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The Lake Whatcom Watershed~ A Retrospective

Resource Directory Companion Report

1850-2007

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Resource Directory Companion Report
1850-2007

Prepared for:
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1. Purpose

The Lake Whatcom Watershed~ A Retrospective Resource Directory Companion Report summarizes information in the Lake Whatcom Watershed~ Resource Directory. The Resource Directory records significant events in the watershed from 1850-2007. Together the Resource Directory and Companion Report provide a historical accounting of information on water use, land use, management actions, and significant conditions and events in the watershed. One purpose of this retrospective of information is to serve as a tool for examining and understanding changes in the watershed over time, which may provide context for future management actions and decisions. The information presented may also serve as a resource for providing educational material to the public.

It is important to note that the content of the Resource Directory Companion Report directly reflect entries in the Lake Whatcom Watershed~ A Retrospective Resource Directory. The Companion Report summarizes the entries by category (e.g., population, transportation, land and water use) when sufficient information exists within a specified timeframe. As a result, each section may vary slightly in the format for presenting information. In addition, given the relationship of information, there may be some repetition of information between sections.

At the end of each section of the Companion Report, there is an abbreviated list of reference titles and dates. It includes the Resource Directory Citation ID for each of the referenced items to allow for cross-referencing to the Resource Directory, which provides the full citation. The Resource Directory and the Companion Report are not intended as an inclusive catalog or directory of all Lake Whatcom Watershed technical studies, data collection efforts, and/or reports that have been published.

2. Early Settlement (Pre-1850)

Three sources of information found describe the pre-1850 conditions in the Lake Whatcom Watershed. The information suggests that the earliest known settlement is a Northwest Coast Salish Tribe village at the south end of Lake Whatcom. The village was an important camping and fishing site and was the starting point of a trail to the upper South Fork valley. The Coast Salish Map identifies the village as hahch-wah-AHM-eck. In *Ghost*

Towns of Lake Whatcom, the Salish Tribe is identified as Kaw-tcha-ha-muk. *An Historical Geography of the Settlement Around Lake Whatcom Prior to 1920* identifies a tribe occupying the area as the Saquantch tribe, which occupied the area until their defeat by the Lummi tribe. It could not be determined from the information reviewed whether the Saquantch and the Kaw-tcha-ha-muk are the same tribe referenced differently or if they are two separate tribes.

Section 2 Abbreviated List of References:

- Coast Salish Villages of Puget Sound. http://coastalsalishmap.org/start_page.htm (Resource Directory Citation ID COA)
- Ghost Towns of Lake Whatcom, 1982. Elaine Zobrist (Resource Directory Citation ID EZ)
- An Historical Geography of the Settlement Around Lake Whatcom Prior to 1920, Technical Report 21, Institute for Freshwater Studies. (Resource Directory Citation ID WW4)

3. 1851-1900

Settlement

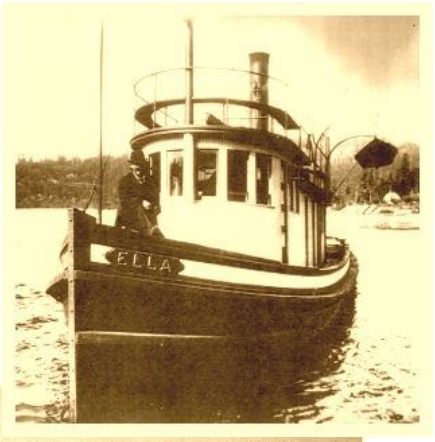
Non-Native American settlement around Lake Whatcom appeared to start in the late 1850s with the first claim for private ownership filed on June 23, 1858. Information indicates that six years later, in 1864, there were still only five claims on the west side of the lake and seven claims on the east side. In 1875, there were six land patents taken out around the northwestern end of Lake Whatcom. From 1875 to 1884 there were not any other land patents taken out around the Lake. The pace of issuing land patents around Lake Whatcom picks up after 1887 until its peak in 1891. By 1899, reports suggest that all land immediately contiguous to the Lake was in private ownership.

