cost Estimate (**Annual Costs**)

		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET			
OPERATING BUDGET			
A/B	Salaries/Benefits	$40,000	$40,000
C	Personal Services		
E	Goods and Services	$3,600	$3,600
G	Travel	$1,500	$1,500
J/K	Equipment		
N	Grants		
Other			
TOTAL COST		$45,100	45,100
Est. Annual Costs after June 30, 2015: **N/A**			

FIGURE 1. LOCATION MAP OF PROJECT AREA – EASTERN WASHINGTON COUNTIES



Attachment 1

DRAFT Statement of Work for Partner Biologist developed by WDFW and NRCS

The purpose of this agreement is provide technical assistance in biological monitoring and landowner outreach directed primarily towards wetland restoration and in the implementation of the Wetlands Reserve Program (WRP). The Wetlands Farm Bill Biologist will be based in a Natural Resources Conservation Service (NRCS) or Washington Department of fish and wildlife (WDFW) office as mutually agreed upon by Pheasants Forever, NRCS and WDFW and will have primary responsibilities within Eastern Washington. The Wetlands Farm Bill Biologist will assist NRCS and WDFW staff and may be required to report for work detail throughout eastern Washington for extended periods of time as requested by the oversight committee which is made up of a representative from NRCS, WDFW and Pheasants Forever.

Work will be performed primarily in support of WRP, although all Farm Bill conservation programs including Wildlife Habitat Incentives Program (WHIP), Conservation Reserve Program (CRP), Environmental Quality Incentives Program (EQIP), and Conservation Security Program (CSP) could be utilized to benefit wetland habitat according to opportunity.

This agreement will partially support a Pheasants Forever position to provide the technical assistance tasked in this Statement of Work. Additional funding from Pheasants Forever chapters and other partners may also be utilized to assist with wetland habitat conservation. The technical tasks will generally consist of providing WRP technical assistance for monitoring of existing WRP easements and landowner outreach and assistance.. Technical assistance will include, but is not limited to, promotion of programs, landowner contacts and consultation, on-site visits to assess and determine program eligibility, assistance with application processes, and follow-up.

Landowner contacts will range from initial conversations to the assistance provided for the completion and approval of a primarily WRP but potentially all conservation programs benefiting wetland habitat. Main focus will be on wetland-related practices.

Expected Accomplishments and Deliverables:

a. Provide outreach to landowners to generate interest in wetlands conservation in general and specifically to generate interest and participation in the Wetlands Reserve Program. Outreach activities will include the following:
    i. Developing news releases or news letter articles - 1 per quarter
    ii. Individual landowner consultations – 2 per quarter
b. Participate in site visits for WRP program eligibility determinations – 2 per quarter
c. Participate in site visits for WRP program ranking - 2 per quarter
d. Complete site review of existing WRP projects, as identified by NRCS ,to conduct biological monitoring – 10 per quarter
e. Provide quarterly report of accomplishments to WDFW – 4 per year
f. Provide conservation planning and implementation assistance for other farm bill programs and under the Conservation Technical Assistance Program as directed by NRCS and agreed to by Pheasants Forever and WDFW – 3 per quarter (Note: work must be agreed to in advance and appropriate farm bill funds must be amended into the agreement prior to commencement of any work).

Attachment 2

NRCS Letter of Support

United States Department of Agriculture

NRCS

Natural Resources Conservation Service
316 W. Boone Ave. Suite 450
Spokane, WA 99201-2348

phone 509-323-2900
fax 509 323 2909
web site www.wa.nrcs.usda.gov

January 29, 2013

Don Kraege, Waterfowl Section Manager
Washington Department of Fish and Wildlife
600 Capitol Way North
Olympia, Washington 98501-1091

Dear Mr. Kraege:

I am pleased to write a letter in support of the state migratory bird stamp proposal to advance wetland conservation in eastern Washington through a partnership biologist position.

A partner biologist funded by NRCS and WDFW will help the Natural Resources Conservation Service (NRCS) assess existing wetland easements through biological monitoring, evaluation of restoration methods, and identification of current management needs. Further, the biologist will assist in developing new quality applications for wetland easement with willing landowners. The expected net result is improved habitat in current and future wetland easement projects.

I fully support a partner biologist position and look forward to working with all our partners to advance wetland conservation in eastern Washington.

Sincerely,

, Acting

ROYLENE RIDES AT THE DOOR
State Conservationist

Cc: Bonda Habets, SRC, Spokane State Office, NRCS
Jeff Harlow, ASTC(P), Spokane State Office, NRCS

Helping People Help the Land

An Equal Opportunity Employer and Provider

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: 1/29/2013
Contact: Belinda Rotton
Skagit Wildlife Area

1. Region: 4, North Puget Sound

2. County: Skagit

3. Name of Area: Island Unit, Skagit Wildlife Area

4. Region Priority_____(assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration _____X_____ Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram):

7. Current wetland acreage of project site: 285 acres

8. Current upland acreage of project site: 165 acres

9. If area is not owned by WDFW:
   a. Current ownership:

   b. Zoning:

   c. USGS Quad reference:

   d. Habitat threats:

   e. Public access:

10. Current function (attach additional sheets if necessary)
    a. Primary use (breeding, migration, and/or wintering):

    The primary use of the Island Unit is to provide winter cereal grain enhancements for over wintering waterfowl. This provides necessary high energy foods for the over wintering waterfowl and will improve waterfowl hunting opportunities for the public. The Island Unit is also used by local breeding waterfowl and provides brooding and rearing habitat although this is not the

primary management objective.

b. List species and numbers of waterfowl that use area:

Waterfowl numbers combined for North and South Skagit Bays (68,600), based on aerial survey conducted by District Wildlife Biologists Mike Davidson and Jennifer Bohannon 12/08/2008. The survey species consisted of mallards, green-winged teal, American wigeon, Northern Pintail and Canada geese.

c. List species and numbers of other migratory game bird species that use area:

Other species groups that use the Island include a variety of waterfowl species to include dabbling ducks, geese, swans, and other water birds, raptors and migrant song birds.

d. List species and numbers of other game or diversity species that use area:
(note all endangered, threatened, and sensitive species)

Swans have been observed using the Island Unit occasionally.

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

For the last two years, wildlife area staff have been unable to plant agricultural crops on the Island Unit because of above average rainfall and high river levels that have lasted throughout the growing season. However, during this time, wildlife area staff have been monitoring and assessing drainage issues related to the Island Unit. A contractor that works with many of the local dike and drainage districts was given a tour of the drainage infrastructure of the Island Unit to provide an estimate for a full ditch cleaning project to include some internal culvert replacements. After reviewing all the information it was determined that all though a full ditch clean out may be recommended, a phased approach targeting problem locations may be a preferred and cost effective technique. Instead of cleaning the entire system, the project would target key ditches and culverts to be dredged and cleaned out for the first phase. Monitoring followed by monitor the system for future additional improvements to the drainage. Multiple factors are internal and external to the site impact drainage in this system. This project would assist in isolating some of the internal factors. By phasing this work funds can be allocated to the project in an efficient manner over the life of this project. Please see Attachment A for proposed locations of ditch dredging and culvert cleaning.

Wildlife area staff have received a price quote to dredge the entire drainage system on the Island Unit that was approximately $35,000.00.

There are several goals of this project which include to regain or increase our window for agriculture planting of the Island Unit with millet or other cereal grain varieties through improved drainage capabilities, to be able to manipulate water levels more effectively throughout the year, and provide staff the opportunity to manipulate (disc/ mow) areas of the Unit that have been inundated with water and are covered by cattails and reed canary grass. This will also improve conditions for public access and hunting opportunities.

b. Description of required maintenance and schedule:

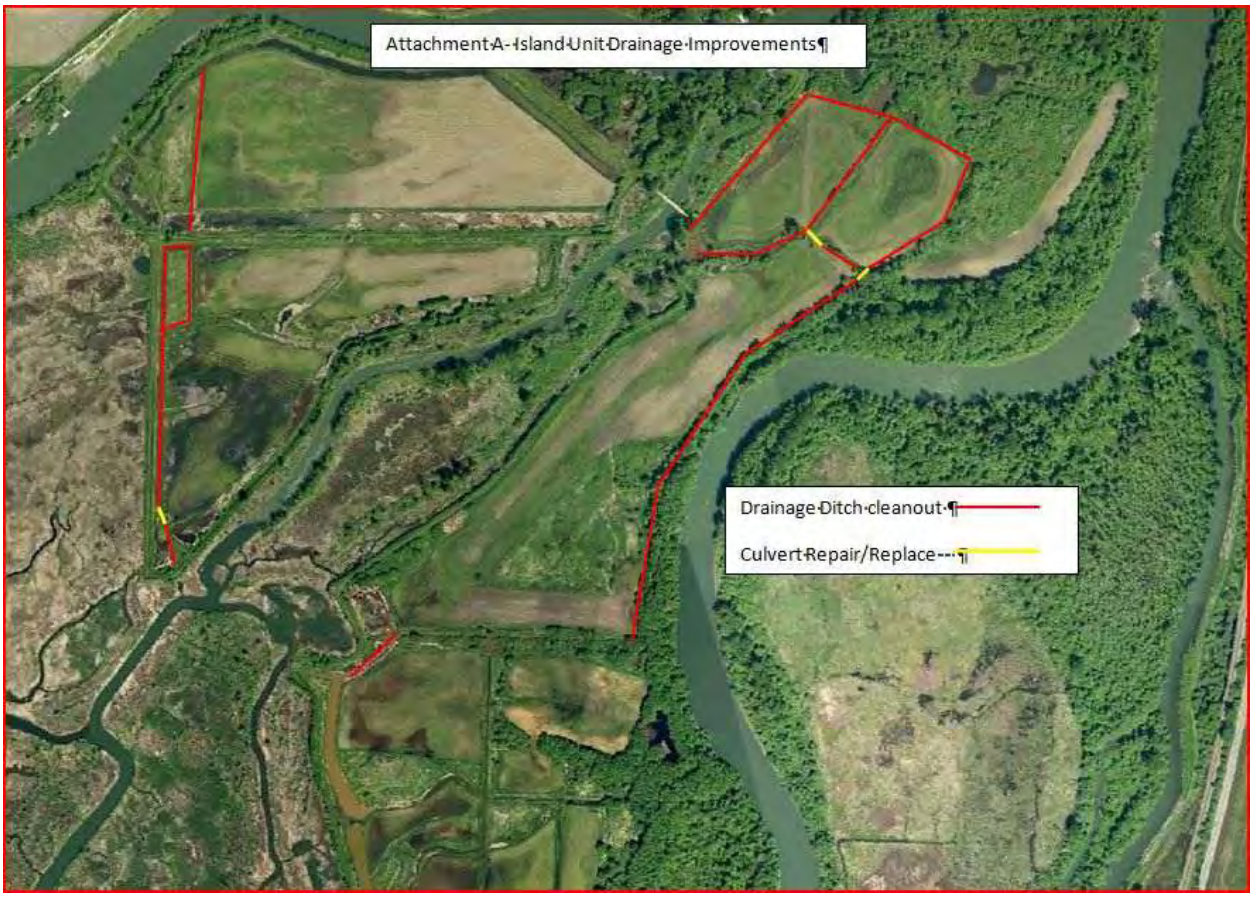
Wildlife Area Staff and volunteers will monitor water levels throughout the year, along with beaver dam removal, and tidegate manipulations.

c. Description of current water supply and water rights if applicable: NA

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat		
*Pair, resting water		
*Nesting cover		
*Winter food resources	165 acres	165 acres
*Hunting area	165 acres	165 acres

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:



2. Cost Estimate (**Annual Costs**)

		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET			
OPERATING BUDGET			
A/B	Salaries/Benefits		
C	Personal Services		
E	Goods and Services	$20,000.00	
G	Travel		
J/K	Equipment		
N	Grants		
Other			
TOTAL COST		$20,000.00	
Est. Annual Costs after June 30, 2015:			

2011-2013 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program

Migratory Bird Habitat Project Proposal

Date: January 31, 2013
Contact: Dan Peterson

1. Region: 2 - Ephrata

2. County: Douglas

3. Name of Area: Wells Wildlife Area, Washburn Island Unit

4. Region Priority_____(assigned by Regional Wildlife Program Manager)

5. Enhancement ___V_____ Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram):
Washburn Island, Okanogan County, on the Columbia River about 3 miles east of the mouth of the Okanogan River.

7. Current wetland acreage of project site: 2 small potholes (about ¼ acre). The project is adjacent to the Columbia River and within 100 yards of Washburn Pond (about 125 acres of open water and wetland).

8. Current upland acreage of project site: 120 acres. Total acreage of Washburn Island is 215.

9. If area is not owned by WDFW:
   a. Current ownership: Douglas County Public Utilities No.1 (Managed by WDFW under a long term agreement)

   b. Zoning: Agricultural

   c. USGS Quad reference: Bridgeport, Washington Quadrangle. T30N, R25E, E1/2 E1/2, Section 22

   d. Habitat threats: None on site.

   e. Public access: Open to public.

10. Current function (attach additional sheets if necessary)
   a. Primary use (breeding, migration, and/or wintering):
   The area's main function is providing non-waterfowl and waterfowl with high quality migration and winter forage. Breeding habitat is currently limited but could be improved through more effective weed control efforts.

   b. List species and numbers of waterfowl that use area: 329 Canada goose; 3,090 mallard; 706 gadwall; 4,780 American wigeon; 1,802 redhead; 2,533 canvasback; 3,711 scaup; 2,700 ringneck;

1,311 goldeneye; 1,085 bufflehead. (Three aerial surveys of waterfowl on the adjacent Wells pool are made each fall/winter. Species numbers are three-year averages ending in January of 2010 – the most recent data available.)

c. List species and numbers of other migratory game bird species that use area:
5,000+ Mourning Dove

d. List species and numbers of other game or diversity species that use area:
(note all endangered, threatened, and sensitive species)
Wells Pool Area: California quail, gray partridge, ring-necked pheasant (50), mule deer, coyote, beaver, muskrat, common loon (SS) American white pelican (SE), Sandhill Cranes (SE), golden eagle (SC), bald eagle (FT, ST), sage grouse (FC, ST), sharp-tailed grouse (FCo, ST), white tailed jack-rabbit (SC), peregrine falcon (FCo, SS), American kestrel, prairie falcon, osprey, northern harrier, red-tailed hawk, rough legged hawk, barn owl, great-horned owl, saw-whet owl, long-eared owl, eared grebe, killdeer, long-billed curlew, great-blue heron, double-crested cormorant, common raven, numerous songbirds and neotropical migrants.

