

# Chapter 5

## Human Environment



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## Chapter 5. Human Environment

### 5.1 Cultural and Historical Resources

#### 5.1.1 Grays Harbor National Wildlife Refuge

The U.S. Fish and Wildlife Service is mandated by law to appropriately manage the cultural resources under its control (Appendix F). This cultural history provides an overview of the known archaeological and ethnographic use of resources in the congressionally authorized boundaries of Grays Harbor National Wildlife Refuge.

##### 5.1.1.1 Prehistoric and Ethnographic Resources

###### *Paleontological and Prehistoric Sites*

There is no known information about paleontological resources occurring on the Refuge. While there are no prehistoric archaeological sites recorded on the Refuge, there has also been no systematic archaeological survey or testing conducted. A large portion of the approved boundary is open water and tidelands, which is not a conducive environment for archaeological survey. Any potential pre-contact sites around the shoreline could be buried beneath accumulated sediment or introduced fill.

The archaeological record for Washington's southern ocean coastline is not well documented as a result of limited surveys and often unfavorable environments for artifact preservation. There is one documented prehistoric site across the North Bay area. While there is no connection between this site and the Refuge, this and other known sites can inform our understanding of the types of environmental settings and potential composition of sites that might exist in relation to the Refuge.

###### *Native American Cultural History and Landscape*

The coastal people were mobile hunters, gatherers, and fishermen who moved around following a seasonal cycle dictated by the availability of resources in the region's diverse ecosystems, with camps located on the coast nearer to traditional hunting, fishing, and gathering areas likely being occupied primarily in the spring and summer, and villages located in more protected locations being occupied in the winter months [(Wessen 1990:418) in Parks 2011].

The Grays Harbor area was and remains an important location to Native Americans for cultural activities, such as fishing; hunting; plant and shellfish gathering; travel; trade; and social, ceremonial, and religious uses. The Quinault and Chehalis tribes use fisheries stocks from the harbor. Ancestors of many contemporary tribes used the Grays Harbor area at treaty times and in many cases, their descendants continue to use the area. In addition, other Indian peoples who may or may not have used the Grays Harbor area directly used the resources of Grays Harbor through trade, hunting, and fishing (James and Martino 1986).

Ethnographically, the Refuge is within the area traditionally occupied by the Lower Chehalis—members of the Southwestern Coastal Salish culture group (Hajda 1990:503). The Hoquiam and Humptulips, sometimes described as subgroups, bands, or tribelets of Lower Chehalis, utilized the north shore of Grays Harbor. The Lower Chehalis people were water-oriented, focusing on fish as a

staple resource. According to one report, the north shore of Bowerman Basin is a documented sweetgrass gathering area ([Dellert et al. 2010] in Parks 2011).

The Quinault tribe includes the Grays Harbor area within their usual and accustomed fishing grounds [(Swindell 1942) in James and Martino 1986]. Many other tribes have historically been associated with Grays Harbor because of the great amount of natural resources, especially fish, and ease of access; some of the tribes include the Hoh, Makah, Queets, Quileute, Shoalwater Bay, Skokomish, and the Squaxin Island (James and Martino 1986). This list of tribes is neither complete nor exclusive.

One specific description of historic use by local tribes in what is now the Refuge is:

Remains of an Indian fish trap were identified south of the eastern tip of Moon Island, along the North Channel (Herman 1985). The south shore of Moon Island was identified as a site where weaving materials were picked prior to construction of the airport, when access became difficult (Susewind 1983) [in James and Martino 1986].

### ***Euro-American Exploration and Settlement***

Government Land Office (GLO) maps provide some of the earliest documentation of what the landscape of the area looked like prior to large-scale settlement by Euro-Americans. The changing shoreline on the north side of Grays Harbor in Hoquiam appears to have started as a result of the filling of tideflats to expand sawmills operations at the Grays Harbor Lumber Company in the early years of the 20th century while it was owned by NJ Blagen. This area is located well outside of the Refuge to the east, but it does have some bearing on the development of the landform which bounds the Refuge on its south side. According to the site form for the Blagen Mill, the historic deposits occur under 1 to 12 feet of historic and recent fill, while the prehistoric deposits, which include split cedar stakes associated with fish weirs, occur below 17 to 21 feet of fill. A 2006 report regarding a power substation outside the east boundary of the Refuge suggests that the fill in that area dates to the 1950s, but the claim is not substantiated by a reference.

The southern boundary of the Refuge includes a small amount of land on Bowerman Peninsula (formerly known as Moon Island). The 1866 GLO plat suggests that the strip of land known as Moon Island did not exist prehistorically. No maps for the period between 1866 and 1935 have been located. However, the 1935 Metsker map illustrates that while there appears to have been emergent mudflat topography, there was no permanent landform in the area of Moon Island at that time, which is confirmed by a February 1935 Army aerial photograph. Newspaper articles and notices of the late 1930s and early 1940s fill in some of the gaps in the evolution of the island, more accurately a peninsula, as it is connected to the mainland (the filled tideflats) to the east. Because the Refuge encompasses a portion of this strip of land, its evolution is relevant to the history of the Refuge and is explored in more detail below.

### ***Moon Island Airport and the Works Progress Administration (WPA)***

Articles and photographs provide conflicting information about the development of the Moon Island (later Bowerman) Airport, but the general timeline points to initial construction between 1937 and 1940, with expansion by the Army during World War II (WWII). In the December 18, 1935, *Centralia Daily Chronicle*, a small notice on page two announced the approval of a plan for an

airport on Moon Island. The obituary of former Mayor Ralph Philbrick in 1945 attributes the airport to the mayor's vision:

It was Mayor Philbrick who first saw the possibility of an airport in the Moon Island District. It was largely through his efforts that the plans were accepted by the works progress administration & became a reality (Aberdeen Daily World 27 January 1945).

Two articles in 1937 suggest that the construction process did not go smoothly, and they also provide insight into the role the WPA played in the project.

The *Mt. Adams Sun* included the following in its summary of regional news on its Northwest News Weekly page for November 15, 1940, which, in concert with the fact that WPA workers had already been at work as early as 1937, suggests that planning and construction were contemporaneous:

Federal and county officials have completed plans for what will ultimately be an 800-acre airport on Moon Island, west of here. Cost will be \$412,788 (Mt. Adams Sun 1940).

The Port of Grays Harbor produced a timeline on the occasion of its centennial in 2011 which included an entry for 1940: "The Port agreed to furnish the Robert Gray Dredge to help the United States Government's Works Progress Administration in the construction of Moon Island Airport" (Port of Grays Harbor n.d.).

In 1942, during WWII, the airport became an Army airfield (HistoryLink.org 2010) and returned to civilian operation in 1946 (Port of Grays Harbor n.d.). It was renamed Bowerman Field in 1953 in honor of WWII fighter pilot Robert Bowerman, who founded Western Washington Airways. The airport was operated for several years by Grays Harbor County, with financial contributions from the Port of Grays Harbor, which took over sole ownership and control in 1962.

### ***Known Historic Sites***

There are no historic sites recorded on the Refuge. An 1866 GLO map illustrates that much of the current ground surface associated with the Refuge has been deposited and developed within the last 150 years. The Moon Island Airport Terminal is the closest known resource to the Refuge.

