

## Skagit-Samish River Basins

The Skagit Basin reaches from Puget Sound to the crest of the Cascade Mountains. The Samish Basin lies slightly to the north, next to the western end of the larger Skagit. These two basins make up 3,184 square miles of drainage area. The Skagit's principal tributaries are the Sauk, Suiattle, and Baker Rivers. The basin's upper reaches are mountainous with deep valleys and turbulent streams. Below the town of Concrete, the valley widens into a broad 68,000-acre delta. The great difference in elevation throughout the basin, varying from mean sea level to 10,000 feet, results in marked differences in temperature and precipitation. Record basin temperature extremes have reached a high of 109° F at Newhalem and a low of -10° F at Darrington Ranger Station and Mount Baker Lodge. About 75 percent of the precipitation falls between October and March. Heavy winter snow in the higher elevations remains until late spring or early summer.

## Skagit River

Completed Navigation Project (Seattle District) In 1911, the Corps of Engineers constructed a training dike 10,450 feet long at the entrance of the Skagit River's South Fork, a mattress sill at the head of Old River, and four dikes to close subsidiary channels. The mattress sill was removed in 1970 as it had become a hazard to navigation. Federal cost of the project through September 1998 was \$102,330 for new work, and \$36,258 for maintenance. Uncompleted portions of the project (increasing the depth at Skagit City bar by dredging and training dikes and extending the training dike to 16,000 feet) were deauthorized Oct. 3, 1978.

## Deepwater Slough

Project Modification, Section 1135 Ecosystem Restoration Project (Seattle District) The project is located on the south fork of the Skagit River between Freshwater and Steamboat Sloughs (referred to as Deepwater Slough) and the adjacent Milltown Island, south of the town of Conway and north of the Skagit Bay estuary, in Skagit County, WA. The second and distinct portion of this area is Milltown Island on the east side of the Milltown area, bounded by Steamboat Slough to the west and Tom Moore Slough to the east. This project restored river and tidal influence to 204 acres of the Washington Department of Fish and Wildlife Skagit Wildlife Area that has been affected by the Corps' Skagit River navigation project. The existing dike structures in the Deepwater Slough area and Milltown Island have created a system of disconnected habitats. With the dikes in place, there was no hydraulic connectivity between these habitats and the river and estuarine environment to support nutrient transfer. These dikes also had limited the creation of subsidiary and blind channels. Construction was completed in 2001 which included approximately 8,300 linear feet of new dikes and augmentation and rehabilitation of 10,000 linear feet of existing dikes .A

bridge crossing for Deepwater Slough was installed and the environment was enhance with native species plantings and large woody debris placement. The dike at Milltown Island was breached in three locations to restore tidal and riverine through the use of explosives. By restoring the natural hydrologic processes that form habitat a variety of new habitats have been created and enhanced. These habitats include main tidal channels, subsidiary channels, blind channels, and estuarine emergent marsh. Both waterfowl and juvenile salmon are expected to benefit from and occupy these new sites for feeding and refuge.

#### Swinomish Channel

Completed Navigation Project (Seattle District) Swinomish Channel separates Fidalgo Island from the Skagit County mainland. Dredging and diking of this inland passage were completed in 1937. The 11-mile-long channel connects Padilla Bay on the north with Saratoga Passage on the south. The channel is used extensively by tugboats with log tows, recreational craft, and freight vessels. In 1965, the Corps of Engineers completed removal of projecting rock points obstructing navigation at the hole-in-the-wall near the south end of the channel. The south jetty, west of Goat Island, was rehabilitated in 1973. Federal costs through September 1998 were \$809,332 and \$32,000 in contributed funds for new work. An additional \$8,532,319, plus another \$379,248 of contributed funds, was spent on maintenance. Commerce in 1997 totaled 119,000 tons.

#### La Conner Bank Protection

Completed Streambank Erosion Control Project (Seattle District) Additional bank erosion control measures to prevent damage to structures in the La Conner Historical District were authorized by Section 603, Public Law 99-662. A Decision Document was prepared which showed that a shore protection project along 1,500 feet of the La Conner waterfront would be economically feasible and there would be a federal interest in such a project. Preconstruction engineering and design began in fiscal year 1991 with preparation of the Design Memorandum and Environmental Assessment. These were completed in March 1994. Following completion of Plans and Specifications and acquisition of the necessary permits and needed real estate interests, construction began in September 1995 and was substantially finished by December with mitigation planting being completed in April 1996. The local sponsor, the town of La Conner, provided one-fourth of the \$1,201,889 project cost.