Status codes: FT: Federal Threatened, FC: Federal Candidate, FCo: Federal Species of Concern, SE: State Endangered, ST: State Threatened, SC: State Candidate, SS: State Sensitive

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagram and/or aerial photo showing improvements): 1) Grow and irrigate approximately 10 acres of winter wheat, and 55 acres of wheat, barley, corn and/or millet on Washburn Island. Although the Wells WA is independently funded, its current budget will not accommodate the continuation of this development. The island's pivot irrigation system will allow for cost effective irrigation of this site. 2) Noxious weed control within existing permanent cover (55 acres). This will improve nesting, breeding and wintering habitat for waterfowl and non-waterfowl alike. Any herbicide applications will be performed by spot spraying via ATV's and backpack sprayers.

b. Description of required maintenance and schedule: Spring wheat, barley, corn and millet will require ground preparation (March/April), seeding (late April, early May), weed control (June) and irrigation (April through July). Winter wheat will require ground preparation and seeding in late fall October, 2013.

c. Description of current water supply and water rights if applicable: The present water right is sufficient to irrigate the entire Island. The water supply is the Columbia River.

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat		
*Pair, resting water		
*Nesting cover		
*Winter food resources	65 acres	65 acres
*Hunting area	65 acres	65 acres

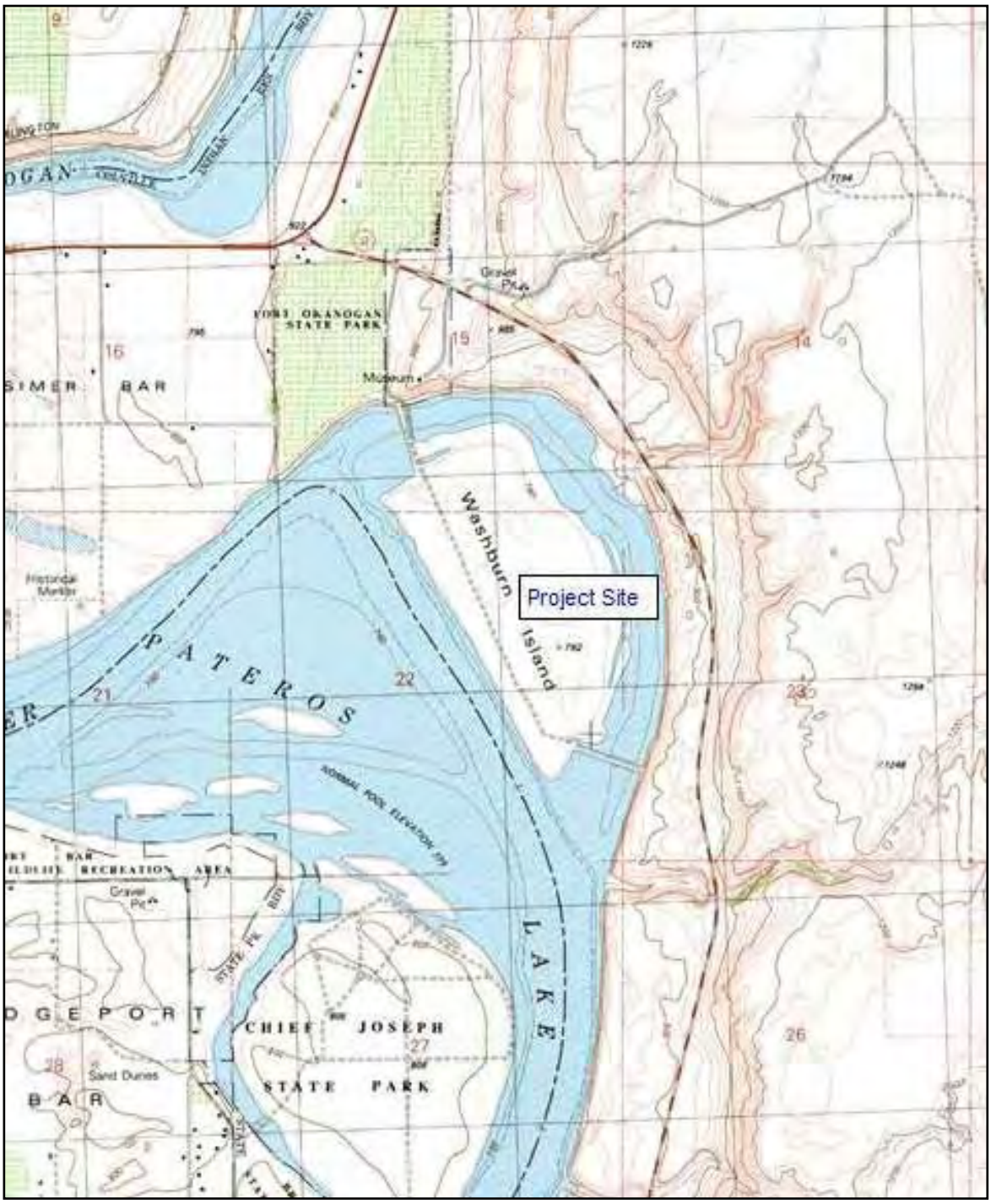
d. Description of baseline survey/habitat information available and monitoring planned to measure benefits: Mourning dove use of the site appears to have increased, particularly prior to the start of hunting season. Waterfowl use in the fall and winter of 2012 was excellent with large flocks of geese and mallards using the wheat and barley fields. Monitoring will include the continuation of the island's hunter registration program to assess changes in hunting success. Waterfowl and dove use will be monitored regularly throughout the spring, fall and winter.

12. Cost Estimate (**Annual Costs**)

		July 1, 2012-June 30, 2013	**July 1, 2013-June 30, 2014**
CAPITAL BUDGET			
OPERATING BUDGET			
A/B	Salaries/Benefits	7,500	7,650
C	Personal Services	0	0
E	Goods and Services	8,650	8,825
G	Travel	0	0
J/K	Equipment	0	0
N	Grants	0	0
Other			
TOTAL COST		16,150	16,475
NOTE: Estimated costs are based on recorded expenditures in 2012 and adjusted for inflation at a rate of 2%.			

MIGRATORY BIRD HABITAT PROJECT SITE

WASHBURN ISLAND WILDLIFE AREA



MIGRATORY BIRD HABITAT PROJECT SITE

WASHBURN ISLAND WILDLIFE AREA

PLANNED IMPROVEMENTS

Red: Spring Wheat
Pink: Winter Wheat
Blue: Spring Barley
Yellow: Corn and or millet

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: 1/30/13
Contact: Richard Kessler

1. Region: 4

2. County: Whatcom

3. Name of Area: Whatcom Wildlife Area, Lake Terrell, Intalco, BP, Nooksack, and Tennant Lake Units

4. Region Priority_____(assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration _____X_____ Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram): Whatcom Wildlife Area, Whatcom County

7. Current wetland acreage of project site: 1000

8. Current upland acreage of project site: 5000

9. If area is not owned by WDFW:

   a. Current ownership: WDFW

   b. Zoning: Recreational and agricultural

   d. USGS Quad reference: Lummi Bay and Ferndale quad maps T38 & T39, R1E & R2E

   e. Habitat threats: rural development, weed encroachment

   f. Public access: Full public access for hunting, fishing etc on 4380 acres

10. Current function (attach additional sheets if necessary)

   a. Primary use (breeding, migration, and/or wintering):
   Primarily waterfowl feeding and breeding sites. Heavily utilized by nesting waterfowl.
   Acreage includes two established Game Reserves.

   b. List species and numbers of waterfowl that use area:
   Peak wintering waterfowl numbers reach 15,000. Species utilizing area include all North American puddle ducks, greater Canadian geese, whistler and trumpeter swans, and a variety of diver ducks.

   c. List species and numbers of other migratory game bird species that use area:
   Mourning dove-250

   d. List species and numbers of other game or diversity species that use area:
   (note all endangered, threatened, and sensitive species)

Pileated woodpecker (threatened), bald eagles, falcons, several raptor species, rails, bitterns, and several passerine species

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

There are currently approximately 60 wood duck nesting boxes installed on four units of the wildlife area. They are all in various states of repair, the majority of which need to be replaced with new boxes constructed with quality materials. We would purchase materials to construct approximately 75 new and replacement boxes which will be built by volunteers and WDFW staff over two years. We will purchase 1" x 12" x 10' Cedar Boards, Cedar Shavings, Hardware Cloth, and Galvanized Screws. The boxes will be installed on the Lake Terrell, Intalco, BP, Tennant Lake and Nooksack units. All boxes will be monitored in the Spring by WDFW employees and volunteers to record nesting and breeding success.

b. Description of required maintenance and schedule:
The boxes will be cleaned and repaired each Spring by WDFW employees and volunteers.

c. Description of current water supply and water rights if applicable:

d. Benefits to migratory game birds and recreation (quantify benefits below):

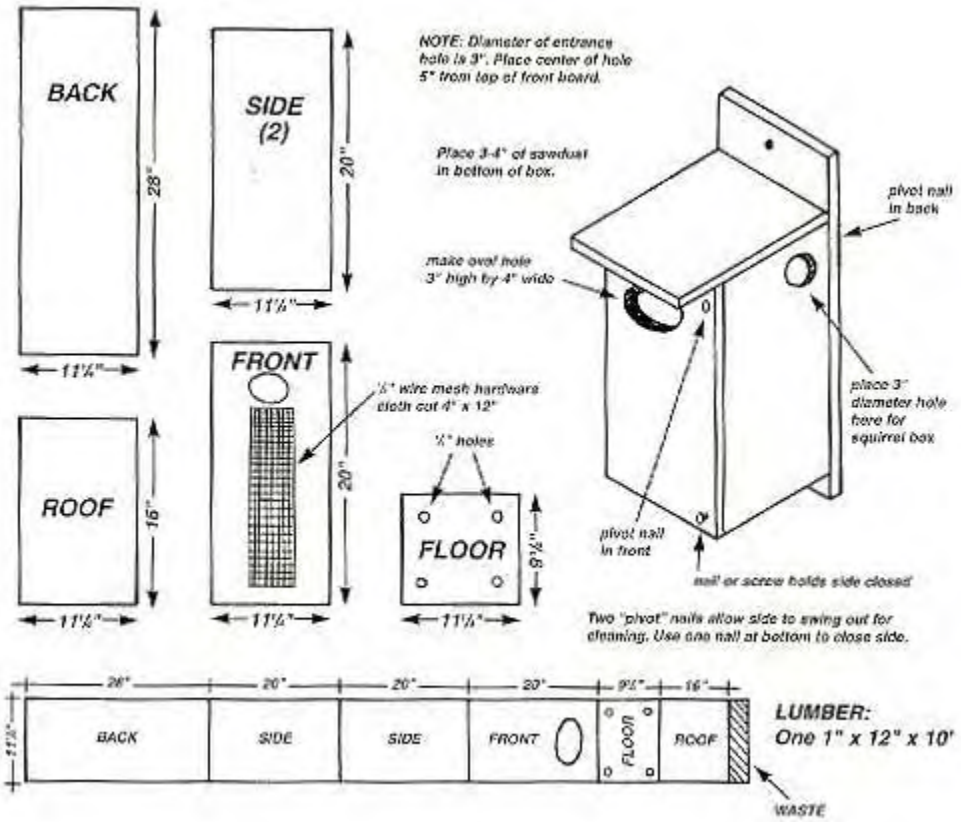
Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat	100	
*Pair, resting water	100	
*Nesting cover	100	
*Winter food resources		
*Hunting area		

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:
Existing Wood Duck nest boxes are currently cleaned, repaired and monitored for nesting success by WDFW employees and volunteers. Boxes in poor condition will be replaced with new boxes. Additional new boxes will be installed in available habitat. Monitoring of existing and new boxes will continue and nesting success will be compared to the existing box totals.

2. Cost Estimate (**Annual Costs**)

		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET			
OPERATING BUDGET			
A/B	Salaries/Benefits		
C	Personal Services		
E	Goods and Services	$1000.00	$1000.00
G	Travel		
J/K	Equipment		
N	Grants		
Other			
TOTAL COST		$1000.00	$1000.00
Est. Annual Costs after June 30, 2015:			

Wood Duck Nest Box Designs



Point Roberts Unit
Blaine
Lynden
British Petroleum Unit
Lake Terrell Unit
Intalco Unit
Ferndale
Tennant Lake Unit
Nooksack Unit
Whatcom County
Lummi Indian Reservation
Bellingham
Moran State Park
Larrabee State Park
Pine Lake Unit
Whatcom Wildlife Area
Wood Duck Nest Box
Units 2013
Miles
WA Dept of Fish and Wildlife (WDFW) Administered Land
Department Owned Land
Lands Managed under the Featured Wildlife Area
WDFW Access Site
Map Produced: November, 2006

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: 1/17/13
Contact: Richard Kessler

1. Region: 4

2. County: Whatcom

3. Name of Area: Lake Terrell Unit, Whatcom Wildlife Area

4. Region Priority_____(assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration _____X_____ Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram): Whatcom Wildlife Area, Lake Terrell Unit

7. Current wetland acreage of project site: 1300

8. Current upland acreage of project site: 1000

9. If area is not owned by WDFW:

   a. Current ownership: WDFW

   b. Zoning: Recreational and agricultural

   d. USGS Quad reference: Lummi Bay quad map T39, R1E, Sec 28

   e. Habitat threats: rural development, weed encroachment

   f. Public access: Full public access for hunting, fishing etc on 2300 acres

10. Current function (attach additional sheets if necessary)

   a. Primary use (breeding, migration, and/or wintering):
   Primarily a wintering waterfowl area. Heavily utilized by nesting waterfowl as well.
   Acreage is adjacent to an established Game Reserve.

   b. List species and numbers of waterfowl that use area:

   Peak wintering waterfowl numbers reach 10,000. Species utilizing area include all North American puddle ducks, greater Canadian geese, whistler and trumpeter swans, and a variety of diver ducks.

   c. List species and numbers of other migratory game bird species that use area:
   Mourning dove-250

   d. List species and numbers of other game or diversity species that use area:
   (note all endangered, threatened, and sensitive species)

Pileated woodpecker (threatened), bald eagles, falcons, several raptor species, rails, bitterns, and several passerine species

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

The south end of Lake Terrell has many islands that are used by waterfowl for nesting. High winds, winter storms, waves cause erosion of the shores of the islands. Beavers are also removing many shoreline trees. This project would purchase Pacific Willow and Ninebark shrubs and plant them along the shores to help stabilize the eroding island shorelines. Volunteers and WDFW employees would plant the shrubs.

b. Description of required maintenance and schedule: Little maintenance will be required after planting.

c. Description of current water supply and water rights if applicable:

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat		
*Pair, resting water		
*Nesting cover	10 acres	10 acres
*Winter food resources		
*Hunting area		

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:

The average number of wintering waterfowl using Lake Terrell is 10,000. These waterfowl utilize the planted grain crops as a food source during winter. The Lake Terrell WLA Manager monitors and documents wintering waterfowl use. All WDFW ownership has been surveyed for habitat types, acreage, and wildlife use.