## **5.1.2 Black River Unit of Billy Frank Jr. Nisqually National Wildlife Refuge**

The cultural history of the Black River Unit is identified primarily from a report concerning differences in vegetation over time in the Black River lowlands (Easterly and Salstrom 2008) and a cultural resource report and overviews prepared by Service archaeologists (Parks 2011).

### **5.1.2.1 Prehistoric and Ethnographic Resources**

#### ***Paleontological and Prehistoric Sites***

There is no known information about paleontological resources occurring on the Unit; there are no prehistoric archaeological sites recorded. However, there has been virtually no systematic archaeological survey or testing conducted. Moreover, a large portion of the approved boundary is not currently under Federal ownership. All ground-disturbing activities proposed for the Unit and for parcels that are acquired in the future will be subject to compliance with Section 106 of the National

Historic Preservation Act, which may include pedestrian surveys and other identification efforts as appropriate (Parks 2011).

### ***Native American Cultural History and Landscape***

The Black River Unit lies within the territory of the Southwestern Coast Salish peoples (Hajda 1990). In particular, the Upper Chehalis Tribe fished the waters of the Black River and harvested camas (an edible plant) from the surrounding prairies (south of the Unit) and used fire to maintain open fields for game species (elk and deer) and plants. As noted by Cooper, one of the “naturalists to the expedition” surveying the route of the Pacific Northern Railroad in the mid-1850s:

*A few remarks are necessary upon the origin of the dry prairies so singularly scattered through the forest region. Their most striking feature is the abruptness of the forests which surround them, giving them the appearance of stands which have been cleared and cultivated for hundreds of years. From various facts observed I conclude that they are the remains of much more extensive prairies, which, within a comparatively recent period, occupied all the lower and dryer parts of the valleys, and which the forests have been gradually spreading over in their downward progress from the mountains. The Indians, in order to preserve their open grounds for game, and for the production of their important root, the camas, soon found the advantage of burning, and when they began this it was only those trees already large enough that could withstand the fires. (Cooper 1859, as quoted in Storm 2004, in Parks 2011)*

Ethnographic evidence indicates that the Southwestern Coast Salish peoples were divided into small bands that claimed resource areas such as watersheds (Larson and Jermann 1978:10). The Upper Chehalis-speaking Squiaitl or Kwaiailk ranged from the Black River northward to Eld Inlet (Hajda 1990). The individual groups were loosely affiliated, sharing similar dialects and resource-based lifestyles, but not political connections. Most villages were located at the mouths or confluences of creeks and rivers for easy access to fisheries. Houses were constructed with posts and cedar planks in a long, rectangular form that accommodated several families. Rivers were important transportation routes for the inland Upper Chehalis, but trails were also important in areas where streams were impassible or infrequent (Hajda 1990 in Parks 2011).

Subsistence patterns were defined by seasonal availability of salmon runs, roots, and berries, supplemented by gathering shellfish and hunting. In the spring and summer, villages would divide into smaller clusters to gather berries and hunt. Stone tools, net weights, shell middens, and fire-cracked rocks used for cooking foods are the most obvious evidence of occupation sites (Speulda 1997 in Parks 2011).

### ***Euro-American Exploration and Settlement***

Descriptions of conditions along the river near the beginning of European settlement are provided by official records made by early explorers in the area. Comments on the vegetation from two expeditions in the area thought to be within the current boundaries of the Black River. The first of these was in 1824, when the Hudson Bay Company sponsored the James McMillan Expedition, a 41-man expedition to the Frasier River from the Columbia River in search of sites for trading forts. The McMillan Expedition noted:

[T]he river became ... so narrow and nearly choked up with willow and trees that we found it necessary to make a portage.... the shores are complete thickets of willows and different kinds of

deciduous trees, mostly ash. The portage is a fine road through a handsome plain. Saw several marks of beaver by their cuttings they seem to be fonder of the ash than other trees” ([Work 1824] in Easterly and Salstrom 2008).

The second expedition through the area was in 1841, when Charles Wilkes commanded the earliest U.S. Exploring Expedition to reach the Oregon Country. Wilkes sent a party of nine men in July of that year from the Hudson Bay Company’s Fort Nisqually to Grays Harbor by way of the Black River. From an area just below Black Lake, the Wilkes’ Expedition noted:

This appeared at first almost impassable, for it was for four miles almost choked up with Sparganium, Nup[h]ar, &c., so that it was difficult to pass even with the small canoe. Its breadth was from twenty to sixty feet, and it was from three to twelve feet deep. The turns were sometimes so short, that the large canoe would be in contact with the thickets on the banks at both ends, and it required much force to drag her along, by pulling by the branches, and caused great labor in cutting their way. . . They were obliged to continue their course down the river, until nine o’clock at night, before they could find any place to encamp, on account of the bog and jungle ([Wilkes 1844, pp 132-133]in Easterly and Salstrom 2008).

Euro-American settlement in the Nisqually Delta occurred in the early 1800s. The Hudson’s Bay Company established Fort Nisqually in 1832. The small settlement of farmers developed a thriving livestock industry to support other Hudson’s Bay Company outposts. Overland migration beginning in the 1840s brought Americans into the Northwest, many of whom chose the Puget Sound Region in which to settle (Speulda 1997). Settlement of the Littlerock and Black River area began in the 1850s by the Dodge, Shotwell, and Rutledge families. In 1852, Thurston County was established and Olympia selected as the provisional capitol of the Washington Territory (Parks 2011).

At each section corner GLO surveyors recorded notes about the vegetation encountered along the line in the previous mile segment. Records included the species encountered (generally trees and shrubs); presence, extent, and/or sign of fire along the GLO transect; and general composition of the understory (sparse/dense). Also noted were the transition points between prairies, hills, marshes (or bottomlands), timber and burnt timber, usually with the bearing direction of the ecotone/margin noted. The locations, width, and direction of rivers and streams were also recorded. Township maps were then drawn using GLO field notebook data. These maps showed the section line locations of rivers, streams, prairies, hills, and marshes, and the estimated direction or shape of the feature (Easterly and Salstrom 2008).

More quantitative historic information was provided by surveys done for the GLO and Donation Land Claims, which were done during the 1850s in the study area. For the GLO surveys, transects were made first to establish Township boundaries; later surveys established the corners of each Section within the Township. The GLO survey maps are among the earliest documentation/description of the landscape prior to farming and development (Parks 2011) (Table 5-3).

**Table 5-1. Summary of Landscape Descriptions on GLO survey maps in the vicinity of Black River.**

<b>Township</b>	<b>Range</b>	<b>Date Completed</b>	<b>Notes on landscape in study area</b>
16 North	3 West	1855	Soil in the river bottom first rate; rolling gravelly prairie soil second rate; Land rolling soil second rate. Timber for cedar and maple; undergrowth hazel, fern, vine, maple, salal
17 North	2 West	1854	Unsurveyed land unfit for settlement or cultivation
17 North	3 West	1856	Alder, willow, and spruce swamp, entirely covered with water. Unfit for cultivation. Impassible and unsurveyed (Black River floodplain)

***Known Historic Sites***

As parcels are acquired within the approved boundary of the Unit, they often come with standing structures associated with the area’s agricultural history. Several farm complexes or residential structures have been documented and evaluated by the Service’s Cultural Resources Team as they were acquired. One site was determined to be eligible for the National Register of Historic Places (NRHP), and a Memorandum of Agreement (MOA) to mitigate effects of demolition was adopted and its stipulations were completed in 2005. Three farms were determined to be ineligible. Where needed, the subject buildings have been recorded and removed or are slated for removal through demolition and salvage.