During the late 1800s, several towns were dedicated in the Lake Whatcom watershed, some of which did not materialize. Woodlawn, Lakeview, and Idlewild were towns that did not materialize while Geneva, Silver Beach, and Blue Canyon all experienced significant development.

There are not reports of the total population in the Lake Whatcom watershed during the mid to late 1800s in any of the resources reviewed for this report. However, information reviewed reports that at its peak the population of Blue Canyon City was 1000.

Transportation

The reported access to Lake Whatcom from Bellingham in 1864 is as a "passable trail". Information reviewed for this chronology suggests that the Silver Beach area served as the hub for reaching other areas of the watershed. People traveling to Geneva reportedly went first to Silver Beach where they took a boat to Echo Point (now called Strawberry Point) and traveled on horseback or walked by trail to Geneva.



The first effort to build a steamboat on Lake Whatcom was in 1887. The construction of the "Rose" was completed in 1890. Use of the Lake for water transport increased during this timeframe. The granting of a permit in 1891 by Whatcom County to build a dock and land boats is evidence of the increasing use of the Lake. The permit allowed extension of a wharf into Lake Whatcom at Park. The development of the wharf occurred at the same time the Blue Canyon Coal Mine located at the southern end of the Lake, and the Blue Canyon Townsite Corporation was formed and a town plat drawn up.

Information reviewed reports that the electric railway was constructed in 1892 with the first car running from Dock and Holly Street in Bellingham to Lake Whatcom on January 22, 1892. This trip to Lake Whatcom from Bellingham is said to have taken 23 minutes. Although the terminus for the electric car is not identified, it coincides with development of the Silver Beach Hotel, which became the center of activities in the early 1900s during the time of the White City amusement park.

Land and Water Use

Logging and mining were major activities in the Lake Whatcom watershed during the late 1800s. Information reviewed reports that much of the area was logged by the 1880s, and by 1895 timber on the immediate shores of Lake Whatcom are exhausted making it necessary to move the logging camps back into the hills.

The dedication of Geneva occurred in 1887. By that time, there were two lumber mills located in Geneva: Geneva Lumber Company and Bellingham Lumber Company. The Nicholas Jerns Shingle Mill was located west of the Geneva area. In 1898, J.H. Bloedel, J.J. Donovan, and Peter Larson, all of whom are reported to have been previously associated with the Bellingham and Eastern Railway Company, organize the Lake Whatcom Logging Company Other individuals active in timber during this timeframe include E.L. Gaudette who Bloedel-Donovan eventually bought out and E.K. Wood who purchased the South Bellingham Lumber Mill in 1900. Lake Whatcom was an important part of the industry because its use by the logging companies to float timber to the mills at the north end of the lake.

In 1891, the Blue Canyon Coal Mine opened at the southern end of Lake Whatcom. The Blue Canyon Townsite Corporation formed and a town plat drawn up for the 74.85 acres purchased by men associated with the Bellingham Bay and Eastern Railroad. At its peak, the town of Blue Canyon had a population of 1000. In 1895, disaster struck at the Blue Canyon Coal Mine with an explosion that killed 23 men.

Also in the 1880s, the Bellingham Bay Water Company established an intake on Whatcom Creek between the outlet from Lake Whatcom and the upper falls. The municipality later purchased the water system when the cities served by the Bellingham Bay Water Company- Whatcom and Sehome- united in 1891 to form New Whatcom.

Section 3 Abbreviated List of References:

- Whatcom County History in Photographs, Bellingham Herald. 2003. (Resource Directory Citation ID BEL)
- Ghost Towns of Lake Whatcom, 1982. Elaine Zobrist (Resource Directory Citation ID EZ)
- Ghost Towns of Lake Whatcom Updated, Bellingham Herald. 2002. (Resource Directory Citation ID HER_0902a)
- Geneva Elementary School. http://www.gen.bham.wednet.edu/museintr.htm (Resource Directory Citation ID GES)

- An Historical Geography of the Settlement Around Lake Whatcom Prior to 1920, Technical Report 21, Institute for Freshwater Studies. (Resource Directory Citation ID WW4)

3. 1901-1929

Settlement

In the early 1900s, there were as many as seven boats operating on Lake Whatcom making round trips from Silver Beach to Blue Canyon City. The information reviewed does not state whether the trips were for transport of residents, visitors, or some other purpose.