2. Cost Estimate (**Annual Costs**)

		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET			
OPERATING BUDGET			
A/B	Salaries/Benefits	$250.00	
C	Personal Services		
E	Goods and Services	$1,000.00	
G	Travel		
J/K	Equipment		
N	Grants		
Other			
TOTAL COST		$1,250.00	
Est. Annual Costs after June 30, 2015:			

Virtual Earth
Washington Department of Fish and Wildlife
Whatcom Wildlife Area
Lake Terrell Unit
Public Recreation Lands
Lake Terrell
Kickerville Road
Islands
Headquarters Parking & Entry
North Star Road Parking & Entry
North Star Road
Rainbow Road Parking & Entry
Islands
North Star Road Launch
North Star Road Parking & Entry
Lake Terrell Road
Lake Terrell Road Parking and Entry
Waterfowl Blinds
Fully accessible
Launches
Safety zone lines
Safety zone
Mountain View Road

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: January 29, 2013
Contact: Kyle Guzlas

1. Region: 6

2. County: Grays Harbor

3. Name of Area: Davis Creek Wildlife Area Unit

4. Region Priority___5_____(assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration _X_____ Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram): maps attached

7. Current wetland acreage of project site: 60

8. Current upland acreage of project site: 200

9. Current function (attach additional sheets if necessary)

a. Primary use (breeding, migration, and/or wintering):
The site provides breeding, nesting, and migrating habitat for numerous priority waterfowl species. The following tables display species use in the Lower Chehalis valley and Grays Harbor.

HIGH PRIORITY SPECIES	BREEDING	WINTERING	MIGRATION
1. Dusky Canada Goose		X	X
2. Tule Greater White-fronted		X	X
3. Cackling Canada Goose		X	X
4. Greater Scaup	X	X	X
5. Lesser Scaup	X	X	X
6. Mallard	X	X	X
7. Northern Pintail	X	X	X

OTHER PRIORITY SPECIES	BREEDING	WINTERING	MIGRATION
1. Ring-necked Duck		X	X
2. Wood Duck	X	X	
3. American Wigeon		X	X
4. Pacific Greater White-fronted G		X	X

OTHER WATERFOWL	BREEDING	WINTERING	MIGRATION
1. Bufflehead		X	X
2. Western Goose		X	X
3. Common Goldeneye		X	X
4. Gadwall		X	X
5. Green-winged Teal		X	X
7. Hooded Merganser	X	X	X
8. Redbreasted Merganser		X	X

b. List species and numbers of waterfowl that use area:

The following table displays the waterfowl usage by species within the general vicinity of the project including the project lands.

SPECIES	BREEDING	WINTERING	MIGRATION
1. Dusky Canada Goose	40	40-250	> 10,000
2. Tule Greater White-fronted Go	150	75	
3. Cackling Canada Goose	800	500	
4. Greater Scaup	75	150	
5. Lesser Scaup	100	150	
6. Mallard	3500	> 10,000	
7. Northern Pintail	2000	> 8,000	
8. Ring-necked Duck	210	250	300
9. Wood Duck	35	X	
10. American Wigeon	4000	> 11,000	> 80,000
11. Pacific Greater White-fronted	25	> 100	> 1,000
12. Bufflehead	200	150	
13. Canada Goose	300	> 10,000	> 120,000
14. Common Goldeneye	45	125	
15. Gadwall	25	X	
16. Green-winged Teal	1500	2,000	> 8,000
18. Hooded Merganser	30	75	
19. Redbreasted Merganser	50	75	

c. List species and numbers of other migratory game bird species that use area:

The lower Chehalis River and associated wetlands are used by numerous migratory birds each year. Species that will benefit most from this project from are the Northern harrier, Sand hill crane, Black-bellied plover, Whimbrel, Marbled Godwit, Red knot, dunlin, Short-billed dowitcher, Short-eared owl, Northern rough-winged swallow, and the Marsh wren.

d. List species and numbers of other game or diversity species that use area: (note all endangered, threatened, and sensitive species)

Trumpeter (275) and Tundra (30-40) Swans
Bittern
Mink
Red-tailed Hawk

<u>Federal Listing</u>

Bull Trout, Threatened, found in Grays Harbor and tributaries and shoreline, will benefit from protected riparian areas and creeks and sloughs flowing through project area

<u>State Listings</u>

Vauxs Swift, State Candidate, feeding and breeding
Olympic Mudminnow, State Sensitive species, project sites include considerable habitat for this endemic species
Columbia Torrent salamander, State Candidate species
Dunns salamander, State Candidate species
Van Dykes salamander, State Candidate species
Other Species of State Concern: **Newcomb′s Littorine Snail, River Lamprey**

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

This project will complement other efforts in the Lower Chehalis Valley to enhance the wintering waterfowl habitat conditions. This will be conducted through a variety of means including; mowing of wet swales and field locations that are consistently utilized by waterfowl and discing of wet swales for smartweed promotion.

Field Mowing will occur on approximately 10 acres and disking will occur on approximately 9 acres (two different locations based on a rotation).

This wildlife area unit was acquired in 2006 with North American Wetland Conservation Act (NAWCA) funding for conservation of these critical wetland areas that have a high density of waterfowl utilization. There are few public hunting opportunities in the highly productive Chehalis valley and this project will ensure that this site provides a quality hunt location.

b. Description of required maintenance and schedule:

In 2013, 10 acres will be mowed to promote sheet water habitat adjacent to several backwater side channels of the Chehalis River. Also during this time, approximately 4.5 acres will be disced/tilled for the promotion of smartweed on the swale noted on the attached map.

In 2014, 10 acres will again be mowed and an additional 5 acres will be disced/tilled for the promotion of smartweed as displayed on the attached map.

c. Description of current water supply and water rights if applicable:

The project is located on the Chehalis River floodplain and amidst multiple side channels and tributary creeks. \

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat		
*Pair, resting water		
*Nesting cover		
*Winter food resources	19	19
*Hunting area	38	38

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:
The area is surveyed as part of breeding waterfowl section surveys as well as part of midwinter inventory. The enhancement activities will be monitored throughout the year to ensure the productivity of the project.

2. Cost Estimate (<u>Annual Costs</u>)

		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET			
OPERATING BUDGET		$2,990	$2,990
A/B	Salaries/Benefits	$1,990	$1,990
C	Personal Services		
E	Goods and Services	$1,000	$1,000
G	Travel		
J/K	Equipment		
N	Grants		
Other			
TOTAL COST		$2,990	$2,990
Est. Annual Costs after June 30, 2013: $2,990/yr			

South Puget Sound Wildlife Area Complex

Davis Creek Unit (Koopmans)

Legend

- WDFW - Davis Creek Unit (Koopmans)
- Public Access Locations

N
W E
S

0 20 40 Miles

1 inch = 62,500 feet 1:9,000

For general use only - map displays approximate ownership boundaries - Respect Private Property

Legend

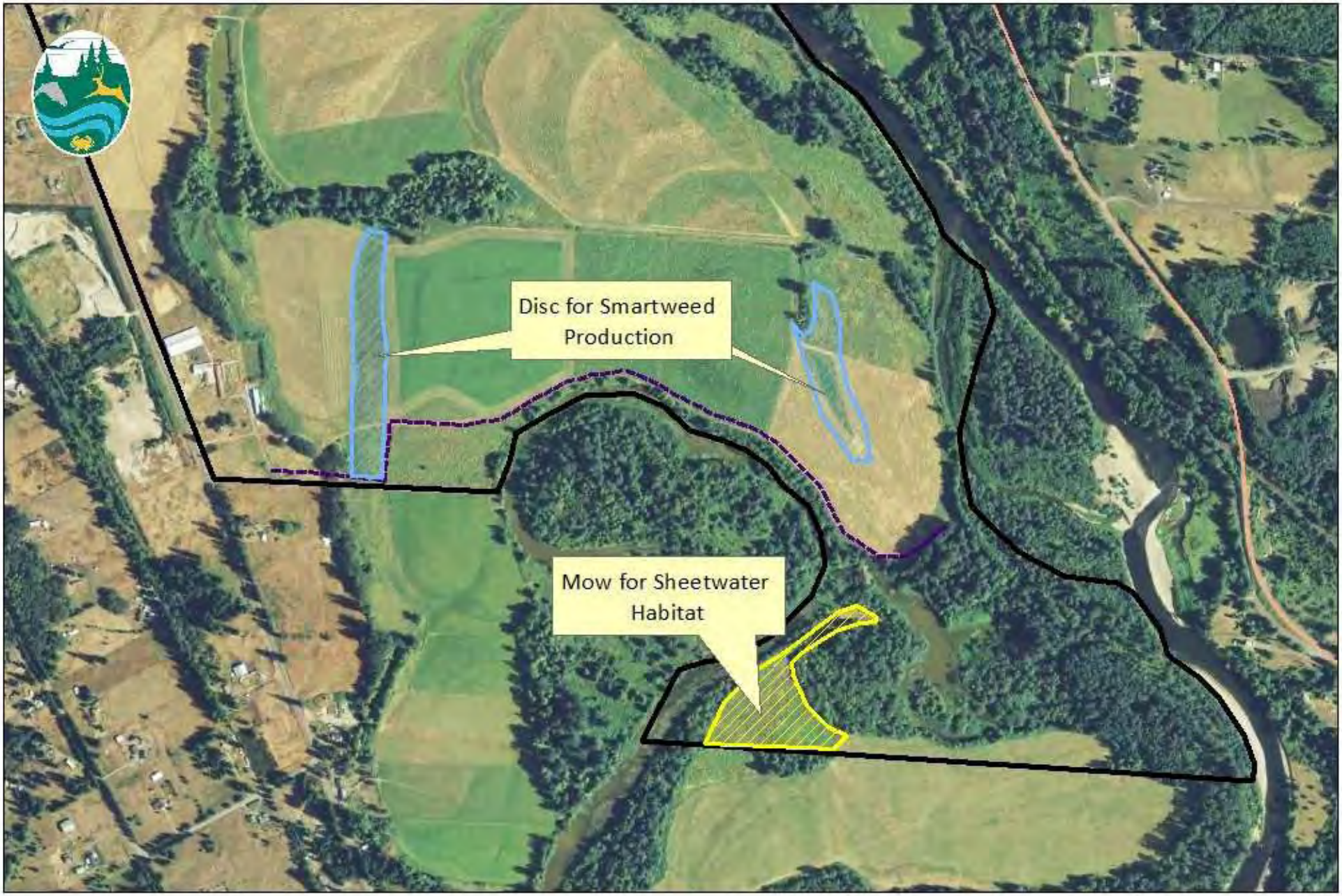
Davis Creek (Koopmans) Unit

Trail

Developed Parking Area

0 0.25 0.5 Miles

N



Legend

Davis Creek (Koopmans) Unit

0 0.125 0.25 Miles

N

DAVIS CREEK (KOOPMANS FARM) UNIT – 500 acres

The Davis Creek (Koopmans) Unit is located just outside the town of Oakville near State Highway 12. Habitat characteristics of the property owned by WDFW are characterized as open wetland, riparian, shrub, meadow/field and oak woodland. The property hosts a number of recreational activities and is actively farmed for hay through an agricultural lease. Other popular activities include hunting for waterfowl, deer, elk, and doves. The site also hosts numerous specially permitted events for dog field trials and training. There is Chehalis River access for fishing on the eastern boundary of the property. This is an excellent birding area and is recognized by the Puget Lowlands Riparian Bird Conservation Area as a priority habitat. There are several options for waterfowl hunting at this unit including field swale and sheet water habitats, Chehalis River backchannels, and Davis Creek beaver dam associated wetlands.

Scouting Report

Dabbling Ducks:
Moderate numbers of mallards, pintail, wigeon and teal. Wood ducks may be found early in the season.

Diving Ducks:
Buffleheads and Ring-necked ducks.

Geese:
Canada geese may occur throughout the season.

Legend

Davis Creek (Koopmans) Unit — Trail

Developed Parking Area

0 0.25 0.5 Miles

N

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: 31 January 2013
Contact: Dawn Davis

1. Region: Eastern Region 1

2. County: Walla Walla

3. Name of Area: Reser Creek drainage

4. Region Priority_____(assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration _X_____ Acquisition _____ (check one or both)

6. Location of project site (attach map, aerial photo, and/or diagram): Walla Walla Co., T6N R36E Sec. 1&2

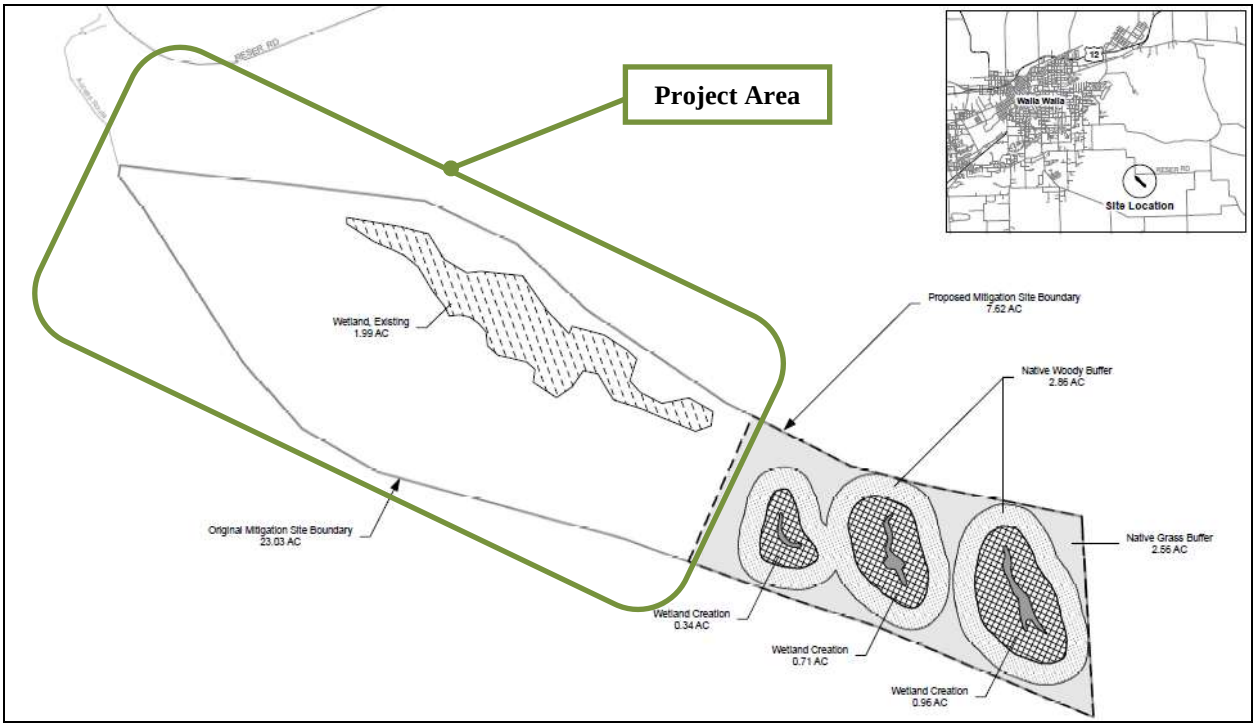


Figure 1. Location of project area.