***Historic Resources Recorded on the Black River Unit***

The history of land use and development associated with the farms provides an important source of background information for Unit management when making decisions regarding habitat restoration and enhancement. The following text from Parks (2011) summarizes information about the various parcels within the Unit boundaries.

***Weiks-Evergreen Dairy***

The first settler to acquire land in the area encompassed by the Evergreen Dairy was Nathaniel Z. Thallheimer in 1866, when he filed for a Donation Land Claim for 162.26 acres in the NW ¼ of the section (GLO Records #216). Another claimant, possibly William Morey, filed for a homestead claim in 1869 for the NE ¼ of the section. The homesteads were not successful and there is no evidence remaining of the pioneer period.

In 1879, Thomas Rutledge opened a post office, designated Littlerock, to serve the local community. Logging increased during the 1880s, and there were 40 logging camps operating in Thurston County (Costantini and Stevenson 1985:7). The town of Littlerock was platted in the 1890s. The railroad, constructed in about 1890, crosses through the eastern portion of section 2, connecting through the community of Littlerock. Land speculation followed the railroad, and by 1900 two land development companies, Everett’s Addition and Waddell Valley Garden Tracts, were advertising in the Black River Valley for small 5- to 10-acre tracts. The Waddell Valley Garden Tracts B-9, B-10, and B-11 encompass most of the area that later became the Evergreen Dairy.

The early 1900s was a period of growth for Thurston County, with Olympia growing in population and expanding its government offices. The dairy industry also began to thrive because the growing

population created a local market for fresh milk. By the 1920s and 30s, electricity extended to many farms and all-electric milking machinery and modern equipment for bottling milk added to the convenience and safety of fresh milk. Home delivery increased with modern delivery trucks. After WWII, the dairy industry consolidated as larger, regionally-based dairies began marketing their products at supermarkets. This trend continued, reducing the number of small, family-owned dairies.

Carl Weiks was born in 1876 in Norway and stowed away on a vessel bound for the United States, drawn to Washington by the logging boom of the 1890s. By 1910, Weiks had settled his growing family near Littlerock and was working as a logger and later became a livestock and dairy farmer.

The Polk's Directory for Thurston County lists Carl Weiks in the 1919–1920 directory, but it was not until 1923–1924 that he was listed as the Carl Weiks Dairy. By the early 1930s, there were 16 dairies listed in the vicinity. Weiks' was one of the first, and thanks to his ability to draw on family members, the enterprise was able to diversify and became successful during and after the Depression. The Evergreen Dairy bottled milk and had the home delivery route for most of Tumwater from the mid-1920s to about 1940. After WWII, they branched out into poultry and livestock breeding. The family operation continued, evolving to adapt to the changing industry, until the mid-1980s, when the time of the independent, family-owned dairy was coming to a close. In 1985, Darigold, a large national dairy chain, began leasing the operation, but then began to close it down (Speulda 2004a).

A 1985 countywide cultural resources survey which inventoried representative “prevalent styles of architecture, important social organizations, commercial governmental and agricultural development and important individuals who have influenced the culture, history and government of Thurston County” (Costantini and Stevenson 1985), included the Weiks-Evergreen Dairy among the 143 out of 318 properties that met the criteria of significance.

In 1997, the dairy, situated at an elevation of about 130 feet on a 100-year floodplain, was inundated by floodwaters, soon followed by a downturn in the market in 1999. These factors forced the Weiks family into foreclosure and they lost the farm in 1999. Scatter Creek Holdings purchased several farms at auction, then sold them to The Nature Conservancy, which in turn offered selected parcels to the Service, including the Weiks-Evergreen Dairy, the La France Farm, and the North Farm. The Service acquired the parcels in 2002 with 20 buildings still standing.

### ***La France Farm***

The first settler to acquire the land in the La France Farm area was Marcy C. William, who in 1869 completed the requirements for a homestead for the 160-acre parcel. Her claim encompassed most of the area currently developed as the community of Littlerock. No additional information about Marcy William has been uncovered. The parcel was subsequently subdivided with the railroad, constructed in 1890 crossing through the claim northwest to southeast, and La France Road dividing east and west halves of the claim. By 1900, two land development companies, Everett's Addition and Garden Tracts, were operating in the Black River Valley, subdividing the valley into small 5- and 10-acre tracts. The La France Farm area was included in the Everett's Addition subdivision as Lot 24 (Metsker 1900).

In about 1914 Carl Weiks began purchasing lots within the Everett's Addition and Garden Tracts subdivision, amassing several hundred acres for a dairy operation from the development companies that had proven unsuccessful. After WWII, the family used the La France Farm for raising pigs. The

family owned the La France Farm as part of their extensive operations until 1998, when a downturn in the market led to foreclosure on the property. Scatter Creek Holdings purchased several farms in the Black River Valley during an auction following the foreclosure. Several parcels, including La France Farm, were subsequently purchased by The Nature Conservancy, which then offered the parcels to the Service. The farm did not contain a house or other elements of a farm to distinguish it, and the two sheds on the land at time of the Service's purchase were determined to be ineligible to the NRHP (Speulda 2001a).

### ***North Farm***

When the GLO survey of this location was completed in 1856, it was listed simply as a swamp with no improvements. The first transfer of the property from Federal ownership occurred in 1894, when it was included in a railroad grant of more than 9,000 acres. In about 1911, a development grant was issued for Waddell Creek Valley Garden Tracts by N.J. and Lucy Redpath and C.E. and Barbetta J. Maynard. The garden tracts were 5- to 10-acre plots for a subdivision type of development. They had been logged over and were described locally as "stump farms" (Weiks, M. 2001b. pers comm.). The subdivision never materialized, instead the lots were combined into larger blocks for agricultural development.

The North Farm is among the Waddell Creek Valley tracts that were purchased by Carl Weiks in about 1914. Members of the family remember living adjacent to the North Farm, but not on it. The family continued to own the North Farm as part of their extensive operations until 1997, when a change in family interests led to foreclosure on the property and an auction sale to Scatter Creek Holdings (along with La France Farm and the Weiks' Evergreen Dairy Farm).

When the farm was evaluated in 2001, there were 10 buildings. All were constructed between the 1930s and 1980s, and were determined to be ineligible for listing on the NRHP (Speulda 2001b). All but two have been removed.

### ***Kiser Tract***

The Kiser Tract is a 68.8-acre parcel of agricultural land in the Black River floodplain that was acquired for inclusion in the Black River Unit in 2000. A complex of buildings on 3 acres at the western edge of the property was evaluated for its significance in 2004 in anticipation of demolition for safety and management reasons. The Kiser buildings were not included among the significant historic properties identified in the 1985 Thurston County cultural resources survey (Costantini and Stevenson 1985). In 1856, when the GLO survey was completed, the area where the farm was later situated was identified as swamp land with no improvements. The SE ¼ of section 35 was homesteaded by John F. Shotwell. No buildings or features on the property correlate with the original homestead period of the 1870s. None of the existing buildings on the parcel were determined to be eligible to the NRHP when purchased by the Service (Speulda 2004b).

Although only the historic sites above have been recorded on lands owned by the Refuge, there are very likely additional tracts that will be acquired in the future which include infrastructure greater than 50 years old.