Families started moving from Blue Canyon City to Park in 1903, reportedly due to the Blue Canyon mine closing for a short period. By 1906, Park emerged as a town. The school at Blue Canyon was torn down and rebuilt in Park.

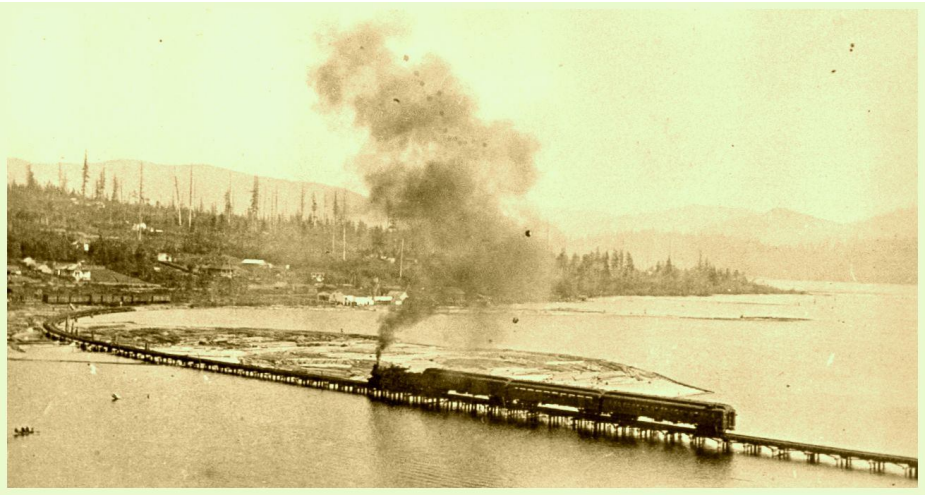
In 1912, Hinck's map of Bellingham shows Silver Beach and Geneva emerging as the two main lakeside communities. A 1916 landownership map around Lake Whatcom reflected changes in ownership and land use from the original ownership in the mid-1890s. The changes also indicated a dense population at Silver Beach, Geneva, Blue Canyon and Sunnyside. Blue Canyon City gradually disappeared with the closing of the Blue Canyon Mine in 1919.

Transportation

As previously mentioned, water transportation played a significant role in the early 1900s with seven boats operating on Lake Whatcom making round trips from Silver Beach to Blue Canyon City. A mail boat operated on Lake Whatcom from 1906 to 1925 delivering mail to residents living in communities around the Lake.

In 1901 the Bellingham Bay and Eastern Railroad was completed along the north shore of Lake Whatcom. Available information reports that a motivating factor for completing the railroad was the cost of the method used to transfer coal from Blue Canyon Mine to Bellingham Bay. Information reviewed reports that the Township of Park became the junction of the Bellingham Bay main railroad line to Wickersham, which connected with the Northern Pacific railroad line to Sumas. The Skagit branch of the Bellingham Bay and Eastern Railroad ran south from Park to Lake Whatcom Logging Company's Camp Two.

Also in the early 1900s, efforts to build connecting roads around the south end of Lake Whatcom began. In 1915, Mr. Brannian received a favorable settlement to his claim for a higher damage price than what the Township of Park was offering for the proposed road through his property. Available information reports that the court required removal of the cabin off the right of way within three months. Although the road between Park and South Bay was completed in 1919, it is reported that the route connecting roads around the south end of the lake was not completed until the early 1930s.