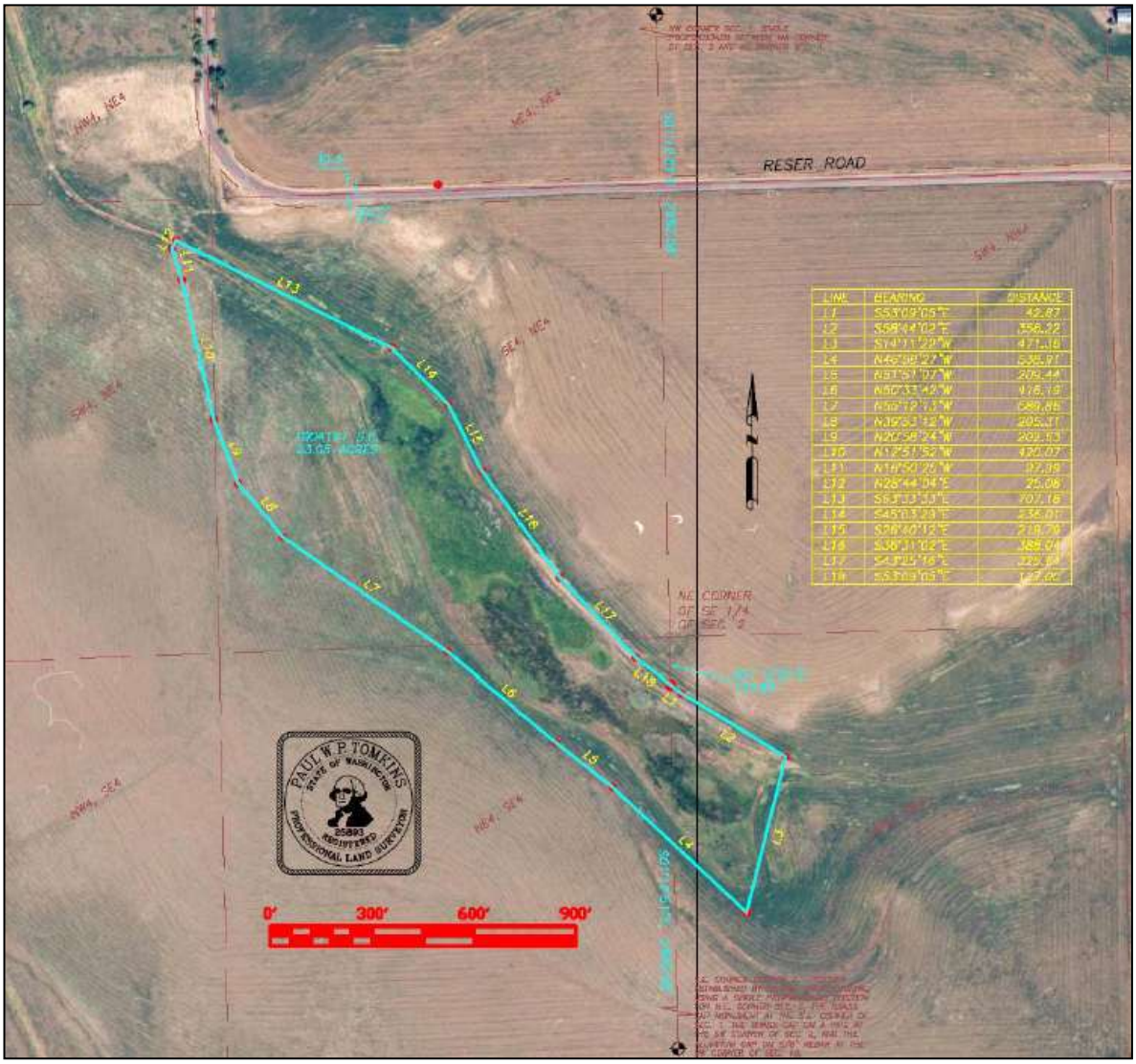


Figure 2. Aerial photo of project area prior to pond excavation.

7. Current wetland acreage of project site: Approximately 2 acres, as surveyed in 2009

8. Current upland acreage of project site: Approximately 14 acres

9. If area is not owned by WDFW:
   a. Current ownership: Private – Wilpacs Partnership

   b. Zoning: Exclusive Agriculture Zone 120 acre minimum lot size

   c. USGS Quad reference: Walla Walla

   d. Habitat threats: Degradation of wetland and upland habitats due to invasive weeds and lack of habitat complexity

   e. Public access: Hunting Only by Written Permission cooperative agreement with WDFW

10. Current function (attach additional sheets if necessary)
    a. Primary use (breeding, migration, and/or wintering):

This site is used by numerous game and diversity species to fulfill various life history needs throughout the year. Avian species (non-waterfowl) known to occur based on site observations are included in the table below.

Species	Primary Use	Conservation Status
Northern Harrier	nesting, wintering	
American Kestrel	foraging	
Red-tailed Hawk	foraging, wintering	
Golden Eagle	incidental	State Candidate species
Bald Eagle	migration, wintering	State Sensitive; Federal Species of Concern
Swainson's Hawk	foraging	
Prairie Falcon	foraging	
Ring-necked Pheasant	nesting, foraging, wintering	PHS species
California Quail	foraging, wintering	
Wild Turkey	foraging	PHS species
Common Nighthawk	migration	
Marsh Wren	nesting	
House Wren	nesting	
American Goldfinch	foraging	
Pine Siskin	migration	
Black-headed Grosbeak	migration	
White-throated Swift	migration	
Vaux's Swift	migration	State Candidate species
Barn Swallow	foraging	
Cliff Swallow	foraging	
Bank Swallow	foraging	
Northern Rough-winged Swallow	foraging	
Violet Green Swallow	foraging	
Western Bluebird	migration	
American Robin	migration	
Townsend's Solitaire	migration	
Song Sparrow	nesting, wintering	
Savannah Sparrow	nesting	
Grasshopper Sparrow	nesting	
Vesper Sparrow	nesting (incidental)	
Lincoln's Sparrow	nesting	
White-crowned Sparrow	wintering, migration	
Orange-crowned Warbler	migration	
Yellow-rumped Warbler	migration	
Yellow-breasted Chat	migration	
Western Meadowlark	foraging, wintering	
Red-winged Blackbird	nesting	
American Coot	migration	
Virginia Rail	Nesting	
Wilson's Snipe	nesting	
Kildeer	nesting	
Sandpiper species	migration	PHS species
Wilson Phalarope, Stilts, and Avocets	migration	PHS species
Great Blue Heron	foraging	PHS species

b. List species and numbers of waterfowl that use area:

Although there is no open water on the 16 acre site, the adjoining mitigation site has 3 ponds totaling just over 2 acres that is used by waterfowl and non-waterfowl. Little waterfowl production occurs in this region, however, regular waterfowl concentrations (excluding Canada Goose) of up to 30 individuals occur within the 23 acre easement throughout the year, but especially during migration. Ponds are frequented by dabbling ducks (Northern Pintail, Mallard, American Widgeon, Northern Shoveler, Green-winged Teal) and concentrations of Grebes. Bufflehead have been observed and other cavity-nesting ducks (Wood Duck, Goldeneye, Hooded Merganser) are expected to occur. Redhead and Ring-neck Duck have also been observed. The area supports a relatively high number (~100) of Canada Geese at different times throughout the year. Incidental sightings of Tundra Swans have also been reported.

c. List species and numbers of other migratory game bird species that use area:

Coot and Snipe have been observed; Mourning Dove are expected to occur.

d. List species and numbers of other game or diversity species that use area:
(note all endangered, threatened, and sensitive species)

Amphibians and Reptiles:

Columbia Spotted Frog (State Candidate)
Long-toed Salamander
Pacific Chorus Frog
Pacific Gopher Snake
Garter Snake
Common Racer

Birds: See list of avian species above. Sora Rail are expected to occur. Tri-colored Blackbirds are expected to occur once native woody vegetation is established.

Mammals:

Regular occurrence of Elk (PHS species), White-tailed Deer (PHS species), and Mule Deer (PHS species) are common. Incidental sightings of Moose and Gray Wolf (Endangered) have been reported.

11. Project Description (attach additional sheets if necessary)

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

The project will improve wetland and upland habitats for migratory waterfowl and other diversity species on 16 acres in Walla Walla County by controlling weeds and adding woody vegetation. The 16 acre site is part of a 23 acre conservation easement secured in 2009 by Blue Mountain Land Trust. The easement was developed after the Tri-State Steelheaders entered into an agreement with Washington Department of Transportation (WSDOT) to provide mitigation for impacts to existing wetlands during improvements to Highway 12, and in turn, received in-lieu fee mitigation funds for the project.

After securing the 23 acre easement, Ducks Unlimited surveyed the site, collected groundwater data, and completed soil profiles to determine the placement and final design of the wetlands to be created. Three ponds totaling approximately 2 acres were excavated in 2010. The 16 acre site includes approximately 2 acres of pre-existing cattail marsh and the entire 23 acre site was seeded to a native grass mix in spring 2011. In 2011 and 2012, broadleaf weeds were sprayed throughout the site. In early 2012, it was determined by WSDOT that the 7 acre section was meeting mitigation targets, and the mitigation site was re-drawn as the 7 acre site. That leaves the

remaining 16 acres under easement, but without funding for weed control and woody plantings. The 16 acres are the subject of this proposal and is being pursued, in part, due to its high restoration potential. The mitigation site was developed on the remaining 7 acres, which is not part of this proposal.

The long term strategy for this site is for weed control through competition with the native grass stand. However, in the short term, weed control will need to be accomplished through boom spraying, spot spraying, and mechanical control until the grass stand matures. Current dominant weedy species are dog fennel, tarweed, bedstraw, reed canary grass, and mullein.

Prior to the easement, the site was farmed in dryland wheat, and has no existing woody vegetation. Upland habitat will be developed through the planting of woody shrubs and trees. Woody wetland species will be added to provide complexity for the wetland areas, providing critical habitat for migratory birds and resident wildlife. Due to the widespread cultivation of wheat, exposed soils are susceptible to erosion that subsequently leads to excessive sedimentation. Thus, the proposed project provides an opportunity to reestablish native habitat in an area where few uncultivated acres are left. Because the site is a headwater to a fish-bearing stream, the proposed project will also help to reduce erosion and sedimentation, thereby protecting both creeks and rivers downstream and, ultimately, recreational fisheries.

Figure 3. Aerial photo of project area following pond excavation to develop over 2 acres of wetland habitat.

Figure 4. Mitigation site before construction (left) and after excavation of 3 wetland ponds (right).

Figure 5. Existing conditions on 16 ac project area as of 8/3/09. Wheat is in the foreground.

Figure 6. Existing conditions on 16 ac project area as of 5/24/12. Wheat is in the foreground

b. Description of required maintenance and schedule:

Broadcast spraying (boom sprayer) will be scheduled twice per year (spring, fall). Spot spraying (backpack) will be used as needed, and where broadcast spraying is not practical (e.g., to avoid killing desirable plants or in places too wet for vehicles to travel). Hand removal of weeds will occur as needed for small patches of weeds and for weed species that do not respond well to spraying (such as mullein).

Supplemental plantings of woody species will be added as needed to replace plants due to poor establishment/survival and loss due to deer and elk damage.

c. Description of current water supply and water rights if applicable:

Water is supplied by seasonal surface water and high groundwater. The cattail wetland on site existed prior to any mitigation project activities. The wetland continues to be supplied by groundwater. After the ponds were developed on the mitigation site, surface flow out of the ponds seasonally runs off the mitigation site downslope to the proposed project area. The cattail and baltic rush are expanding on the site with the new change in hydrology. There are no water rights associated with the project.

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat	16	16
*Pair, resting water	2	2
*Nesting cover	16	16
*Winter food resources	16	16
*Hunting area	16	16

f. Description of baseline survey/habitat information available and monitoring planned to measure benefits:

A topographic survey was completed by Ducks Unlimited in 2009and the Blue Mountain Land Trust completed a baseline document as part of the conservation easement. As-built surveys were completed in 2011. In addition, the site was evaluated by WSDOT in the development of the mitigation plan, and the following is the description, in part, of the 23 acre site from the US Highway 12: Frenchtown Vicinity to Walla Walla Final Wetland Mitigation Report:

Soil Series	Catherine silt loam, 0-3% slopes
Munsell Color	10 YR 3/1
Hydrologic Functions	12
Water Quality Functions	12
Habitat Functions	17
Ecology Rating	III

The 23 acre wetland site is in a topographical depression surrounded by cultivated dryland wheat. The existing 2 acre wetland is comprised of emergent and transitional herbaceous vegetation. The site provides refuge for migratory birds, game, and other diversity species and is one of the few stands of native habitat and uncultivated areas in the vicinity. A series of springs provide hydrology to the wetland, which forms part of the headwaters of the Middle Fork of Reser Creek, a tributary of the Walla Walla River.

Soil erosion has filled an area on the east end of the site that historically was an open-water pond. This shallow area is now covered with a mix of Baltic rush and various invasive species such as Canada thistle, mullein, and teasel. It is in this area that approximately 2 acres of wetlands were established in 2010 by excavating down to create palustrine emergent and/or scrub-shrub wetland. The excavated area was planted with native herbaceous and woody wetland vegetation that will transition into an enhanced buffer zone. The remaining acreage of the site was enhanced through native plant establishment and will be preserved by weed control. The site consists of approximately 2 acres of existing wetland, 3 ponds, totalling just over 2 acres excavated to create new wetlands, and approximately 20 ac of enhanced upland buffer habitat.