## **5.2 Infrastructure and Facilities**

The infrastructure and facilities discussed in this section include buildings, roads, trails, regulatory and interpretive signs, and other physical structures. Refer to Chapter 2, Alternative 1, and Map 1 for the locations of existing facilities.

### **5.2.1 Boundary Fences, Markers, Buildings and Facilities**

#### **5.2.1.1 Grays Harbor National Wildlife Refuge**

The Refuge encompasses 1,851 acres within the approved Refuge boundary (Map 3). Most of the boundary is marked with signs. The perimeter of the Refuge borders State Highway 109 to the north and Paulson Road to the east. The western boundary extends into the open water and is marked with marine pilings and boundary signs. The boundary on the south is adjacent to property owned by the Port of Grays Harbor. In some locations the boundary may not be posted or posted slightly inside the actual property line due to difficult water or land conditions. Periodically, boundary signage is checked to identify and replace damaged and missing signs.

The Refuge owns a large building along Airport Way. This building was a distributor business prior to purchase by the Refuge, and for a number of years the Grays Harbor Food Bank was issued a special use permit to utilize the warehouse for a distribution site. It includes 10,000 square feet of warehouse and an area with six small rooms and two restrooms. The Refuge maintains the rooms and bathrooms for use during the Grays Harbor Shorebird Festival and the warehouse serves as Refuge storage. Through a cooperative agreement, WDFW and Washington State Department of Agriculture also store equipment in the warehouse. The building has a large outdoor covered area, loading docks, and a parking area that can accommodate about 40 cars during the Shorebird Festival. The building and parking area are enclosed with a chain-link fence. The building is in fair condition. The structure is planned to be rehabilitated and converted to a maintenance shop to support Refuge functions or operations (Chapter 2, Objective 5.2).

#### **5.2.1.2 Black River Unit of Billy Frank Jr. Nisqually National Wildlife Refuge**

The Unit has been closed to all public use and activities during the development and ongoing acquisition phase. Unit boundary signs or fences are generally installed around the perimeter of all newly acquired lands. As parcels are acquired, the buildings on them are often not needed. The Unit has several derelict buildings in need of removal. These include barns, outbuildings, and houses that are in disrepair and need to be demolished. The remaining buildings are subject to trespass and vandalism. Removal of these buildings is a priority and will continue as funding becomes available. This need is also included in the Common to All Section of Chapter 2.2.

### **5.2.2 Roads, Parking Areas, and Trails**

#### **5.2.2.1 Grays Harbor National Wildlife Refuge**

The Refuge does not own or maintain any roads. Adjacent roads are owned by Grays Harbor County, the City of Hoquiam, and the Port of Grays Harbor. The Refuge clears vegetation along the roadways when necessary for clearance of large vehicles. Parking is on Refuge-owned property along Airport Way across from Bowerman Airfield. About 40 cars can park in this area. During the Grays Harbor

Shorebird Festival visitors also park in the FAA parking lot, along Airport Way east of the FAA Building, and in the Refuge facilities yard. During the spring shorebird migration, the Refuge places additional temporary signs along Airport Way to help designate visitor parking.

The Sandpiper Trail starts at the end of the blacktop road at Bowerman Airfield. The Port of Grays Harbor allows access for 1/3 mile from the Refuge parking area to the trailhead. The Sandpiper Trail is a boardwalk that winds through willow thickets, an alder grove, and then makes a loop out into the saltmarsh where visitors have unobstructed and close-up views of the mudflats where migrating shorebirds are feeding and resting. The willow and alder thickets are also great places to see neotropical migrant songbirds that use the vegetation for cover, feeding, and nesting. Along the trail, there are several areas with benches and good views of the mudflats; one viewing area has four interpretive panels. In the area of the loop, there are viewing areas and benches and one spotting scope. During the shorebird migration, temporary interpretive signs are located along the boardwalk.

No dogs, jogging, or bicycling is allowed on the Refuge, including the Sandpiper Trail. However, these activities are allowed on the blacktop road prior to the trailhead. Visitors often walk their dogs, jog, or bike along the blacktop road. The Refuge maintains No Dogs, No Jogging, and No Biking signs at the Sandpiper Trailhead and at the kiosk, but these signs are vandalized and these activities do occur on the Sandpiper Trail as observed by Refuge staff and volunteers.

### **5.2.2.2 Black River Unit of Billy Frank Jr. Nisqually National Wildlife Refuge**

The Black River Unit does not maintain any roads, parking areas, or trails.

## **5.3 Recreation Overview**

### **5.3.1 Entrances and Public Access Points**

#### **5.3.1.1 Grays Harbor National Wildlife Refuge**

The Refuge is open daily during daylight hours. There is one official entrance to the Refuge on Airport Way. Visitors park in a marked parking area along Airport Way and walk 1/3 mile along a blacktop road owned by the Port of Grays Harbor to reach the Sandpiper Trail trailhead. The parking area has a kiosk with brochures and Refuge information. The Port of Grays Harbor maintains a secure gate across the road at the location of the kiosk. Through a cooperative agreement with the Port of Grays Harbor, Refuge visitors are allowed to walk the blacktop road to reach the trailhead. Discussions are ongoing with the Port regarding visitor access because of increased FAA security regulations.

#### **5.3.1.2 Black River Unit of Billy Frank Jr. Nisqually National Wildlife Refuge**

No lands have been officially opened for public access. Some Unit-owned lands are fenced, gated, and posted.

## **5.3.2 Open and Closed Areas**

### **5.3.2.1 Grays Harbor National Wildlife Refuge**

**Open Areas.** The Refuge is open daily from sunrise to sunset. The only areas of the Refuge that are open to the public are the parking area along Airport Way and the Sandpiper Trail. Refuge wildlife and habitats may also be viewed while walking along Paulson Road, Airport Way, and the blacktop road leading to the Sandpiper trail.

**Closed Areas.** All areas except the Sandpiper Trail and the parking area are closed to public access. However, the Refuge building and parking area are open during the Grays Harbor Shorebird Festival.

Navigable waters surround the Refuge to the west, but due to the extreme tidal movement and lack of access points, boating is not a popular activity. Open waters of the Refuge are closed to all boating access due to potential disturbance to migratory and resident birds.

### **5.3.2.2 Black River Unit of Billy Frank Jr. Nisqually National Wildlife Refuge**

**Closed Areas.** All areas of the Unit are closed to public access.

## **5.3.3 Annual Recreation Visits**

### **5.3.3.1 Grays Harbor National Wildlife Refuge**

Although the Refuge is in a rural setting, the area is well-known in the birding community and visited often by birders from throughout Western Washington. Most visitation occurs during a 3-week period in the spring when shorebirds migrate through the area. The Refuge is close to U.S. Highway 101's Pacific Coast Scenic Byway and is adjacent to State Highway 109, which is the main highway for visitors along the Washington Coast. This route was recently designated the Hidden Coast Scenic Byway.

Visitor numbers have remained constant over the years; based on estimates from staff and volunteers, 13,000 annual visitors are reported for the Refuge Annual Performance Plan. Visitation during the 3-day Grays Harbor Shorebird Festival is estimated at 1,250 at the Refuge.

### **5.3.3.2 Black River Unit of Billy Frank Jr. Nisqually National Wildlife Refuge**

Service ownership of the Black River Unit does not include the waters of the Black River. The river is used as a recreational site for boating, fishing, canoeing, wildlife observation, and other activities. All areas of the Unit are closed to public access.