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#### Skagit River\_Avon Bypass

Flood Control Project, Deauthorized (Seattle District) This project included a diversion channel from near Burlington to Padilla Bay, a gated control structure near the intake, a control weir near the outlet and a levee on the right bank upstream from the bypass. Site selection studies were completed in the 1960s. However, the sponsor was not able to meet local participation requirements. The project was deauthorized Jan. 1, 1990, under provisions of Public Law 99-662.

#### Skagit River Levee and Channel Improvements

Flood Control Project, Deauthorized (Seattle District) Authorized by Congress in 1966, the project would have involved levee raising and strengthening and channel modifications from the Burlington Northern railroad bridge in Mount Vernon to the mouth of the Skagit River. Advance engineering and design studies were started in 1977 and a general design memorandum was completed in 1979. The report recommended a change in the authorized project to provide 50-year flood protection to rural lands downstream of Mount Vernon and 100-year flood protection for the urban areas from Mount Vernon to Sedro Wooley, with standard project flood protection for downtown Mount Vernon. Nonstructural measures were included to reduce flood damages in the Nookachamps Valley and Sterling area. In November 1979, Skagit County voters rejected a proposition to provide funding for the local share of costs. Skagit County withdrew as the sponsor, and, consequently, further effort on this project was terminated. The project was deauthorized in July 1995 under provisions of Public Law 99-662.

#### Skagit Flood Damage Reduction Study

Flood Damage Reduction Study, Underway (Seattle District). Feasibility study ongoing under the authority of Section 209 of the Flood Control Act of 1962 (PL87-874). Skagit County is the local sponsor. Evaluating flood damage reduction measures for the Skagit River basin, including modifications to existing hydropower projects, levees, overflow channels, and nonstructural measures. In 1993, a Reconnaissance Study of reducing flood damages in the Lower Skagit River Basin was completed which determined that levee improvements with overtopping segments and non-structural measures were worthy of further investigation during feasibility studies. However, in 1994, Skagit County asked that further work be deferred. Following the November 1995 flood, Skagit County requested the study be resumed. The Feasibility Study is expected to cost about \$4 million and is scheduled for completion in 2009.

### Skagit River\_Upper Baker Lake

Completed Flood Control Project (Seattle District) The study, carried out under the Puget Sound and Adjacent Waters Comprehensive Study authority, was completed in 1975. It recommended additional flood control storage be provided by a change in operation of Upper Baker Dam, owned by Puget Sound Power and Light Company (PSP&L) now known as Puget Sound Energy (PSE). In 1977, Congress authorized the project and storage was available during the winter of 1977-78. Flood damages prevented through September 1998 were \$90,704,000.

### West Mount Vernon

Section 205 Reconnaissance Study - Terminated (Seattle District) In May 1992, Skagit County requested Corps assistance under authority of Section 205 of the 1948 Flood Control Act with the particularly acute flood problems of West Mount Vernon. Current flood fighting efforts usually cut off access across the State Highway bridge between downtown Mount Vernon to West Mount Vernon, creating a potentially very dangerous situation for residents of West Mount Vernon. The Reconnaissance Study was completed in 1994 and determined that levee improvements along with non-structural measures and bridge modifications were worthy of further study. A plan was developed to fund the local share of study costs by Skagit County, the city of Mount Vernon, and the Washington State Department of Transportation. However, in June 1995 Skagit County declined to proceed with feasibility studies at that time and further work was deferred.

### Anacortes Harbor

Completed Navigation Project (Seattle District) The Anacortes project consists of a channel 12 feet deep in Capsante Waterway completed in 1930 and a mooring basin of the same depth protected by two pile breakwaters that was completed in 1957. Originally, the east breakwater was 370 feet long and the southeast breakwater was 350 feet long. In 1958, local interests extended the southeast breakwater to 440 feet providing greater protection from winds from that direction. In 1964, the Corps of Engineers extended both breakwaters to a length of 470 feet. Federal expenditures through September 1998 were \$224,345 for new work and \$1,205,365 for maintenance. Local interests contributed \$59,524 for new work, \$5,000 for maintenance. Commerce in 1997 totaled 13,904,000 tons.

### Anacortes Harbor and Barge Channel

Completed Navigation Project, Section 107 (Seattle District) The project provides for a barge channel 150 feet wide, 18 feet deep, and about 1 mile long from deep water in Guemes Channel to the west shore of Fidalgo Bay. Construction was completed in fall 1976. Federal funds spent on this project totaled \$825,263 for new work. Another \$457,200 of contributed funds was also expended for new work.