This project will be conducted in partnership with the Tri-State Steelheaders. WSDOT will monitor the 7 acre mitigation site to ensure performance goals are met over the course of a 5 year period (2010-2015). Blue Mountain Land Trust, which holds the easement in perpetuity, will be responsible for maintenance and monitoring thereafter. Monitoring on the proposed 16 acre site will include documenting plant survival, photos, and qualitative assessment.

13. Cost Estimate (**Annual Costs**)

		July 1, 2013-June 30, 2014	**July 1, 2014-June 30, 2015**
CAPITAL BUDGET		0	0
OPERATING BUDGET			
A/B	Salaries/Benefits	5,200	5,200
C	Personal Services	0	0
E	Goods and Services	2,000	2,000
G	Travel	0	0
J/K	Equipment	200	0
N	Grants	0	0
Other		0	0
TOTAL COST		7,400	7,200
Est. Annual Costs after June 30, 2015: 3,500			

2013-2015 Proposal Form

Washington Department of Fish and Wildlife
Migratory Bird Stamp and Art Print Program
Migratory Bird Habitat Project Proposal

Date: 1/31/13

Contact: Joan Drinkwin, Programs Director
Northwest Straits Foundation
1155 North State Street #402
Bellingham, WA 98225
360-733-1725
drinkwin@nwstraits.org

1. Region: North Puget Sound, Region 4

2. County: Multiple

3. Name of Area: Marine coastal waters of Puget Sound used by scoters

4. Region Priority Region _____ (assigned by Regional Wildlife Program Manager)

5. Enhancement/Restoration X Acquisition

6. Location of project site (attach map, aerial photo, and/or diagram): See Map 3.0 of remaining derelict nets in Puget Sound. Removal activities will focus in the San Juan Islands, Hood Canal, and other coastal areas used by scoters and other migratory birds..

7. Current wetland acreage of project site: NA

8. Current upland acreage of project site: NA

9. If area is not owned by WDFW:

a. Current ownership: Marine waters publicly owned

b. Zoning: NA

c. USGS Quad reference: NA

d. Habitat threats:

This project is part of a multi-year effort to rid Puget Sound of derelict fishing nets. As of December 31, 2012, the Foundation has removed 4,358 derelict nets from shallow subtidal waters of Puget Sound. At the time of this proposal, the statewide derelict gear database holds location information for 188 accumulations of derelict fishing nets in high priority areas. See attached map of locations of removed and remaining nets. We are currently working to remove these nets with funding from a variety of sources, including USFWS Coastal Program, but do not have funding to complete their removal. Many of these remaining nets are located in wintering areas used by scoters and other migratory birds. See Maps 1.0 and 2.0 for locations of scoter wintering habitat in Puget Sound.

Derelict fishing gear entangles and kills thousands of marine animals in Puget Sound every year and degrades and destroys important marine habitat. Nets suspended in the water column ensnare mammals, fish and diving birds.[1] In the nets removed to date, we found more than 290,000 animals: 48 dead mammals, 879 dead birds, 3,606 live and dead fish, and 286,482 live and dead invertebrates. Animals found represent more than 240 unique Puget Sound species, including many migratory and game bird species. We have also found dead Chinook salmon and canary rockfish (both listed under the Endangered Species Act). See attached photos.

Research shows that animals found entangled during removal operations reflect only about ten days of "catch" of this gear, since most marine animals decompose or are scavenged in ten days or less. Applying a catch rate model developed by researchers at UC Davis using data from the Foundation's program, we estimate these 4,358 nets were entangling more than a million animals annually.[2] See Table 1.0 below for annual catch rates for major animal groups for this removed gear.

Table 1.0 Numbers of animals estimated entangled annually by 4,358 derelict nets

Group	Annual catch /4,358 nets	Examples of species found entangled
Marine Mammals	1,263	Harbor porpoise, Stellar sea lion, river otter
Birds	23,179	Cormorants, grebes, scoters, pigeon guillemots
Fish	82,659	Canary and other rockfish, Chinook salmon, lingcod,
Invertebrates	3,063,630	Dungeness crab, octopus, geoduck, cloud sponge
Total	3,170,731	

These estimates are alarming, especially because eighteen of the species found in derelict gear are species of concern in the United States, Washington State, Canada, or British Columbia.[3] Bird impacts are significant. Many species of seabirds in Puget Sound are in serious decline. Thirteen of 18 marine diving bird populations have shown significant losses in the past 20 years.[4] Birds found dead in derelict nets include: white-winged scoters, surf scoters,

[1] Good, Thomas P., Jeffrey A. June, Michael A. Etnier, and Ginny Broadhurst. 2010. Derelict fishing nets in Puget Sound and the Northwest Straits: Patterns and threats to marine fauna. Marine Pollution Bulletin 60 (2010) 39–50.

[2] Gilardi, K.V.K., D. Carlson-Bremer, J.A. June, K. Antonelis, G. Broadhurst, and T. Cowan. 2009. Marine species mortality in derelict fishing nets in Puget Sound, WA and the cost/benefits of derelict net removal. *Marine Pollution Bulletin*. doi: 10.1016/j.marpolbul.2009.10.016.

[3] Brown, Nicolas A., and Joe K. Gaydos. 2007. Species of Concern within the Georgia Basin Puget Sound Marine Ecosystem: changes from 2002 to 2006. *Proceedings of the 2007 Georgia Basin Puget Sound Research Conference*.

[4] Puget Sound Action Team. 2002. *Puget Sound's Health Report*.

Barrow's goldeneye, Brandt's, Pelagic, and Double-breasted cormorants, common loons, great blue herons, grebes, mergansers, murres, gulls and Pigeon Guillemots.

Significant impacts to scoters overwintering in Puget Sound have been seen in removed derelict nets, particularly in shallower embayments, such as Port Susan bay. Also, concentrations of nets are still being found in areas important to scoters and other migratory birds for wintering habitat, such as coastal areas of the San Juan Islands[5] Table 2.0 shows the bird species found dead in removed derelict gear as of December 31, 2012.

Table 2.0 Birds found dead in Puget Sound derelict nets as of December 31, 2012.

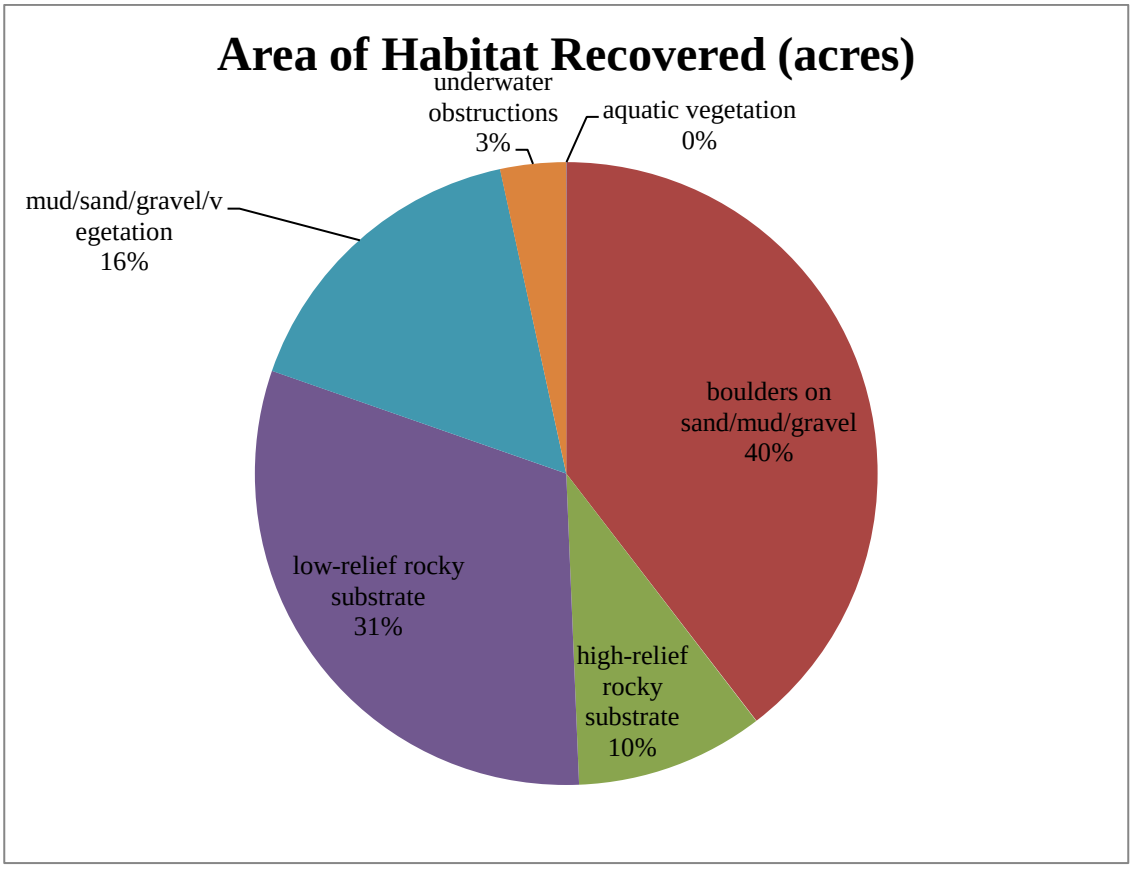
Species common name	**Scientific name**	**# dead**
Barrow's Goldeneye	*Bucephala islandica*	1
Brandt's Cormorant	*Phalacrocorax penicillatus*	166
Bufflehead	*Bucephala albeola*	1
Common Loon	*Gavia immer*	12
Cormorant unid.	*Phalacrocoracidae sp.*	33
	Phalacrocorax sp.	135
Double-crested Cormorant	*Phalacrocorax auritus*	7
Great Blue Heron	*Ardea herodias*	1
Grebe unid.	*Aechmophorus sp.*	20
Grebes	*Podicipedidae*	2
Gull unid.	*Larus sp.*	2
Loon unid.	*Gavia sp.*	3
Merganser	*Mergus sp.*	1
Murre unid.	*Uria sp.*	14
Pacific Loon	*Gavia pacifica*	35
Pelagic Cormorant	*Phalacrocorax pelagicus*	203
Pigeon Guillemot	*Cepphus columba*	3
Red-necked Grebe	*Podiceps grisegena*	20
Red-throated Loon	*Gavia stellata*	31
Scoter unid.	*Melanitta sp.*	23
seabird unid.		113
Shorebird Unid.		1
Surf Scoter	*Melanitta perspicillata*	31
Swans	*Cygnus*	1
Waterbird Unid.	*Anatidae sp.*	5
White-winged Scoter	*Melanitta fusca*	15
	Total	879

[5] Nysewander, D., J. Evenson, B. Murphie, and T. Cyra. 2005. Report of marine bird and mammal component, Puget Sound Ambient Monitoring Program, for July 1992 to December 1999 period. Washington Department of Fish and Wildlife, Olympia, WA.

Derelict fishing gear impairs important marine habitat, including federally designated Essential Fish Habitat, such as kelp beds. Other marine habitats such as high relief rocky reef, and soft or hard substrates of various types, play a vital role in the trophic transfer of energy among organisms and they provide structure for plant and algae growth, habitat for sessile animals, and hiding places.

Removal efforts to date have restored 616 acres of important marine habitat, including that used by diving birds and their prey. See Figure 1.0 for a breakdown of habitat type restored by type. Much of this habitat has been the same kind of habitat scoters are found over: shallow habitat <20 meters consisting of sand, pebble, mud, cobble, or rock.

Figure 1.0 Puget Sound marine habitat recovered through removal of 4,358 derelict fishing nets, December 31, 2012



e. Public access: Marine waters are open to the public for boating, fishing, diving.

10. Current function (attach additional sheets if necessary)

a. Primary use (breeding, migration, and/or wintering): Scoters are common to locally abundant during fall, winter and spring. They use nearshore coastal areas and coastal estuaries.

b. List species and numbers of waterfowl that use area: Animals found in derelict fishing nets removed represent

240 unique marine species. See Table 5.0 for list of unique species found in entangled nets in Puget Sound.

c. List species and numbers of other migratory game bird species that use area: See Table 2.0 for list of all birds found in derelict nets. Coastal areas targeted in this project are used by a variety of other migratory game bird species.

d. List species and numbers of other game or diversity species that use area: Canary rockfish and Chinook salmon, both listed as threatened under the ESA have been found dead in derelict nets. Other species of concern found in nets include harbor porpoise, Brandt's cormorant, common loon, brown rockfish, black rockfish, China rockfish, copper rockfish, quillback rockfish, soft sculpin, white sturgeon, and northern abalone.

11. Project Description

a. Description of planned improvements (attach diagrams, aerial photos, and/or other pictures showing existing conditions and improvements):

With funding requested herein, the Northwest Straits Foundation will conduct 16 days of derelict net removal operations using established protocol and experienced removal teams. Removal operations will focus on the remaining nets located in coastal areas used by migratory and game birds, such as parts of the San Juan Islands and Hood Canal. Foundation removal teams average of 3.2 nets removed/day and uncover an average of 0.3 acres of marine habitat/day. This project can be scaled up or down depending on available funding.

The Foundation follows state-approved guidelines for the safe and environmentally-sensitive removal of derelict fishing gear. These guidelines were adopted in 2002 by the Washington Department of Fish and Wildlife (WDFW). A determination of no effect on endangered and threatened species was issued by NOAA in July 2012 for the Foundation's derelict fishing gear removal operations. Monitoring to validate this determination is ongoing. The EPA has no permit requirements under any water quality regulations. State law exempts from state permits removal operations that abide by the state adopted guidelines. The project team possesses scientific sampling permits from the USFWS and WDFW for the collection of dead animals found in the derelict gear.

A removal plan is developed and submitted to WDFW for review and approval. After approval, state guidelines require a variety of notifications (to regulatory agencies, tribes, and US Coast Guard) prior to removal operations. Net removal is conducted in waters to 105' deep and usually entails three trained divers. Removal divers use surface supplied air, bailout bottles and a two-way voice communication system. Nets are removed from the habitat by hand and, if necessary, cut loose where buried or encrusted. Float bags are attached to the bundled nets and brought to the surface. All dead and live animals are returned to the sea after identification and counting unless specimens are requested by federal or state agencies. All bird specimens and unidentifiable carcasses and bones will be transported to Dr. Mike Etnier, of Applied Osteology, for positive identification. Some carcasses may be transported to Dr. Tom Good, of the Northwest Fisheries Science Center, for further study related to other ongoing research projects. Gear is then bagged and stowed for offloading. Established contacts with recycling companies and public and private disposal companies will be used to dispose of the non-recyclable net materials. Lead lines of gillnets are removed onboard and collected for recycling.