### **5.3.3.3 Accessibility of Recreation Sites and Programs**

#### **5.3.3.4 Grays Harbor National Wildlife Refuge**

The Refuge's Sandpiper Trail is barrier-free and provides people of all abilities with high-quality wildlife viewing opportunities. The trail wanders through a willow thick and alder grove and provides close-up views of the mudflats where migrating shorebirds can be easily seen. The mile-

long trail is flat and wide. To access the trail, visitors park in an area that is partly paved and partly gravel and has several spaces designated for people with disabilities. From here, visitors travel through a gate and down a blacktop road.

### **5.3.3.5 Black River Unit of Billy Frank Jr. Nisqually National Wildlife Refuge**

All areas of the Unite are closed to public access.

## **5.4 Wildlife Observation and Photography**

### **5.4.1.1 Grays Harbor National Wildlife Refuge**

The Sandpiper Trail is maintained to accommodate wildlife observation and photography. In addition, there are viewing and photographing opportunities available from the parking area and along the blacktop road leading to the Sandpiper Trail.

Most Refuge visits are associated with wildlife observation and photography and occur along the Sandpiper Trail. Photography visits have increased with advances in camera phones and digital photography. Increasingly, the Refuge attracts professional or serious recreational photographers using high-powered lenses, and digital single-lens reflex camera equipment. The Sandpiper Trail provides photographers and wildlife observers with access to a mix of habitats, proximity to wildlife, and open views.

### **5.4.1.2 Black River Unit of Billy Frank Jr. Nisqually National Wildlife Refuge**

All areas of the Unit are closed to public access.

## **5.5 Interpretation and Outreach**

### **5.5.1 Grays Harbor National Wildlife Refuge**

#### **5.5.1.1 The Grays Harbor Shorebird Festival**

Grays Harbor Audubon Society started the Shorebird Festival in the early 1990s. The Refuge has been a partner in producing the Grays Harbor Shorebird Festival since 1997. Typically held during the last weekend in April, the Festival is a time for celebrating the annual spring migration of shorebirds in Grays Harbor County. The Festival consists of field trips, lectures, vendors, exhibitors, a Nature Fun Fair, banquet, and auction. Proceeds from the festival help fund Refuge programs, including the cost-share match for the AmeriCorps/education coordinator.

The planning of the event begins in September with many individuals and organizations involved in all aspects of event. The Shorebird Festival partners include Grays Harbor Audubon Society, the City of Hoquiam, and Grays Harbor National Wildlife Refuge. Each partner has a member on an executive committee. This committee is responsible for ensuring the mission and intent of the annual Festival are fulfilled. The Refuge manager serves on the executive committee. Grays Harbor Audubon Society is the fiscal agent for the Festival. The Refuge's visitor services manager serves on the planning committee and assists with all aspects of planning; major responsibilities include publicity (brochure and rack card development, website management, and press releases), volunteer

coordination, and Refuge liaison. The AmeriCorps/education coordinator also is on the planning committee with the specific duties of managing the Shorebird Festival Poster Contest and the Nature Fun Fair. The Fun Fair runs throughout the Festival and consists of a dozen different hands-on nature-related activities aimed at grade school age children.

During the 3 days of the Festival, the Refuge maintains a presence of volunteers at the Refuge and on the Sandpiper Trail. Volunteers provide information to visitors and lead walks during the peak shorebird viewing time. The Washington Conservation Corps team works prior to the Festival putting up signs, cleaning the building, and doing maintenance on the trail. During the Festival, Corps members staff the Port of Grays Harbor gate to allow shuttle busses to get through. They also assist with set-up and take-down at the Festival Headquarters. Throughout the 3 weeks of spring shorebird migration, volunteers are also trail-roving on the Sandpiper Trail to assist visitors with bird identification and other information.

### **5.5.1.2 Other Interpretation and Outreach**

As time permits, Refuge volunteers and AmeriCorps members participate in community events such as River Days, the Grays Harbor County Fair, the Volunteer Recruitment Fair, and others. Typically, a staffed information table and exhibit provides information about the Refuge, shorebirds, and the Grays Harbor Shorebird Festival.

## **5.5.2 Black River Unit of Billy Frank Jr. Nisqually National Wildlife Refuge**

All areas of the Unite are closed to public access.

## **5.6 Environmental Education**

### **5.6.1 Grays Harbor National Wildlife Refuge**

#### **5.6.1.1 Number of Participants**

The environmental education program at the Refuge currently provides on- and offsite programs to 4,020 students and adults annually.

#### **5.6.1.2 Education Facilities**

The Refuge has no special facilities to accommodate students participating in the education program. The Port of Grays Harbor allows buses to drive past the closed gate to the end of the blacktop road so that students can more quickly access the boardwalk trail. Students walk the Sandpiper Trail to observe shorebirds, other wildlife and plants, and learn more about the areas habitats.

#### **5.6.1.3 Teacher Training**

Teacher training is considered an integral part of the Refuge's education program. Trained teachers are able to use knowledge and resources year after year with students. Most teacher trainings have been conducted in partnership with Educational Service District 113 and the Chehalis Basin Education Consortium. Trainings have consisted of Refuge-specific and watershed-wide themes. In 2012 training was presented for the first time to early childhood educators using the "Growing Up

Wild” (Council for Environmental Education 2013) program guide. In addition, the education coordinator works one-on-one with teachers or with teams in the same school to provide training on the curriculum and the Refuge. Educators participating in the program receive “An Educator’s Guide to Grays Harbor National Wildlife Refuge” (USFWS 2012). The guide was adapted from the Shorebird Sisters School Program to be specific to the Refuge and contains background on the Refuge, shorebirds, and migration, and has a number of activities and resources about shorebirds.

#### **5.6.1.4 Environmental Education Program Details**

The Refuge began providing educational programs to schools in Grays Harbor County in 2002. Each year since then, an AmeriCorps volunteer, serving for 10.5 months has worked as the Refuge’s environmental education coordinator. The cost-share match for this position has been provided by Refuge partners, Grays Harbor Audubon Society and Friends of Nisqually National Wildlife Refuge Complex. Currently the program serves about 4000 3<sup>rd</sup> and 4<sup>th</sup> grade students in Grays Harbor County. The education coordinator identifies approximately 24 teachers each year and provides a series of six in-classroom lessons and activities on a variety of topics related to ecology, shorebirds, and shorebird conservation. The classes then take a field trip to the Refuge during the spring shorebird migration where students are able to observe shorebirds and habitats. The cost of bus transportation has been covered by Grays Harbor Audubon Society (proceeds from the Grays Harbor Shorebird Festival), The Nature of Learning grants secured by the Educational Service District 113, or grant funding provided by the Service with match support from partners. The ongoing funding of bus transportation is challenging and may not be sustainable.

Another aspect of the education program is the Grays Harbor Shorebird Festival Poster Contest in which 1<sup>st</sup> through 6<sup>th</sup> graders throughout Grays Harbor County are invited to participate. The education coordinator organizes this effort and provides teachers in any grade with classroom assistance in getting started with this project. On average, 600 posters are entered in the contest each year. The posters are judged by grade. A 1<sup>st</sup> through 3<sup>rd</sup> place winner and two honorable mentions are awarded for each grade. Five community members with expertise in art and shorebirds are asked to judge the contest. From the 1<sup>st</sup> place winners, a best of show is chosen; this piece of art is used the following year for all publicity related to the Grays Harbor Shorebird Festival. The poster contest winners are recognized during the Festival at an awards ceremony.