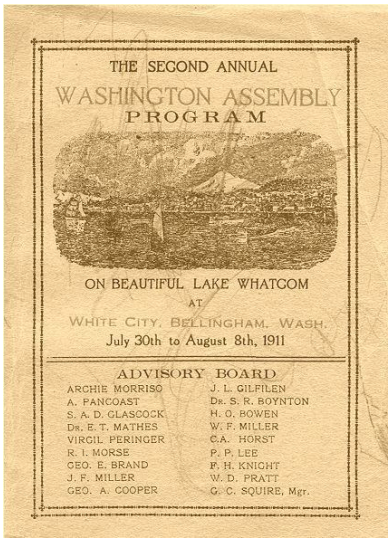


Land and Water Use

Logging was a significant industry in the Lake Whatcom watershed in the 1900s with a number of logging companies operating in the watershed. To illustrate the significance of the industry only one of the largest operations in the watershed is highlighted, which is the Lake Whatcom Logging Company established in 1898 by J.H. Bloedel, J.J. Donovan, and Peter Larson, all of whom had been previously associated with the Bellingham and Eastern Railway Company. In 1901, the Lake Whatcom Logging Company established the Larson Lumber Company, which operated a mill on an 80-acre tract of land just south of Silver Beach. In addition to these holdings, in 1904 the Lake Whatcom Logging Company owned 22,000 acres at the south end of the Lake. They used skid roads to take logs to the Lake using steam donkeys to drag the logs from the woods to the yard and then from the yard to the Lake. The Company later built numerous short railroads around the Lake gaining an advantage over their smaller competitors.

By January 1904, the daily capacity of the Larson mill was 100,000 board feet of lumber and 300,000 shingles. The plant was valued at $500,000, while the stated worth of the holdings of the company, including logging camps and timber, were estimated at $2,000,000. In 1906, the Larson Mill announced plans to double in size. The information reviewed reports that the estimated total cut of the mill for 1906 was 45,000,000 board feet of lumber. The information reviewed also reported that a new mill would handle fir exclusively while the old mill would handle cedar. The new 45-acre mill site contained 35 cottages, a sawmill

and shingle mill, three shingle dry kilns, lumber dry kilns, a planning mill, and a steel refuse burner.


THE SECOND ANNUAL
WASHINGTON ASSEMBLY
PROGRAM
ON BEAUTIFUL LAKE WHATCOM
AT
WHITE CITY, BELLINGHAM, WASH.
July 30th to August 8th, 1911
ADVISORY BOARD
ARCHIE MORRISO — J. L. GILFILEN
A. PANCOAST — DR. S. R. BOYNTON
S. A. D. GLASCOCK — H. O. BOWEN
DR. E. T. MATHES — W. F. MILLER
VIRGIL PERINGER — C.A. HORST
R. I. MORSE — P. P. LEE
GEO. E. BRAND — F. H. KNIGHT
J. F. MILLER — W. D. PRATT
GEO. A. COOPER — G. C. SQUIRE, Mgr.

The original timber cover around Lake Whatcom was almost entirely gone by 1918. The second growth timber that was present by this time was of a sufficient size for Christmas trees or pilings. Information reviewed states that some of the cutover timberland was sold by Bloedel-Donovan for farms, with a preference being given to company employees. An estimated 30,000 acres around the Lake was sold in this manner.

Between 1906 and 1907, the White City amusement park was built in the Silver Beach area. As previously noted, landownership maps published in 1912 reflected the emergence of Silver Beach as a densely populated lakeside community. The White City amusement park closed in 1919. In 1921, the Silver Beach Hotel was torn down after a vein of coal was discovered beneath it, which later proved to be of little value.

During the early 1900s, mining remained an active industry. In 1907, the Blue Canyon Mine reorganized as the Whatcom County Mining Company and operated under that name until it closed in 1919. As mntioned previously, the closing of the Blue Canyon Mine brought with it the demise of Blue Canyon City. Information reviewed reports that in 1921 a mine opened in the Geneva area. The Geneva Mine opened under the name of the Pacific Atomized Fuel Company and operated until 1922. Information reviewed reports a total of 350 tons of coal mined from the Geneva Mine.