Derelict fishing gear removal provides multi-species benefits and is included in the *Puget Sound Rockfish Conservation Plan* developed by WDFW to address the listing of three rockfish species in Puget Sound. [6] Washington Department of Natural Resources included removing derelict fishing gear in its Aquatics Reserves

[6] Washington Department of Fish and Wildlife. 2011. *Rockfish Conservation Plan: Policies, Strategies, and Actions.*

Management Plans for the Cherry Point, Protection Island and Smith and Minor Islands reserves.[7] [8] [9] Derelict gear removal is included as near term action B3.2 (legacy derelict net removal) in the *2012 Puget Sound Action Agenda*, the comprehensive plan designed to clean up Puget Sound by 2020.[10] USFWS called for derelict gear removal in the Comprehensive Conservation Plan for the San Juan Islands Wildlife Refuge.[11] Derelict gillnets are also recognized as a threat in the USFWS Pacific Regions' *Regional Seabird Conservation Plan.*[12] Derelict gear removal is included in the three-year salmon recovery workplans for San Juan County and Island County.[13] [14]

Over 95% of the nets removed from Puget Sound are older than five years and net loss has decreased commensurate with the decrease in commercial gillnetting. Using data from fishing effort, our own derelict gear reporting system, and qualitative estimates from fishermen, we estimate that 20 to 33 gillnets are lost each year. Reporting of lost nets is mandatory as of 2012 and the Foundation is working cooperatively with the WDFW and Puget Sound treaty tribes to implement a response and retrieval program aimed at removing lost nets before they become derelict. We have an ongoing program of outreach to treaty and non-treaty commercial fishermen aimed at increasing reporting of newly lost nets in order to eliminate re-accumulation in Puget Sound.

Our proposed project will eliminate a documented source of mortality for scoters, other migratory birds and other marine species and restore vital marine habitat and habitat functions. By removing 51 derelict nets from Puget Sound marine waters, we estimate that 15 mammals, 269 birds, 1,050 fish, and more than 35,000 invertebrates will be protected from entanglement annually (see Table 3.0). This protection is perpetual, as once the net is removed, it is no longer affecting the habitat or animals using the area.

Table 3.0 Performance measures for derelict net removal

Activities	**Indicator**	**Base-line Value**	**Short-Term Predicted Value**	**Long Term Predicted Value over five years**
Conduct 16 days derelict net removal operations	# of nets removed	0	51	51
	Metric tons of debris removed	0	3.4	3.4
	Acres of habitat restored	0	5	5
	# of mammals protected annually	0	16	79
	# of birds protected annually	0	269	1,347
	# of fish protected annually	0	1,051	5,253
	# of invertebrates protected annually	0	35,416	177,079

[7] Washington Department of Natural Resources. 2010. *Cherry Point Ecosystem Aquatic Reserve Management Plan*.
[8] Washington Department of Natural Resources. 2010. *Protection Island Aquatic Reserve Management Plan*.
[9] Washington Department of Natural Resources. 2010. *Smith & Minor Islands Aquatic Reserve Management Plan*.
[10] Puget Sound Partnership. 2012. *Puget Sound Action Agenda*.
[11] U.S. Fish and Wildlife Service. 2010. *Protection Island and San Juan Island National Wildlife Refuges Comprehensive Conservation Plan and San Juan Island Wilderness Stewardship Plan*.
[12] U.S. Fish and Wildlife Service, 2005. *Regional Seabird Conservation Plan*. Pacific Region.
[13] San Juan Lead Entity Citizens Committee, Shared Strategy for Puget Sound, NOAA Technical Recovery Team. 2004.
[14] Bredensteiner, Kim. 2006. WRIA 6 (Island County) Three-Year Implementation Matrix.

b. Description of required maintenance and schedule:

Removal of derelict fishing gear restores the full service benefits of marine habitat with no further management actions required. A recently completed post-net removal monitoring project showed that marine habitat dominated by kelp achieved 90% recovery over one growing season without further management action.[15] By removing 4,358 derelict nets from Puget Sound, the Foundation restored more than 616.3 acres of marine habitat. Five acres of marine habitat will be restored to full service functions during this project.

c. Description of current water supply and water rights if applicable: NA

d. Benefits to migratory game birds and recreation (quantify benefits below):

Benefit	Projected acreage increase for waterfowl	Projected acreage increase for other migratory game birds
*Brood habitat		
*Pair, resting water		
*Nesting cover		
*Winter food resources	5 acres	5 acres
*Hunting area		

e. Description of baseline survey/habitat information available and monitoring planned to measure benefits:

The Foundation has a well-established system to track derelict fishing gear project deliverables and onboard data collection is standard for removal operations. Divers note baseline habitat type and conditions during removal operations. Area covered by the derelict gear is estimated both by the diver and using measurements of the nets See Table 2.0 below for a list of all monitoring data collected during vessel operations.

Table 4.0 Monitoring data collected during removal operations

Data collected by project manager, onboard biologists, divers, captains, disposal crew	
Locations of gear	Use of area by species
Type of gear	Habitat where gear occurred
Area of gear	Interactions with protected species
Condition of gear	Interactions with essential fish habitat
Species found entangled	Metric tons of gear removed
Dead or alive	Operation days
Area of habitat recovered	Daily costs

[15] Northwest Straits Marine Conservation Initiative. 2009. *Marine Habitat Recovery of Five Derelict Gear Removal Sites in Puget Sound.*

Using the UC Davis catch rate model, the Foundation can estimate the number of animals protected annually by removing derelict nets.[16] These annual catch rates can be projected out to a conservative five year fishing lifecycle for derelict nets. These projections will help quantify the long-term benefits of the Derelict Net Removal on marine species.

A final report will be produced that will include maps of locations of nets removed, photos of species impacts of nets removed, reports of all monitoring data collected, and reports of performance measures detailed in Table 3.0. Performance measures reflect actual debris removed, habitat acreage restored, and predicted benefits to species using the UC Davis catch rate model. With this model, the Foundation can estimate the number of animals protected annually by removing derelict nets.[17]

[16] Gilardi, K.V.K., et al. 2009.
[17] Gilardi, K.V.K., et al. 2009.

2. Cost Estimate (Annual Costs)

We are requesting funds for one fiscal year from July 1, 2013 through June 30, 2014.

Personnel: Includes 200 hours of time of our Programs Director to manage the project at $48.00/hour.

Other Contracts: Daily removal costs are as follows:

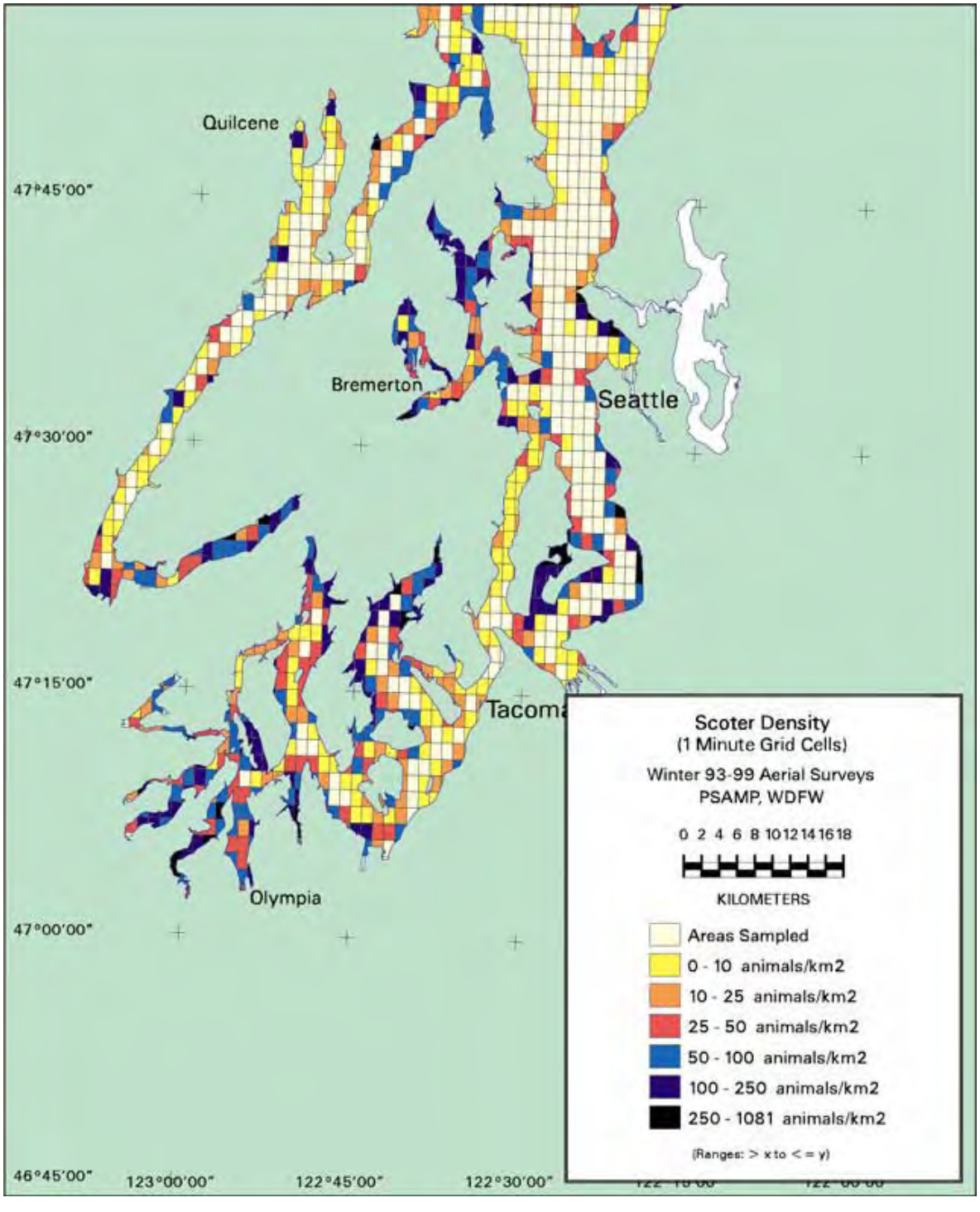
Project Task	**Cost/day**
Field Project Mgmt/day (includes onboard biologist, permitting, data mgmt, reporting)	$ 1,111.00
Per diem, moorage, disposal, supplies	$ 150.00
Removal vessel/day	$ 3,630.00
TOTAL	**$ 4,891.00**

Administrative Overhead Expenses: 15%

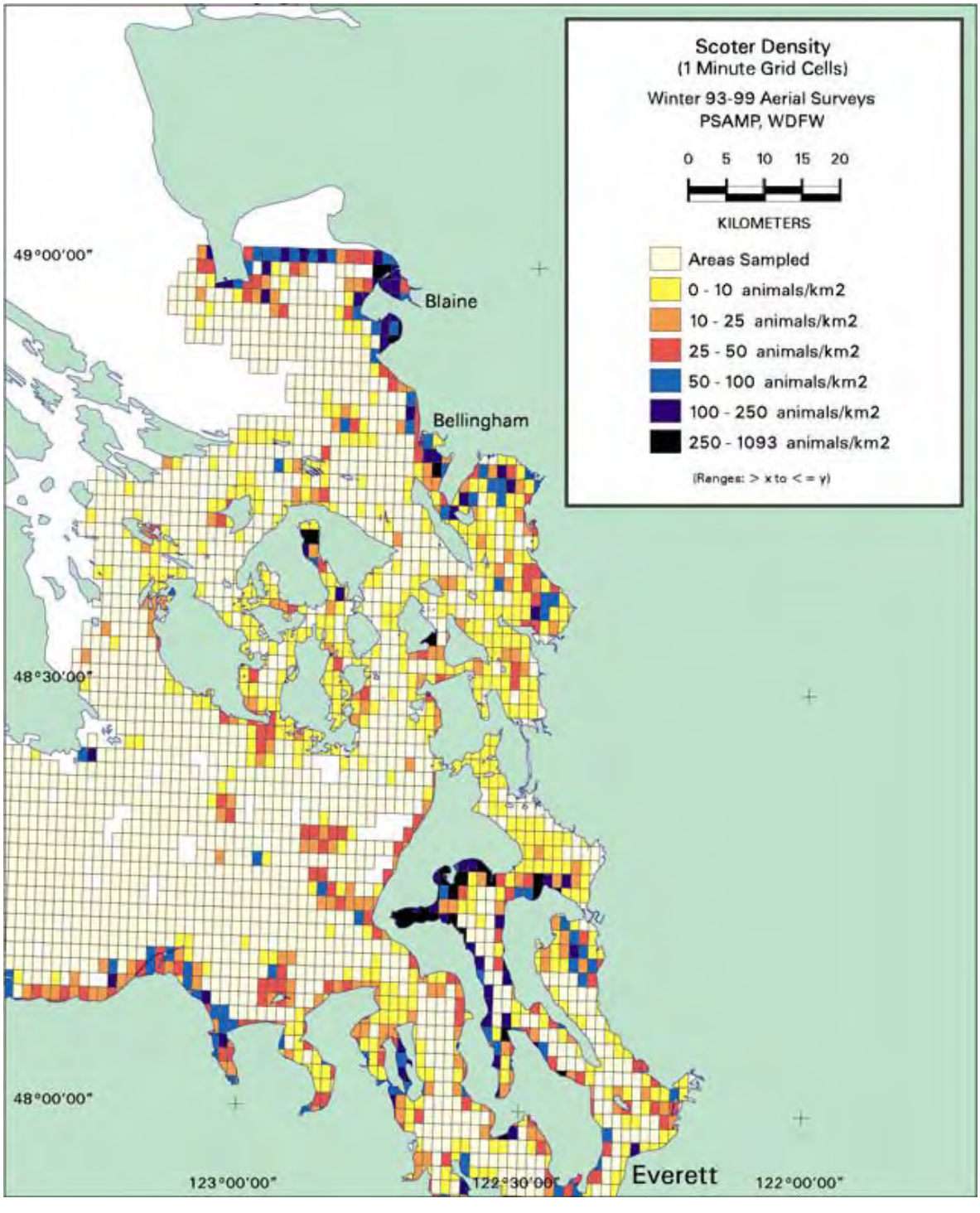
Cost Share: Northwest Straits Foundation will provide 50% cost share using a grant we currently have from the Washington Department of Fish and Wildlife as well as overhead costs from our general fund.

