PugetSoundPartnership
our sound, our community, our chance

The Puget Sound Partnership Presents:
Draft Action Area Profiles

An important part of the Puget Sound Partnership's work is connecting with citizens, watershed groups and local governments. The legislation that created the Partnership established seven geographic action areas around the Sound to address and tackle problems specific to those areas.

Each of the seven action areas plays a unique role in sustaining the Puget Sound ecosystem. Distinct natural features and ecological process, urban and rural centers, wildlife populations, economics and history, and stressors on the environment characterize the different areas. In an effort to broadly describe the individual areas and ultimately develop tailored solutions to problems, the Partnership compiled information about each action area into an informative overview. The profiles are not meant to be detailed summaries of each action area; rather they are guided tours of what gives it a sense of place and the unique role in the ecosystem. The profiles will be refined to reflect the management actions needed to address threats in each area and be included in the Action Agenda.

The profiles are made up of three sections: the narrative, the action area map, and the action area concept diagram.

- Narrative
    - physical characteristics, demographics, land use, ecosystem characteristics and assets, and threats/stressors
- Action area map
    - base map for each action area, the incorporated and urban growth areas, public lands, tribal reservations, and major landmarks that are described in the text, and points of interest
- Action area concept diagram
    - graphic representation of the narrative related to ecosystem services and stressors

Please take some time to read through these action area profiles and familiarize yourself with an area you may or may not know much about. This is an opportunity to gain some insight and understanding as to how each action area is unique and why it needs attention.

P.O. Box 40900
Olympia, WA 98504-0900
www.psp.wa.gov
360.725.5444
800.54.SOUND

PugetSoundPartnership
our sound, our community, our chance

The Puget Sound Partnership Presents:
Whatcom Action Area Profile

Physical Description

Anchoring the northeast corner of Puget Sound is the Whatcom portion of the San Juan/Whatcom Action Area, encompassing 1,400 square miles and bounded on three sides by Canada, the Cascade Mountains, and Puget Sound. Mount Baker, towering above the area at 10,778 feet, is an active volcano and one of the snowiest places on earth. In 1999 the Mount Baker Ski Area set a world record with 95 feet of snow in a single season. The many glaciers of Mount Baker have expanded and contracted in the last century, but have generally been in rapid retreat since the 1980s. Glacial melt feeds two branches of the Nooksack River, the largest system in the area, and direct runoff and groundwater feed other tributaries. Other major river systems include the Lummi River, independent coastal streams, and tributaries to the Fraser River in Canada. Portions of the Nooksack watershed originate in British Columbia. There are over 3,000 total miles of freshwater courses, including streams, rivers, lakes, ponds and wetlands, and 155 miles of marine shoreline.

Land Use, Population, and Economy

The extensive flat landscape around Lynden and Ferndale has been farmed for well over a century. Whatcom County's dairy industry ranks second out of 34 dairy-producing counties in the state, and is in the top 5% of dairy production nationwide. The county also produces more than 65% of the nation's raspberries. Other major crops include strawberries, blueberries, greenhouse/nursery items, poultry and eggs, and seed potatoes.

Approximately 9% of Whatcom County land use is agricultural, while 82% of the land is considered forest and rural. Bellingham is the largest city in Whatcom County with almost half of the County population of 186,000. Incorporated and urban lands make up 3 to 6% of the County, and other land uses consist of mining, industrial, and commercial development. Two refineries, an aluminum smelter, Western Washington University, the Port of Bellingham, and traditional commercial forestry and fishing also contribute to the region's economy. The former pulp mill site in Bellingham Bay is in the process of evolving from a heavy industrial site to a mixed use waterfront with parks, businesses, and public moorage that will be linked to downtown Bellingham, while portions of the Whatcom Waterway are reserved for deepwater commercial use.

The reservation lands of the Nooksack Tribe are located primarily along and in the vicinity of the Nooksack River and its tributaries. The Lummi Indian Nation lands include the Lummi and Sandy Point peninsulas, Portage Island, and associated tidelands. Both tribes exercise treaty rights to fish, hunt and gather throughout the Nooksack watershed area. Shellfish harvest is an important activity for local tribes as well as an active recreational pursuit by other area residents.

DRAFT

P.O. Box 40900
Olympia, WA 98504-0900
www.psp.wa.gov
360.725.5444
800.54.SOUND

The relatively shallow depths of Birch Bay result in warm water temperatures and increased recreational activities in the summer. Lake Whatcom is another popular recreational and residential area. Winter recreation enthusiasts rely on the proximity to the Mount Baker Ski Area for easy access to snow sports. Residents and visitors to Whatcom County, WWU students, tribal citizens, and pioneer descendents place a high value on the diverse environment and economy of Whatcom County. Active participation in marine resource committees, watershed councils, and education and restoration programs related to the continued health of the ecosystem is high.