During the summer, AmeriCorps members have assisted with a variety of locally run summer camps. They provide activities and lessons related to the natural history of the area and the environment. Participation in the camps and summer activities are dependent on what local organizations have scheduled for their staffing needs and the availability of AmeriCorps member.

Partners and volunteers working with the education program, both classroom lessons and field trips, include Grays Harbor College (Model Watershed program), the City of Hoquiam (AmeriCorps volunteers), Grays Harbor Audubon Society (chapter members), Educational Service District 113 (Chehalis Basin Education Consortium), and trained Refuge volunteers.

#### **5.6.2 Black River Unit of Billy Frank Jr. Nisqually National Wildlife Refuge**

There is currently no environmental education at the Unit.

## **5.7 Volunteers**

### **5.7.1 Grays Harbor National Wildlife Refuge**

The Refuge has a small group of about 10 trained Refuge volunteers who help with Refuge clean-up, invasive plant control, trail-roving, special events, community outreach, and the education program. The AmeriCorps volunteer has the responsibility of managing the volunteer program. They plan and organize work parties to clean up debris, clear invasive vegetation, maintain the trail, and recruit volunteers to help with the education program and outreach events. Maintaining a Refuge volunteer group has been challenging at the unstaffed Refuge. Volunteer recruitment and training occurs every couple of years because of limited time for program management by the staff. The Refuge provides a modest recognition event each year and gives volunteers awards and certificates.

### **5.7.2 Black River Unit of Billy Frank Jr. Nisqually National Wildlife Refuge**

The Unit does not maintain a volunteer program, however, if appropriate volunteers from Billy Frank Jr. Nisqually Refuge could be used.

## **5.8 Law Enforcement**

Protecting resources and people on our refuges is the fundamental responsibility of Refuge law enforcement officers. The mission of the Refuge Law Enforcement Program is to support the administration of the National Wildlife Refuge System through the management and protection of natural, historic, and cultural resources; property; and people on the lands and waters of our national wildlife refuges.

### **5.8.1 Refuge Law Enforcement Objectives**

Law enforcement is an integral part of managing the National Wildlife Refuge System. Refuge law enforcement officers are responsible for upholding Federal laws and regulations that protect natural resources, the public, and employees. These are our objectives:

- Protect Refuge visitors and employees from disturbance or harm by others
- Assist visitors in understanding Refuge laws, regulations, and the reasons for them
- Enhance the management and protection of fish and wildlife resources on Refuges
- Ensure the legally prescribed, equitable use of fish and wildlife resources on Refuges
- Obtain compliance with the laws and regulations necessary for the proper administration, management, and protection of the National Wildlife Refuge System

#### **5.8.1.1 Grays Harbor National Wildlife Refuge**

The Refuge receives law enforcement coverage to support major public events and peak visitation periods from a Service zone officer located at Billy Frank Jr. Nisqually National Wildlife Refuge in Olympia. Zone officers are assigned to multiple refuges and large geographic regions. They enforce special refuge regulations via periodic patrols of refuge lands to protect resources and maintain

public safety. The most common law enforcement issues encountered on Grays Harbor Refuge are violations of Refuge closures (trespass into closed areas), visitor presence after hours, vandalism (defaced signs and destruction of trees), littering, and trash dumping (household and commercial) along the roads or on Federal property.

### **5.8.1.2 Black River Unit of Billy Frank Jr. Nisqually National Wildlife Refuge**

Law enforcement on the Black River Unit is the same as Grays Harbor Refuge.

## **5.9 Area Outdoor Recreational Opportunities**

### **5.9.1 Grays Harbor National Wildlife Refuge**

Grays Harbor area surrounding the Refuge has a number of local State parks overlooking the Pacific Ocean offering wildlife viewing, beachcombing, trails, and camping. Ocean City State Park, on the north side of the Harbor mouth, features interpretive activities during the summer. Westhaven, Twin Harbors State Parks in Westport, and Grayland Beach State Park approximately 7 miles south of Westport, are known for spectacular oceanfront and beachcombing opportunities.

Within Grays Harbor estuary, Bottle Beach State Park is located approximately 14 miles west of Aberdeen on State Highway 105. It is a 75-acre day-use park along the shore of Grays Harbor, offering birdwatching opportunities, especially shorebirds, with more than 130 species of birds observed there. The community of Ocean Shores on the northwest coast has multiple birdwatching locations especially related to the harbor.

The WDFW Johns River Wildlife Area is 1,500 acres midway between Aberdeen and Westport where waterfowl hunting is allowed, and trails provide good wildlife viewing opportunities during nonhunt seasons.

Along the Washington coastline south of Grays Harbor is the large Willapa Bay estuary with Willapa National Wildlife Refuge, which offers wildlife viewing as well as extensive hunting opportunities for big game and waterfowl.

### **5.9.2 Black River Unit of Billy Frank Jr. Nisqually National Wildlife Refuge**

A variety of outdoor pursuits are readily available in the local area. Locally Millersylvania State Park is approximately 8 miles from the Unit on the east side of I-5. The park offers camping (tent and RV), boating, swimming, mountain biking, hiking, fishing, day-use areas, metal detecting areas, amphitheater/programs, environmental learning center, and interpretation.

The State also manages the Scatter Creek Wildlife Area, which has several nearby units:

The State-owned Black River Unit has 109 acres and is located 5.5 miles south of the Refuge-owned Black River Unit in Thurston County. The property provides upland and wetland habitats and fishing opportunities.

Davis Creek Unit is approximately 500 acres and is located just outside the town of Oakville, near State Highway 12. 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 recognized by the Puget Lowlands Riparian Bird Conservation Area as a priority habitat.

The 492-acre Scatter Creek Unit is located 20 miles south of Olympia. Hunting, dog training, dog field trials, and exercising the family pet are dominant uses, as well as horseback riding, botanical studies, educational field trips, bird and wildlife watching, picnicking, and fishing. The landscape is a mixture of uplands, with upland game bird hunting opportunities.

Just north of the Unit boundary is Black Lake, which offers boat launch access to fish or waterski. Personal watercraft is allowed and annual high-speed boat races take place.

The Black River offers anglers opportunities to fish. Several boat launch sites are found near the communities of Littlerock and Gate. A private canoe rental location near Rochester also allows access to the River.

Fishing and waterfowl hunting by boat on the main stem of the river corridor occurs, although the Unit has never opened these recreational uses on Unit lands. The patchwork of land ownerships along the river prevents the Unit from administratively controlling these activities.

A boat launch site is located at 123<sup>rd</sup> Avenue. A small, undesignated area on the southeast side of the intersection of 123<sup>rd</sup> Avenue SW and La France Street SW provides access to the river. From this Thurston County property, boaters may proceed north or south on the main stem of the river. There is only a primitive dirt/gravel launch area at this location.

Motorized and non-motorized boating occurs on the main stem of the Black River, particularly between 110<sup>th</sup> and 123<sup>rd</sup> Avenues. The river provides a unique, non-motorized boating experience in the South Sound area because of the river's wild setting. Boaters may also go north of 110<sup>th</sup> Avenue, but this section, north to Black Lake, is challenging because of the dense vegetation, beaver dams, and the meandering nature of the river channel.