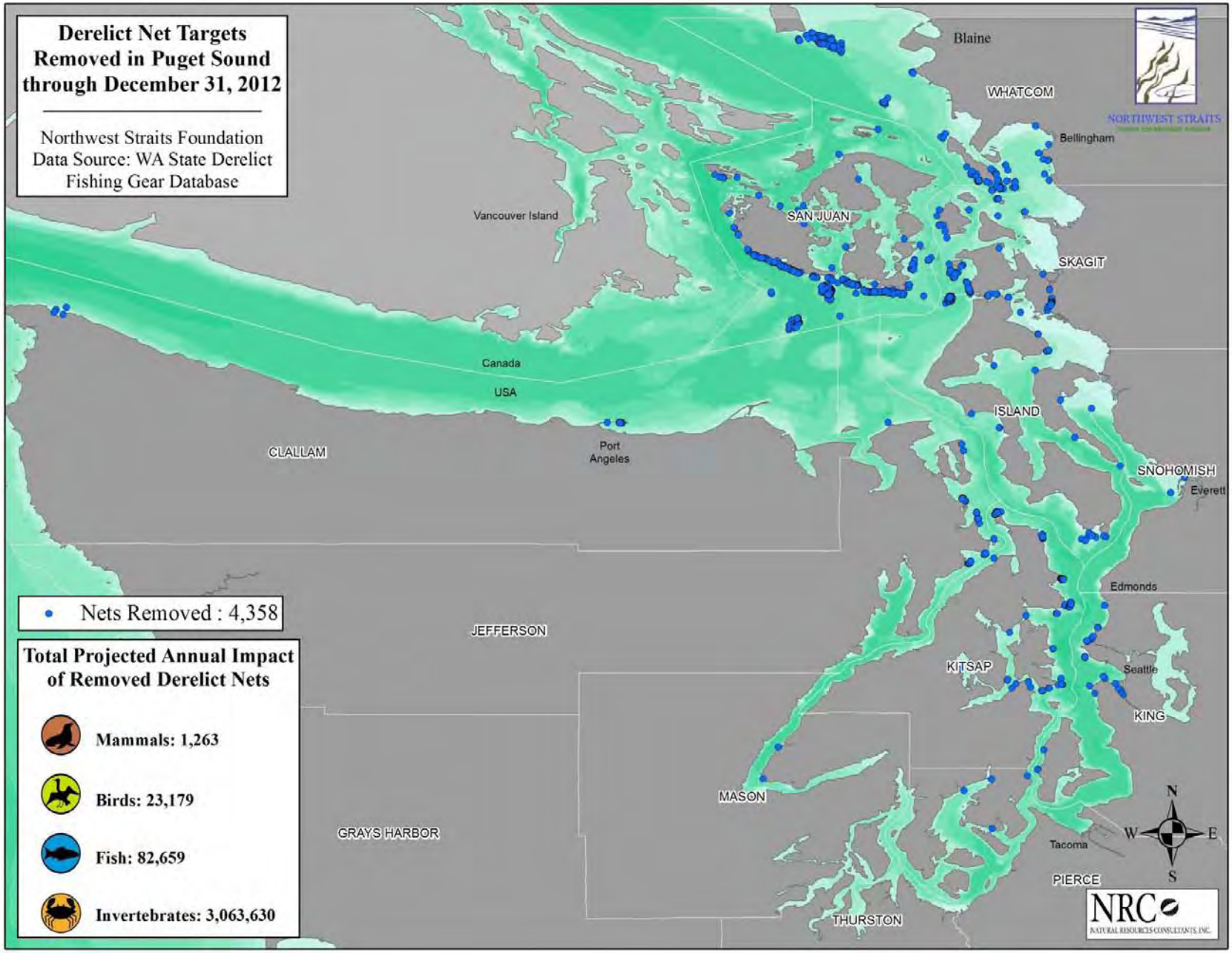
	July 1, 2013 – June 30, 2014	July 1, 2014 – June 30, 2015
CAPITAL BUDGET	NA	
OPERATING BUDGET	$1,600,000	
A/B Salaries/Benefits (requested)	$ 4,800	
C Personal Services (requested)	$39,128	
E Goods and Services		
J/K Equipment		
N Grants (matching requested funds)	$50,517	
Other (indirect at 15%)	$ 6,589	
TOTAL COST	$101,034	
Est. annual cost after June 30, 2015: $50,000		

Map 1.0. Mean Densities for Scoters (3 spp.) in Southern and Central Puget Sound Derived from Winter 1992-99 Aerial Surveys. [From Nysewander et al. 2005)



Map 2.0. Mean Densities for Scoters (3 spp.) in Northern Greater Puget Sound Derived from Winter 1992-99 Aerial Surveys. [From Nysewander et al. 2005]




Derelict Net Targets Removed in Puget Sound through December 31, 2012
Northwest Straits Foundation
Data Source: WA State Derelict Fishing Gear Database
Nets Removed : 4,358
Total Projected Annual Impact of Removed Derelict Nets
Mammals: 1,263
Birds: 23,179
Fish: 82,659
Invertebrates: 3,063,630
Blaine
WHATCOM
Bellingham
NORTHWEST STRAITS
Vancouver Island
SAN JUAN
SKAGIT
Canada
USA
ISLAND
CLALLAM
Port Angeles
SNOHOMISH
Everett
Edmonds
JEFFERSON
KITSAP
Seattle
KING
MASON
GRAYS HARBOR
Tacoma
PIERCE
THURSTON
N
W
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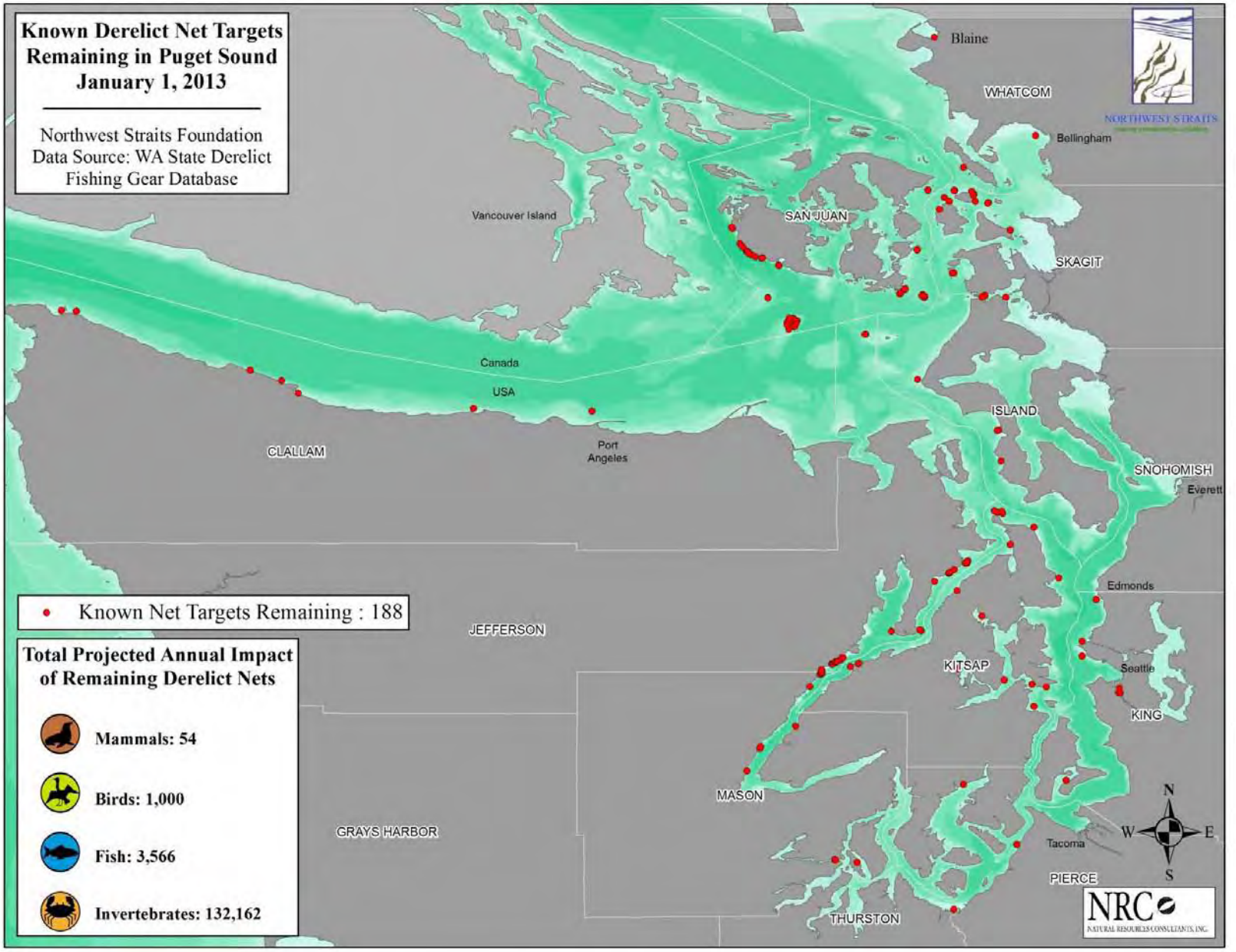
S
NRC
NATURAL RESOURCES CONSULTANTS INC.


Known Derelict Net Targets Remaining in Puget Sound January 1, 2013
Northwest Straits Foundation Data Source: WA State Derelict Fishing Gear Database
Blaine
WHATCOM
Bellingham
NORTHWEST STRAITS
Vancouver Island
SAN JUAN
SKAGIT
Canada
USA
ISLAND
CLALLAM
Port Angeles
SNOHOMISH
Everett
Edmonds
Known Net Targets Remaining : 188
JEFFERSON
Total Projected Annual Impact of Remaining Derelict Nets
Mammals: 54
Birds: 1,000
Fish: 3,566
Invertebrates: 132,162
KITSAP
Seattle
KING
MASON
GRAYS HARBOR
Tacoma
PIERCE
THURSTON
N
W
E
S
NRC
NATURAL RESOURCES CONSULTANTS, INC.

Bag of bird bones collected from a derelict net site in the San Juan Islands, August 2012

Bird bones collected from a single net, June 2007

Dead birds removed from a derelict net in Port Susan, June 2008

Dead cormorant found in a derelict net, March 2008

Dead bird in net

Table 5.0. Species encountered by type in 4,358 derelict nets removed. Puget Sound 2002 - December 31, 2012

Group	Species Common	Species Scientific	Num Alive	Num Dead	Total	Federal Status*	State Status*
Mammal	California sea lion	Zalophus californianus	-	2	2		
	Harbor Porpoise	Phocoena phocoena	-	4	4		**CS**
	Harbor Seal	Phoca vitulina	1	38	39		
	marine mammal unid.	Cetecea	-	1	1		
	river otter	Lontra canadensis	-	2	2		
Mammal Total			1	47	48		
Bird	Barrow's Goldeneye	Bucephala islandica	-	1	1		
	Brandt's Cormorant	Phalacrocorax penicillatus	-	166	166		**CS**
	Bufflehead	Bucephala albeola	-	1	1		
	Common Loon	Gavia immer	-	12	12		**SS**
	Cormorant unid.	Phalacrocoracidae sp.	-	33	33		
		Phalacrocorax sp.	-	135	135		
	Double-crested Cormorant	Phalacrocorax auritus	-	7	7		
	Great Blue Heron	Ardea herodias	-	1	1		
	Grebe unid.	Aechmophorus sp.	-	20	20		
	Grebes	Podicipedidae	-	2	2		
	Gull unid.	Larus sp.	-	2	2		
	Loon unid.	Gavia sp.	-	3	3		
	Merganser	Mergus sp.	-	1	1		
	Murre unid.	Uria sp.	-	14	14		
	Pacific Loon	Gavia pacifica	-	35	35		
	Pelagic Cormorant	Phalacrocorax pelagicus	-	203	203		
	Pigeon Guillemot	Cepphus columba	-	3	3		
	Red-necked Grebe	Podiceps grisegena	-	20	20		
	Red-throated Loon	Gavia stellata	-	31	31		

Group	Species Common	Species Scientific	Num Alive	Num Dead	Total	Federal Status*	State Status*
	Scoter unid.	Melanitta sp.	-	23	23		
	seabird unid.		-	113	113		
	Shorebird Unid.		-	1	1		
	Surf Scoter	Melanitta perspicillata	-	31	31		
	Swans	Cygnus	-	1	1		
	Waterbird Unid.	Anatidae sp.	-	5	5		
	White-winged Scoter	Melanitta fusca	-	15	15		
Bird Total			-	879	879		
Fish	arrowtooth flounder	Reinhardtius stomias	-	1	1		
	big skate	Raja binoculata	7	2	9		
	black rockfish	Sebastes melanops	5	59	64		**CS**
	brown rockfish	Sebastes auriculatus	-	1	1		**CS**
	buffalo sculpin	Enophrys bison	4	58	62		
	cabezon	Scorpaenichthys marmoratus	25	84	109		
	canary rockfish	Sebastes pinniger	-	1	1	**T**	
	cartilaginous fish unid.	Chondrichthyes sp.	-	30	30		
	China rockfish	Sebastes nebulosus	1	-	1		**CS**
	Chinook salmon	Oncorhynchus tschawytscha	-	7	7	**T**	**CS**
	chum salmon	Oncorhynchus keta	-	13	13		
	copper rockfish	Sebastes caurinus	12	15	27		**CS**
	decorated warbonnet	Chirolophis decoratus	21	-	21		
	English sole	Parophrys vetulus	5	11	16		
	fish unid.		2	159	161		
	flatfish unid.	Pleuronectiformes	4	98	102		
	great sculpin	Myoxocephalus polyacanthocephalus	13	102	115		
	greenling unid.	Hexagrammos sp.	1	18	19		

Group	Species Common	Species Scientific	Num Alive	Num Dead	Total	Federal Status*	State Status*
	gunnels	Apodichthys	715	14	729		
	Irish lord unid.	Hemilepidotus sp.	1	19	20		
	kelp greenling	Hexagrammos decagrammus	36	120	156		
	lingcod	Ophiodon elongatus	18	269	287		
	longfin sculpin	Jordania zonope	6	-	6		
	longnose skate	Raja rhina	1	-	1		
	northern ronquil	Ronquilus jordani	2	1	3		
	northern spearnose poacher	Agonopsis vulsa	1	-	1		
	Pacific cod	Gadus macrocephalus	1	3	4		
	Pacific herring	Clupea pallasii	-	1	1		
	Pacific sanddab	Citharichthys sordidus	30	57	87		
	Pacific staghorn sculpin	Gymnocanthus tricuspis	15	1	16		
	painted greenling	Oxylebius pictus	1	-	1		
	plainfin midshipman	Porichthys notatus	-	1	1		
	prickleback unid.	Stichaeidae sp.	31	-	31		
	Puget Sound rockfish	Sebastes emphaeus	10	4	14		
	quillback rockfish	Sebastes maliger	13	27	40		**CS**
	red Irish lord	Hemilepidotus hemilepidotus	51	54	105		
	righteyed flounders	Pleuronectidae	-	17	17		
	rock sole	Lepidopsetta bilineata	4	14	18		
	rockfish unid.	Scorpaenidae sp.	26	48	74		
		Sebastes sp.	1	10	11		
	sailfin sculpin	Nautichthys oculofasciatus	33	2	35		
	salmonid unid.	Oncorhynchus sp.	-	164	164		
	scalyhead sculpin	Artedius harringtoni	1	-	1		
	sculpin unid.	Cottidae sp.	22	14	36		