Unique ecosystem characteristics and assets

Mount Baker has been a landmark since humans first began to navigate and explore this corner of Puget Sound and the abundant snowfields provide water and electricity for communities in Puget Sound. In addition to the striking natural beauty of Whatcom County, the region supports habitat types from alpine headwaters to tidal bays, along with farming, fishing and forestry operations. This area sustains every native Pacific salmonid species, and includes unusual types such as riverine sockeye salmon. The Chinook populations in the North/Middle and South Forks of the Nooksack River have distinct genetic and timing traits that are considered to be crucial in retaining the diversity and viability of threatened Puget Sound Chinook salmon overall. All of the salmon species depend on the nearshore habitats for food and shelter as they adjust between freshwater and saltwater. The marine shorelines of Whatcom County produce surf smelt, sand lance and anchovy, along with other fish and shellfish species. Alden Bank offers shallow offshore habitat for isolated populations of geoduck, sea urchins, and clams. Cherry Point was historically the most highly productive area for herring in Puget Sound, producing an estimated 32% of all the known herring spawning in the Sound, prior to a precipitous decline of 94% from 1973 to 2000.

Natural features and human activities have made Whatcom County an important area for migratory waterfowl, raptors, and other birds. The nearshore areas have abundant food sources for marine birds; and the floodplains, wetlands and agricultural fields provide forage areas. Greater Bellingham Bay, including Chuckanut and Portage Bays, are stopovers for the migratory birds' flight path between the Fraser River estuary and Skagit Bay.

Ecosystem Stressors

Past, present and future stresses to the ecosystem affect the plant, animal and human communities of the Whatcom area. Historically, 65% of the wetland area of the greater Nooksack/Lummi river delta, once inundated by tidal channels, was converted to agriculture. Some of that habitat is now reverting to wetlands. Diking and ditching activities in the Nooksack River valley from 1880 to 1998 led to the loss of 95-99% of seasonally inundated freshwater wetlands. Today, Whatcom County's substantial dairy industry struggles to hang onto farmland and continue operations, while minimizing the impact of animal wastes and crop production to water quality. Fecal coliform bacteria counts in Drayton Harbor, Portage Bay and Chuckanut Bay have resulted in shellfish harvest closures, but concerted effort has allowed

DRAFT

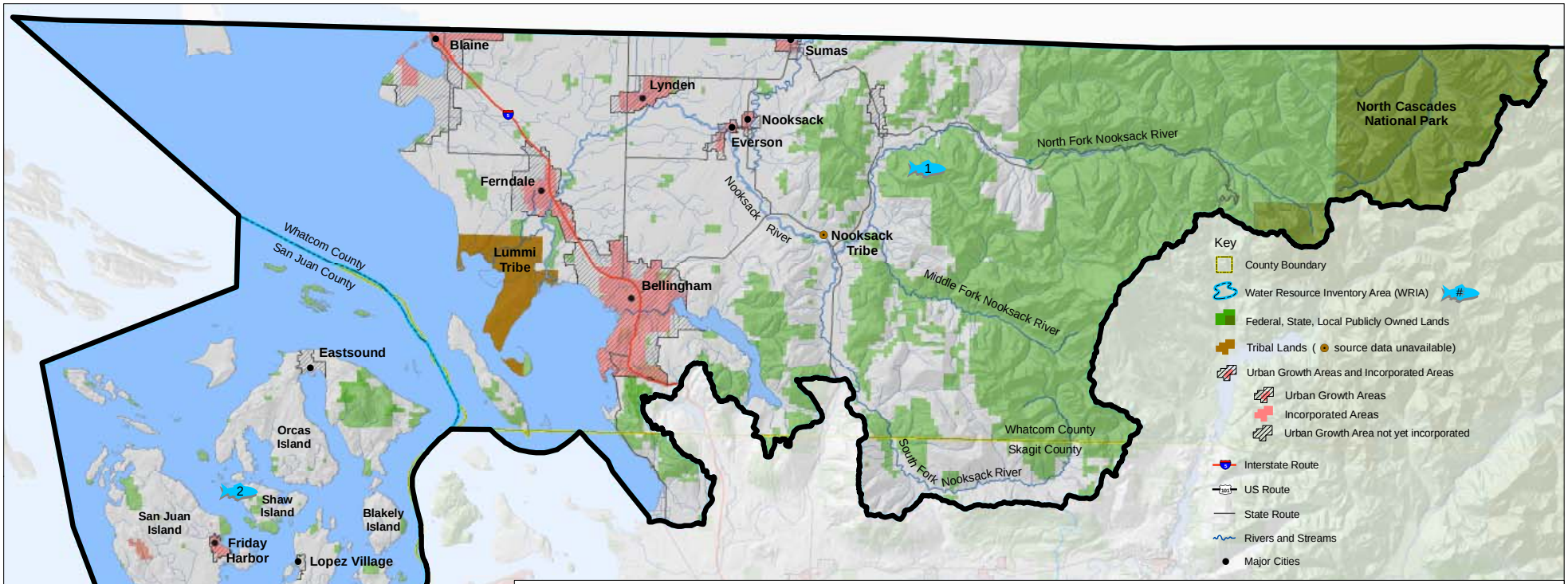
some areas to reopen. An increasing number of "recreational farmers" with a few horses, llamas, or other livestock on small parcels are a complex and growing challenge to maintaining or upgrading habitat conditions. Many of these newer small farmers have little familiarity with appropriate pasture and livestock management practices, thus the learning curve for good stewardship is high and the educational needs are substantial.