In the early 1900s there were several passenger and freight boats operating on Lake Whatcom. The Thistle whose name later changed in 1901 to the Adelaide, operated on Lake Whatcom until it burned in 1910. In 1905, the Marguerite moved from Puget Sound to operate on Lake Whatcom. After starting operation in 1906, it shipwrecked in 1907 but was rehabilitated and continued operating. In 1904, the Cora Blake caught fire, burned to the water line, and sank between Strawberry

Point and Geneva. Remnants of the Cora Blake were still visible in the early 1980s when lake levels were low. In 1924, the Marguerite suffered a similar fate. It burned and sank near what is now Bloedel-Donovan Park.

The emergence of naphtha and gasoline powered boats began in the early 1900s. The organization of the Whatcom Motorboat Club reinforced the trend to gasoline-powered boats on Lake Whatcom. The club maintained a clubhouse at Geneva and sponsored an annual regatta until 1916.

During this timeframe, the natural reproduction of Lake Whatcom kokanee was supplemented through artificial propagation of primarily indigenous stock. A hatchery at the mouth of Brannian Creek was constructed and equipped in 1907. The Office of Whatcom County Game Commissioner was established to administer the kokanee program. In 1911, the Bellingham Herald reported that the hatchery was considered one of the best in the state and was apparently one of two hatcheries able to provide its own spawning trout.

In the early 1920s, there is an introduction of non-native kokanee stock in Lake Whatcom. Researchers had been noting a decreased size in spawning kokanee each year and had thought that size restoration might occur by introducing stock that produced larger adult fish than the native Lake Whatcom strain. Kokanee eggs from Lake Sammamish were shipped to the Brannian Creek hatchery in 1922.

Lake Whatcom Management

In 1906, the Bellingham Herald reported on a swimming ban in Lake Whatcom to prevent pollution. By the 1920s, the Bellingham population boom resulted in heavier use of Lake Whatcom for domestic water. Information reviewed reports that there is a strict protective surveillance put in place to guard against negligent misuse of the lake, and a patrol boat made regular rounds to ward off swimmers.

The dam constructed in 1911 at the outlet from Lake Whatcom raised questions by lake residents and property owners about changes in lake levels and perceived impacts. The reference material reviewed does not identify who constructed the dam and for what

purpose. It also does not identify the specific location of the dam so that it can be considered in relation to the later dam constructed by the City of Bellingham in the late 1930s.

Section 4 Abbreviated List of References:

- An Historical Geography of the Settlement Around Lake Whatcom Prior to 1920, Technical Report 21, Institute for Freshwater Studies. (Resource Directory Citation ID WW4)
- Bellingham/Lake Whatcom Coal Mines, Geneva Mine, Preliminary Assessment Report, Whatcom County, Washington. September 2004. (Resource Directory Citation ID EPA1)
- Factors Affecting the Movement of Water and Organisms Within a Regulated Multipurpose Lake, July 1, 1966-June 30, 1969. Western Washington State College. (Resource Directory Citation ID WWSC1)
- Geneva Elementary School. http://www.gen.bham.wednet.edu/museintr.htm (Resource Directory Citation ID GES)
- Ghost Towns of Lake Whatcom, 1982. Elaine Zobrist (Resource Directory Citation ID EZ)
- Lake Whatcom Watershed Environmental Assessment, March 1991. Western Washington University, Institute for Watershed Studies (Resource Directory Citation ID WW1)
- Lake Whatcom Kokanee Management History and Evaluation of Recent Population Declines, 1994. A. Looff. (Resource Directory Citation ID UW1)
- Preliminary Draft E.I.S., Lake Whatcom, September 13, 2002. Washington State Department of Natural Resources. (Resource Directory Citation ID DNR)

4. 1930-1949

There is significantly less documentation for the 1930s and 1940s than there is for the previous two decades. Available information suggests that during the 1930s there was a transition from a heavy industrial use of the watershed to an increasing multi-use watershed. Although logging in the watershed continued during the 1930s, an increasing number of homes and summer cottages are reported as being built along the shores of the northwestern portion of Lake Whatcom. This change in land use resulted in an increase in fishing, boating, and swimming. Information reviewed suggests that this timeframe started a marked relaxation of protectiveness of the lake.