Group	Species Common	Species Scientific	Num Alive	Num Dead	Total	Federal Status*	State Status*
	sixgill shark	Hexanchus griseus	-	1	1		
	skates	Rajiformes	1	4	5		
	slender sole	Lyopsetta exilis	-	3	3		
	sockeye salmon	Oncorhynchus nerka	-	25	25		
	soft sculpin	Psychrolutes sigalutes	1	-	1		**CS**
	spiny dogfish shark	Squalus acanthias	37	499	536		
	spotted ratfish	Hydrolagus colliei	9	179	188		
	staghorn sculpin	Leptocottus armatus	10	-	10		
	starry flounder	Platichthys stellatus	62	151	213		
	tidepool sculpin	Oligocottus maculosus	-	1	1		
	white sturgeon	Acipenser transmontanus	-	1	1	**SOC**	
	wolf eel	Anarrhichthys felis	-	1	1		
	yellowtail rockfish	Sebastes flavidus	1	2	3		
Fish Total			1,240	2,366	3,606		
Invertebrate	basket star	Gorgonocephalus eucnemis	5	-	5		
	bat star	Asterina miniata	5	-	5		
	beatic dwarf olive	Olivella baetica	-	3	3		
	bent nose macoma	Macoma nasuta	18	35	53		
	black clawed shore crab	Lophopanopeus bellus bellus	42	1	43		
	black katy chiton	Katharina tunicata	6	-	6		
	black-clawed crab	Lophopanopeus bellus bellus	1,261	6	1,267		
	black-eyed hermit	Pagurus armatus	45	1	46		
	blood star	Henricia leviuscula	4,496	87	4,583		
	blood worm	Glycera americana	58	-	58		
	blue mussel	Mytilus trossulus	2,093	583	2,676		
	blue topsnail	Calliostoma ligatum	1,512	167	1,679		

Group	Species Common	Species Scientific	Num Alive	Num Dead	Total	Federal Status*	State Status*
	blunt gaper	Mya truncata	14	69	83		
	bread crumb sponge	Halichondria sp.	15	-	15		
	brittle star unid.	Ophiuroidea sp.	234	2	236		
	brown box crab	Lopholithodes foraminatus	-	1	1		
	butter clam	Saxidomus gigantea	425	26,695	27,120		
	butterfly crab	Cryptolithodes typicus	19	-	19		
	California sea cucumber	Parastichopus californicus	8,693	69	8,762		
	California sunset clam	Gari californica	16	274	290		
	cancellate hairysnail	Trichotropis cancellata	569	241	810		
	channelled dogwinkle	Nucella canaliculata	8	-	8		
	checkered periwinkle	Littorina scutulata	1	-	1		
	clam worm	Nereis vexillosa	93	-	93		
	cloud sponge	Aphrocallistes vastus	2	-	2		
	clown dorid	Triopha catalinae	214	10	224		
	common Pacific octopus	Enteroctopus dofleini	10	-	10		
	coonstriped shrimp	Pandalus danae	263	30	293		
	corded trophon	Boreotrophon macouni	4	20	24		
	cryptic kelp crab	Pugettia richii	11,414	165	11,579		
	cushion star	Pteraster tesselatus	47	-	47		
	daisy brittle star	Ophiopholis aculeata	2,674	-	2,674		
	dark mahogany clam	Nuttallia obscurata	-	2	2		
	dire whelk	Lirabuccinum dirum	239	43	282		
	Dungeness crab	Cancer magister	1,555	3,737	5,292		
	fat henricia	Henricia sanguinolenta	10	1	11		
	frilled dogwinkle	Nucella lamellosa	186	105	291		
	geoduck clam	Panopea abrupta	192	912	1,104		

Group	Species Common	Species Scientific	Num Alive	Num Dead	Total	Federal Status*	State Status*
	giant barnacle	Balanus nubilus	19,696	29,038	48,734		
	giant dendronotid	Dendronotus iris	1	-	1		
	giant Pacific chiton	Cryptochiton stelleri	235	7	242		
	giant plumose anemone	Metridium farcimen	88	-	88		
	giant white dorid	Archidoris odhneri	3	-	3		
	glassy sea squirt	Ascidia paratropa	301	-	301		
	glove sponge	Neoesperiopsis digitata	86	59	145		
	golfball crab	Rhinolithodes wosnessenski	133	32	165		
	granular claw crab	Oedignathus inermis	5	3	8		
	green false-jingle	Pododesmus macroschisma	1,374	10,125	11,499		
	green sea urchin	Strongylocentrotus droebachiensis	6,503	362	6,865		
	gunpowder star	Gephyreaster swifti	1	-	1		
	hairy cancer crab	Cancer oregonensis	1,454	77	1,531		
	hairy hermit crab	Pagurus hirsutiusculus	2	-	2		
	hairy lithodid	Hapalogaster mertensii	12	1	13		
	heart crab	Phyllolithodes papillosus	70	14	84		
	helmet crab	Telmessus cheiragonus	33	10	43		
	hermit crab sponge	Suberities suberea	6	-	6		
	hermit crab unid.	Paguridae sp.	71	-	71		
	horse clam	Tresus sp.	224	1,846	2,070		
	horsehair crab	Erimacrus isenbeckii	2	-	2		
	horseshoe ascadian	Chelyosoma productum	5,112	-	5,112		
	hudson's dorid	Acanthodoris hudsoni	11	-	11		
	humpback shrimp	Pandalus hypsinotus	61	6	67		
	kelp isopods	isopoda	7	-	7		
	Kennerley venus	Humilaria kennerleyi	44	884	928		

Group	Species Common	Species Scientific	Num Alive	Num Dead	Total	Federal Status*	State Status*
	lampshell	Terebratalia transversa	8,888	1,788	10,676		
	leafy hornmouth	Ceratostoma foliatum	1,530	455	1,985		
	lean nassa	Nassarius mendicus cooperi	125	51	176		
	leopard dorid	Diaulula sandiegensis	17	10	27		
	lined chiton	Tonicella lineata	11	-	11		
	lined ribbon worm	Tubulanus sexlineatus	2	-	2		
	long ray star	Stylasterias forreri	2	-	2		
	longarm brittle star	Amphiodia urtica	29	-	29		
	longhorn decorator crab	Chorilia longipes	8,137	260	8,397		
	lyre crab	Hyas lyratus	1	-	1		
	lyre whelk	Neptunea lyrata	25	-	25		
	manila clam	Venerupis philippinarum	11	55	66		
	mask limpet	Tectura persona	3	50	53		
	metridium anemone	Metridium giganteum	52	-	52		
	Monterey sea lemon	Archidoris montereyensis	10	-	10		
	moon snail	Euspira lewisii	6	9	15		
	morning sunstar	Solaster dawsoni	56	2	58		
	mossy chiton	Mopalia muscosa	17	1	18		
	mottled star	Evasterias troschelii	120	6	126		
	mudstar	Ctenodiscus crispatus	11	-	11		
	ninetooth pebble crab	Cycloxanthops novemdentatus	5	-	5		
	northern abalone	Haliotis kamtschatkana	1	9	10		**CS**
	northern horsemussel	Modiolus modiolus	41	46	87		
	northern kelp crab	Pugettia producta	634	82	716		
	Nuttall's cockle	Clinocardium nuttalli	32	1,286	1,318		
	ochre star	Pisaster ochraceus	140	2	142		

Group	Species Common	Species Scientific	Num Alive	Num Dead	Total	Federal Status*	State Status*
	orange sea cucumber	Cucumaria miniata	483	-	483		
	orange sunstar	Solaster paxillatus	1	-	1		
	Oregon triton	Fusitriton oregonensis	3,411	1,275	4,686		
	Pacific blue mussel	Mytilus edulis	1,738	320	2,058		
	Pacific gaper	Tresus nuttallii	3	21	24		
	Pacific littleneck clam	Protothaca staminea	40	1,428	1,468		
	Pacific oyster	Crassostrea gigas	5	4	9		
	Pacific razor clam	Siliqua patula	1	60	61		
	painted anemone	Urticina felina	78	-	78		
	painted star	Orthasterias koehleri	233	19	252		
	pale sea cucumber	Cucumaria fallax	29	-	29		
	peanut worms	Sipuncula	464	-	464		
	peppered sea cucumber	Cucumaria piperata	51	-	51		
	plain tellin	Tellina modesta	-	6	6		
	pointed macoma	Macoma inquinata	-	2	2		
	porcelain crab	Petrolisthes sp.	1,331	16	1,347		
	prawn	Pandalus platyceros	14	-	14		
	primitive ribbon worm	Tubulanus polymorphus	724	3	727		
	pubescent porcelain crab	Pachycheles pubescens	6	-	6		
	Puget Sound king crab	Lopholithodes mandtii	122	125	247		
	purple dwarf olive	Olivella biblicata	-	27	27		
	purple ring topsnail	Calliostoma annulatum	412	7	419		
	purple sea urchin	Strongylocentrotus purpuratus	5	-	5		
	purple shore crab	Hemigrapsus nudus	3	-	3		
	pygmy rock crab	Cancer oregonensis	573	4	577		
	red fur crab	Acantholithodes hispidus	16	5	21		

Group	Species Common	Species Scientific	Num Alive	Num Dead	Total	Federal Status*	State Status*
	red octopus	Octopus rubescens	9	-	9		
	red rock crab	Cancer productus	2,094	3,090	5,184		
	red sea urchin	Strongylocentrotus franciscanus	940	189	1,129		
	red spiny sea star	Hippasteria spinosa	1	-	1		
	red sponge nudibranch	Rostanga pulchra	2	-	2		
	ridged blood star	Henricia aspera	172	4	176		
	rock scallop	Crassadoma gigantea	30	382	412		
	rose star	Crossaster papposus	56	-	56		
	rose-painted semele	Semele rubropicta	9	13	22		
	roughpatch shrimp	Pandalus stenolepis	11	-	11		
	sandpaper trophon	Nipponotrophon lasius	4	4	8		
	scale worm	Halosydna brevisetosa	55	-	55		
	scaly lithodid	Placetron wosnessenskii	43	28	71		
	sea lemon	Anisodoris nobilis	20	1	21		
	sharp-nosed crab	Scyra acutifrons	1,416	3	1,419		
	shiny orange sea squirt	Cnemidocarpa finmarkiensis	36	-	36		
	short plumose anemones	Metridium senile	1	-	1		
	sickle jackknife clam	Solen sicarius	2	9	11		
	slender cancer crab	Cancer gracilis	173	30	203		
	slender cerith	Bittium attenuatum	-	4	4		
	slender decorator crab	Oregonia gracilis	2,510	7	2,517		
	slender kelp crab	Pugettia gracilis	5,363	4	5,367		
	smooth pink scallop	Chlamys rubida	9,965	25,672	35,637		
	snail unid.	Gastropoda	1	1	2		
	softshell clam	Mya arenaria	5	17	22		
	spiny lithode crab	Acantholithodes hispidus	1	-	1		

Group	Species Common	Species Scientific	Num Alive	Num Dead	Total	Federal Status*	State Status*
	spiny mudstar	Luidia foliolata	8	-	8		
	spiny pink shrimp	Pandalus eous	4	-	4		
	spiny pink star	Pisaster brevispinus	23	-	23		
	spiny scallop	Chlamys hastata	1,806	5,702	7,508		
	spiny sea squirt	Halocynthia hilgendorfi igaboja	2,890	105	2,995		
	spiny top snail	Cidarina cidaris	19	12	31		
	spot shrimp	Pandalus platyceros	45	1	46		
	squat lobster	Munida quadrispina	1	-	1		
	staghorn bryozoan	Heteropora magna	16	-	16		
	stalked hairy sea squirt	Boltenia villosa	31,872	166	32,038		
	star unid.	Asteroidea sp.	29	7	36		
	stout cyclocardia	Cyclocardia ventricosa	-	10	10		
	straight horsemussel	Modiolus rectus	231	146	377		
	striped dogwinkle	Nucella emarginata	42	4	46		
	striped sun star	Solaster stimpsoni	64	3	67		
	sunflower star	Pycnopodia helianthoides	660	19	679		
	tabled whelk	Neptunea tabulata	3	2	5		
	tanner crab	Chionoecetes bairdi	8	4	12		
	taylor mussel	Musculus taylori	97	10	107		
	tellina unid.	Tellina sp.	1	1	2		
	tennis ball sponge	Craniella villosa	62	-	62		
	thick-claw porcelain crab	Pachycheles rudis	65	-	65		
	transparent sea squirt	Corella willmeriana	207	-	207		
	tube worm	Phoronid	645	20	665		
	umbrella crab	Cryptolithodes sitchensis	10	-	10		
	variegate amphissa	Amphissa versicolor	1,840	1,160	3,000		

Group	Species Common	Species Scientific	Num Alive	Num Dead	Total	Federal Status*	State Status*
	vermillion sea star	Mediaster aequalis	14	-	14		
	wavy-line astarte	Astarte esquimalti	25	25	50		
	weathervane scallop	Patinopecten caurinus	2	-	2		
	western ringed lucina	Lucinoma annulatum	-	27	27		
	white dendronotid	Dendronotus albus	1	-	1		
	white sea cucumber	Eupentacta quinquesemita	587	5	592		
	widehand hermit	Elassochirus tenuimanus	7	-	7		
	winged trophon	Boreotrophon stuarti	9	3	12		
	yellow encrusting sponge	Myxilla lacunosa	554	1	555		
	yellow margin dorid	Cadlina luteomarginata	38	-	38		
	yellow sponge	Spongia barbara	8	-	8		
Invertebrate Total			166,434	120,048	286,482		
Coral	hydroid coral	Abietinaria greenei	-	-	-		
	orange cup coral	Tubastraea coccinea	-	-	-		
	pink hydrocoral unid.	Stylaster sp.	-	-	-		
Coral Total			-	-	-		
Grand Total			167,675	123,340	291,015		