During the winter months, an elk herd browses in the open fields off Endicott Road/123<sup>rd</sup> Avenue SW and has become a somewhat popular attraction in recent years. Vehicles pull off the road in this area to view the overwintering herd and sometimes people leave their cars to stand beside fences to see them more clearly. The cars and people on the road are a safety hazard. There are currently no viewing facilities or parking in this area of the Unit.

Thurston County proposes constructing the Gate-Belmore hike-and-bike trail on the abandoned Burlington Northern Railroad. The proposed trail corridor would link the urban trail system from Tumwater at Kenneydell County Park with the south county communities of Gate and Rochester. The 12.5-mile trail would offer access to the Black River and would run adjacent to the Black River-Mima Prairie Glacial Heritage Preserve and Black River Natural Area just south of Littlerock. The trail would run near the Refuge and access to the Refuge has been proposed (see <http://www.co.thurston.wa.us/parks/docs/preserve-plan-2013.pdf>).

## 5.10 Recreation Trends

According to the National Survey on Recreation and the Environment (NSRE 2000), the six most popular individual outdoor recreational activities and percentage of the U.S. population participating were walking (87.1 percent), family gatherings (76.1 percent), viewing natural scenery (69.8 percent), visiting a nature center, nature trail, or zoo (62.8 percent), driving for pleasure through natural scenery (60.0 percent), and picnicking (59.9 percent). These types of activities are likely popular because the costs to participate are relatively low, physical exertion is minimal, and special equipment or developed skills are not required.

In the state of Washington, the Statewide Comprehensive Outdoor Recreation Plan (SCORP) developed by the Washington State Recreation and Conservation Office (RCO, formerly known as the Interagency Committee for Outdoor Recreation [IAC]) inventories outdoor recreation sites and opportunities; assesses recreational participation, preferences, and trends; and considers issues such as recreation equity, sustainability, land supply and use, the balance between habitat protection and recreation opportunities, economic and funding issues, and technology. The SCORP concludes with recommendations to help meet the outdoor recreation needs of residents and visitors and to enhance future outdoor recreation planning efforts. The most recently released Washington SCORP (RCO 2013) identified the 16 major categories of outdoor recreation. Table 5-2 lists the activities in order from most to least in terms of participation rates. Walking, hiking, climbing, and mountaineering activities, followed by recreational activities, had the highest levels of participation

**Table 5-2. Ranking of Major Activity Areas of Washington State Residents (RCO 2013).**

Activity Category	Percentage of Population
Walking, hiking, climbing, mountaineering	90.0
Recreational activities (team and individual sports, fitness activities, swimming, roller and inline skating, skateboarding)	82.7
Nature activities (including visiting nature centers, wildlife viewing, gathering/collecting things, and gardening)	81.4
Picnicking, barbecuing, or cooking out	80.9
Water-related activities (including beach activities, boating/floating, surfing, water skiing, scuba/snorkeling, spray/splash parks)	75.2
Sightseeing	56.8
Camping	42.4
Bicycle riding	36.9
Fishing or shellfishing	34.1
Snow and ice activities (including snowshoeing, skiing, skating, and ATV riding on snow/ice)	31.3
Indoor community facilities	28.4
Hunting or shooting	21.4
Frisbee activities (including disc golf and ultimate frisbee/frisbee football)	16.8
Off-roading for recreation	15.3
Horseback riding	7.7
Air activities (including bungee jumping, sky diving, flying various aircraft, and ballooning)	3.8

Trends reported in the SCORP show that between 2006 and 2012, there was an increase in participation in many of the activities based in nature (including activities not encompassed by the more narrow definition of “nature-based activities”), such as hunting, visiting a nature interpretive center, fishing, camping, hiking, and wildlife viewing/photographing. While the most recently released Washington SCORP examined past trends, it did not offer forecasts of future regional recreation demands. A previous survey released by the Washington IAC (IAC 2002) states that outdoor recreation in most activities continues to increase at high growth rates. Many outdoor activities generally permitted on refuges are expected to show increases of 20–40 percent over the next 20 years. Table 5-3 shows the percentage change expected for Washington State by activity as reported by IAC in 2006.

**Table 5-3. Projected Future Increase in Participation for Selected Outdoor Recreation Activities.**

<b>Activity Estimated Change</b>	<b>10 Years (2002–2012) Estimated Change</b>	<b>20 Years (2002–2022) Estimated Change</b>
Hiking	10%	20%
Nature activities	23%	37%
Fishing	-5%	-10%
Hunting	-15%	-21%
Sightseeing	10%	20%
Camping	10%	20%
Canoeing/kayaking	21%	30%
Motor boating	10%	No estimate
Equestrian	5%	8%
Non-pool swimming	19%	29%

## **5.11 Special Designations**

### **5.11.1 Grays Harbor National Wildlife Refuge**

Grays Harbor Estuary has been given the designation of a Western Hemisphere Shorebird Reserve Network Site on the hemispheric level because of its importance to migratory shorebirds (see Chapter 1.8.1).

The Refuge was designated by the Washington Audubon Society as an Important Bird Area (IBA) of Washington State (Cullinan 2001)(see Chapter 1.8.2).

### **5.11.2 Black River Unit of Billy Frank Jr. National Wildlife Refuge**

The Unit has no special designations.

## 5.12 Socioeconomic Environment

### 5.12.1 Grays Harbor National Wildlife Refuge

#### 5.12.1.1 Population and Area Economy

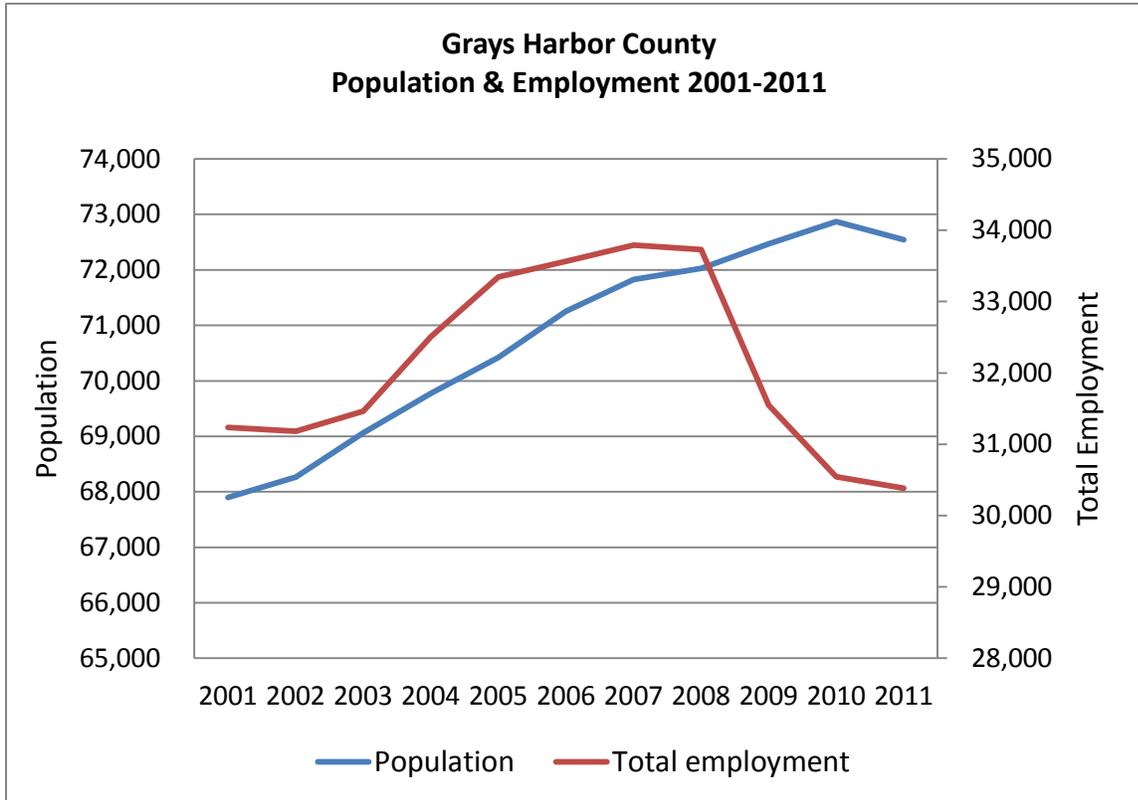
Grays Harbor Refuge is located in Hoquiam in Grays Harbor County. Aberdeen is contiguous with Hoquiam and supports a larger population than Hoquiam. Table 5-4 shows the population and area economy. The county population increased 7 percent from 2001 to 2011, compared with a 14 percent increase for Washington State and a 9 percent increase for the United States. County employment decreased by 3 percent from 2001 to 2011, compared to an employment increase in Washington State (9 percent) and the United States (6 percent). Per capita income in Grays Harbor County increased by 4 percent between 2001 and 2011, while Washington State and the United States both increased by 5 percent.