The 1940s marked an end to mill and mining operations. In 1946, the Larson Mill operation liquidates and J.H. Bloedel donates 12.5 acres of the mill tract to the City of Bellingham. This land donation became Bloedel-Donovan Park. By 1948, all mining activities in the Lake Whatcom watershed ended.

Between 1937 and 1938, the City of Bellingham constructed a dam and put it into operation at the outlet of Lake Whatcom. The purpose of the dam was to provide additional water storage, maintain higher lake water level, and prevent flooding.

In 1933, the administration of the Lake Whatcom kokanee program moved from the Whatcom County Game Commission to the Washington Department of Game. During the 1940s, there was a peak return of over 30 million propagated kokanee eggs.

Section 5 Abbreviated List of References:

- An Historical Geography of the Settlement Around Lake Whatcom Prior to 1920, Technical Report 21, Institute for Freshwater Studies. (Resource Directory Citation ID WW4)
- Factors Affecting the Movement of Water and Organisms Within a Regulated Multipurpose Lake, July 1, 1966-June 30, 1969. Western Washington State College. (Resource Directory Citation ID WWSC1)
- Ghost Towns of Lake Whatcom, 1982. Elaine Zobrist (Resource Directory Citation ID EZ)
- Lake Whatcom, 1999-2000 Area and Capacity Survey, July 2001. R.L. Ferrari and S. Nuanes. (Resource Directory Citation ID BR)
- Lake Whatcom Kokanee Management History and Evaluation of Recent Population Declines, 1994. A. Looff. (Resource Directory Citation ID UW1)
- Lake Whatcom Watershed Environmental Assessment, March 1991. Western Washington University, Institute for Watershed Studies (Resource Directory Citation ID WW1)

5. 1950-1969

Land and Water Use

In 1967, the Corning Ranch became available for purchase. Information reviewed reported that the Washington State Parks and Recreation Commission was prepared to purchase the Ranch. There is not information available indicating the reason the transaction

did not occur.[1] In 1968, Sanwick Corporation purchased the Corning Ranch for $1.8 million for development of Sudden Valley.

Lake Whatcom Management

In 1953, the Whatcom County Superior Court establishes the legal maximum level for Lake Whatcom at 314.94 feet. During the 1960s, the use of Lake Whatcom as a source for drinking water became a focus of community and political activity.

In 1962, the City of Bellingham began operating the Middle Fork Diversion Dam, which supplied flow from the Middle Fork to Lake Whatcom. The diversion directed flow from the Middle Fork through a pipe to Mirror Lake before flowing into the Lake via Anderson Creek.

Also in 1962, the City of Bellingham and Western Washington State College[2] jointly sponsored a study to acquire basic information required for managing the Lake. In 1963, the Institute for Watershed Studies is established at the College. The US Department of Interior, Office of Water Research under a grant through the State of Washington Water Research Center in Pullman provides funding to study Lake Whatcom for a three-year period. The involvement of the newly created Institute for Watershed Studies in monitoring lake water quality has continued through the present time.

The Lake Whatcom Improvement Committee establishes itself in response to a request from the Whatcom County Department of Health and Planning to create a sewer district. It is reported that this citizen led Committee operated from 1964-1969 and initiated and sponsored water quality and limnological testing of Lake Whatcom in an effort to establish water quality standards. Information reviewed reports that another role of the Lake Whatcom Improvement Committee was to educate politicians and government on the importance of Lake Whatcom and the complexity of the issues.

Available information suggests that between 1966 and 1969 there was an increasing intensity in the level of discussions concerning the future of Lake Whatcom. Studies conducted by Western Washington State College indicated an increasing rate of eutrophication in northwestern portions of the lake. Although the information reviewed did not provide specific details, it reported that the collected data was used by Bellingham and Whatcom County Health Department to make decisions regulating recreational activities. Also during this timeframe, there was a temporary moratorium declared on construction of septic tanks in the immediate watershed, and the Whatcom County Health Department

[1] Washington State Department of Parks and Recreation was contacted in January 2008 to obtain information on the transaction. Staff at the Department has indicated they will conduct research to determine why the transaction did not occur, but as of March 1, 2008 the information had not been received.