Although the Nooksack River system supports many species of salmon, their unique early-timed populations of Chinook are of particular concern, as the average number of spawners from 1996 to 2000 fell to 120 and 200 for the North and South Forks respectively. Threats to the Nooksack Chinook populations result from habitat loss, poaching and overharvest. Dikes, roads, and tidegates removed freshwater and estuarine channels. Extensive water withdrawals and sediment loads have raised river temperatures above levels that create heat barriers to salmon migration in some sections. Instream flow changes, both from low flows and high peak flows, are an ongoing issue affecting salmon in the watershed. Historical logging practices in the upper watershed left a legacy of instability—in the upper S. Fork Nooksack, over 900 shallow, rapid landslides have contributed sediment to streams and altered the channel structure. Most of the landslides were associated with forest management practices such as clear cuts, railroads, and forest roads. Nooksack Chinook are especially vulnerable to Canadian harvest because of their location and migratory patterns; an estimated 73% of Nooksack River early-timed Chinook harvest occurred in Canadian fisheries prior to 2004. Tribal and state fisheries managers were forced to make difficult decisions to place the Nooksack Chinook on hatchery "life-support" while habitat and harvest conditions improve. The decline of Nooksack spring-timed Chinook salmon has had ecological and economic ramifications, and has been a cultural wound to area tribes and other fishers.

Estuary loss has been documented in Bellingham, Lummi and Samish Bays due to industrial and urban development as well as agricultural modification. Some eelgrass meadows, such as portions of the former delta of Whatcom Creek and Samish Bay, have been substantially reduced by shoreline modification, dredging, and displacement for oyster aquaculture. An estimated X % of the Whatcom County shoreline has been modified; of this amount, X% is due to railroads. Whatcom County is faced with the challenge of having industrial land uses, such as the Cherry Point oil refineries and aluminum smelter, adjacent to high-value marine areas. The former pulp mill site and ship yards in Bellingham Bay represent major sources of legacy toxic contamination in the region. Other issues identified in the Whatcom portion of the Action Area include the threat of oil spills and pipeline ruptures, airborne pollution in North Cascade National Park, and low levels of dissolved oxygen and pollutants in Lake Whatcom.

As a trans-boundary area, Whatcom County will experience the impact of population growth from both the Puget Sound region and Canada's Georgia Basin. The population in the County is projected to grow by 40 to 45% by 2030. Without careful management, growth will exacerbate the fragmentation of sensitive habitat and strain water supplies. Freshwater resources for people, fish, and agriculture are already limited in this region, and the rapidly retreating glaciers of Mount Baker attest to the coming challenge of climate change.

DRAFT



Strait of Juan de Fuca Action Area

San Juan / Whatcom Action Area
DRAFT
July 11, 2008

Cities (Incorporated Areas)
Bellingham
Blaine
Everson
Ferndale
Friday Harbor
Lynden
Nooksack
Sumas

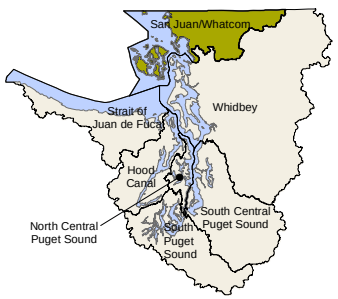
Counties
San Juan
Skagit
Whatcom

Tribal Lands
Lummi Tribe
Nooksack Tribe

WRIAs
(1) Nooksack
(2) San Juan

Places of Interest
Arroyo Park
Berthusen Park
Big Rock Garden Park
Birch Bay State Park
Blind Island State Park
Bloedel Donovan Park
Broadway Park
Bug Lake
Chuckanut
Clark Island State Park
Connelly Creek Natural Area
Cornwall Park
Doe Island State Park
Euclid Park Reserve
Fairhaven Park
Freeman Island State Park
Happy Valley Park
Hawley Farm
Hovander Homestead Park
Iceburg Island State Park
James Island State Park
Jones Island State Park
Lake Padden Park
Lake Terrell Wildlife Area
Larabee State Park
Lime Kiln State Park
Little Squalicum Creek Park
Marine Park
Maritime Heritage Park
Moran State Park
Mount Baker Snoqualmie National Forest
Mount Baker Wilderness
North Cascades National Park
Odlin County Park
Parks Bay Island State Park
Patos Island State Park
Peace Arch State Park
Posey Island State Park
Roosevelt Natural Area
San Juan County Park
San Juan Island National Historic Park
Sehome Hill Arboretum
Silver Lake Park
Skull Island State Park
Spencer Spit State Park
Stuart Island State Park
Sucia Island State Park
Sunset Pond Park
Tennant Lake Wildlife Area
Turn Island State Park
Twin Rocks State Park
Unnamed Island #80 State Park
Victim Island State Park
Whatcom Falls Park

Puget Sound Action Areas



0 5 10 20 30 40
Miles

JONES JONES
ARCHITECTS LANDSCAPE ARCHITECTS PLANNERS