**Table 5-4. Grays Harbor NWR: Summary of Area Economy, 2011 (Population & Employment in thousands; Per Capita Income in 2011 dollars)**

	Population		Employment		Per Capita Income	
	2011	Percent change 2001-2011	2011	Percent change 2001-2011	2011	Percent change 2001-2011
Grays Harbor	72.5	7%	30.4	-3%	\$30,355	4%
Washington	6,830.0	14%	3,828.6	9%	\$43,878	5%
United States	311,591.9	9%	175,834.7	6%	\$41,560	5%

Source: U.S. Department of Commerce 2012.

**Figure 5-1. Grays Harbor County’s population and employment over the last 10 years. In 2007, employment peaked at 33,792 and has since decreased to 30,382 in 2011, which is a 10 percent decrease. Employment changes were primarily in the construction and manufacturing sectors that experienced an increase in the first half of the decade and a subsequent decline in the latter half of the decade.**



Source: Bureau of Economic Analysis 2012

The largest industry sectors for Grays Harbor County are ranked below by employment (Table 5-5). The largest employers are the State and local governments, followed by food services and drinking establishments.

**Table 5-5. Industry Summary for Grays Harbor County (Dollars in thousands)**

Industry	Employment	Output	Employment Income
State and local government	5,545	\$291,018	\$256,939
Food services and drinking establishments	1,891	\$98,875	\$31,013
Sawmills and wood preservation	1,156	\$294,886	\$66,812
Commercial logging	964	\$231,322	\$31,604
Private housekeeping and home care	837	\$8,089	\$7,058
Wholesale trade businesses	804	\$117,550	\$40,057
Health practitioner offices	769	\$72,776	\$32,763
Retail stores (food, beverage, general)	1,344	\$91,932	\$37,580
Civic, social, professional, and similar organizations	628	\$26,699	\$11,676
Construction of new nonresidential commercial and health care structures	605	\$92,312	\$28,561

Source: Implan 2008.

### **5.12.1.2 Local Community**

The Refuge is in the City of Hoquiam and near Aberdeen. These cities suffered economic decline as the salmon fishing industry fell off and logging jobs decreased. The current economic downturn has made recovery difficult and the cities struggle with few jobs available and high unemployment. However the cities are well-situated for the tourism industry as the location is known as the gateway to the Olympic peninsula, Olympic National Park, communities along highway 101, and to miles of ocean beaches. Generally the demand for outdoor recreational opportunities is increasing both within the communities as well as from visitors.

### **5.12.1.3 Refuge Impact on the Local Economy**

Visitors to the Refuge spend money on food, lodging, equipment, transportation, and other expenses, which creates jobs within the local economy. Additionally, Refuge budget expenditures, including those provided through the Refuge Revenue Sharing Act, result in economic impacts to the local community. The effects on the local economy associated with consumer expenditures on Refuge-related recreation and effects associated with Refuge budget expenditures are explored in detail in Chapter 6 of the CCP.

## 5.12.2 Black River Unit of Billy Frank Jr. Nisqually National Wildlife Refuge

### 5.12.2.1 Population and Area Economy

The Unit is located southwest of Olympia, Washington, in Thurston County. Table 5-6 shows the population and area economy. The county population increased 21 percent from 2001 to 2011, compared with a 14 percent increase for Washington State and a 9 percent increase for the United States. County employment increased by 16 percent from 2000 to 2010, compared to a smaller employment increase in Washington State (9 percent) and the United States (6 percent). Per capita income in Thurston County increased by 4 percent between 2000 and 2010, while Washington State and the United States both increased by 5 percent.

**Table 5-6. Black River Unit: Summary of Area Economy, 2011 (Population & Employment in thousands; Per Capita Income in 2011 dollars)**

	Population		Employment		Per Capita Income	
	2011	Percent change 2001-2011	2011	Percent change 2001-2011	2011	Percent change 2001-2011
Thurston County	256.6	21%	129.3	16%	\$41,251	4%
Washington	6,830.0	14%	3,828.6	9%	\$43,878	5%
United States	311,591.9	9%	175,834.7	6%	\$41,560	5%

Source: U.S. Department of Commerce 2013.

The largest industry sectors for Thurston County are ranked below by employment (Table 5-7). The largest employers are the State and local governments followed by retail trade. Over the last 10 years, the largest employment increase occurred in administrative and waste management services (41 percent) while there was a decline in construction employment (8 percent).

**Table 5-7. Employment Summary for Thurston County, 2011**

Industry	Employment	Percentage Change 2001-2011
State and local government	34,763	2%
Retail trade	14,809	14%
Health care and social assistance	14,253	24%
Accommodation and food services	8,172	31%
Other services, except public administration	7,402	13%
Professional, scientific, and technical services	7,065	33%
Real estate and rental and leasing	5,625	39%

<b>Industry</b>	<b>Employment</b>	<b>Percentage Change 2001-2011</b>
Administrative and waste management services	5,617	41%
Construction	5,532	-8%
Finance and insurance	4,249	31%

Source: U.S. Department of Commerce 2013.

### **5.12.2.2 Local Community**

The northern portion of the Unit is within 5 miles of Tumwater, 10 miles of Olympia, 15 miles of Lacey, and the southern end of the Unit is immediately north of Littlerock, a village based on a rural economy.

The cities of Tumwater, Lacey, and Olympia have grown together such that it is hard to know which municipality you are in. These three cities have a small-town feel to them and residents who value museums, theatre, and outdoor activities. The cities are well-situated for people passing through while traveling from Portland to Seattle or to the Olympic peninsula, Mt. Rainer National Park, or to the Cascade mountain range.

### **5.12.2.3 Refuge Impact on the Local Economy**

Because the Unit has not been open to the public, there is little economic impact. The effects on the local economy associated with potential consumer expenditures (Alternative 2) on Unit-related recreation and effects associated with Unit budget expenditures are explored in detail in Chapter 6 of the CCP.

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