[2] Western Washington State College is the current Western Washington University.

adopted restrictions on septic systems (e.g., design, percolation rate). In 1968, Water District No. 10 formed to address the failing septic systems around the lake. Prior to the 1970s, sanitary sewers did not serve the lakeshore homes. In the late 1960s to early 1970s, the Water District acquired the Geneva Water Corporation and Sudden Valley Water Company.

Section 6 Abbreviated List of References:

- Announcement Interlocal Agreement Between city of Bellingham, Whatcom County, and Water District 10 Concerning Joint Management of Lake Whatcom, May 1998. (Resource Directory Citation ID COB1)
- Center for Pacific Northwest Studies, Western Washington University (Resource Directory Citation ID CPNWS)
- Factors Affecting the Movement of Water and Organisms Within a Regulated Multipurpose Lake, July 1, 1966-June 30, 1969. Western Washington State College. (Resource Directory Citation ID WWSC1)
- Northshore Interceptor Facility Plan, November 1975. Yoshida, Inc. (Resource Directory Citation ID YOS)
- Phase I Report Lake Whatcom and Middle Fork Diversion Analysis, December 1998. (Resource Directory Citation ID TT)
- State Park System Wants Corning Ranch, 1967. Bellingham Herald (Resource Directory Citation ID BEL_01)
- Sudden Valley Plans on Conservative Expansion, 1998. Bellingham Herald (Resource Directory Citation ID CA_98)

6. 1970-1979

Land and Water Use

The Sudden Valley development moved forward in the early 1970s. The Sudden Valley Community Association, which originally formed as the Sudden Valley Community Club, incorporated in August of 1973. In October 1973, Sun Mark Inc. bought out Sanwick Corporation. Legal challenges involving Sun Mark, Sudden Valley Community Association, and Sanwick occurred in 1974 related to development of Sudden Valley. By 1975, there were 360 full-time Sudden Valley residents. Continental Mortgage Investors, an initial financial backer of Sudden Valley, assumed development of Sudden Valley from Sun Mark, Inc in 1976. That same year the legal challenges are settled, and Sudden Valley Community Association purchases the Sudden Valley facilities and most of the remaining undeveloped land for $1.6 million.

In December 1976, Water District No. 10 placed a moratorium on new sewer connections in Sudden Valley. Water District No. 10 claimed that the Sudden Valley main

sewer line was overloaded and leaky. In January 1977, the Water District lifts the moratorium. Information reviewed did not provide further explanation of the concerns, their validity, and/or how the concerns were addressed leading to a lifting of the moratorium.

It is reported that non-native kokanee stock had been introduced in Lake Whatcom in the 1920s. At the time, researchers had noted a decreased size in spawning kokanee and had thought that size restoration might occur by introducing stock that produced larger adult fish than the native Lake Whatcom strain. The next reporting of information associated with the Lake Whatcom kokanee program shows up in the 1970s. There was not a comprehensive search conducted on the Lake Whatcom kokanee program as part of this effort given the purpose and scope of this project. Conducting such a search may identify additional information on the status of the kokanee program for the fifty-year timeframe between the 1920s and 1970s. The information that was available, however, suggests that there was a decline in the kokanee population since the 1920s. Changes made to the program in the 1970s included efforts to increase survival rates by feeding fry prior to release. The total estimated annual spawning survey estimates of wild kokanee in Lake Whatcom tributaries (excluding Brannian Creek) in 1974 are 10,000 and in 1975, 8,000.

Technical Studies

As previously reported, the 1960s was really the start of routine monitoring of Lake Whatcom water quality. This interest in studying the lake expanded from an analysis of a few parameters such as bacteria, temperature, and pH to conducting a water flow and circulation study of Lake Whatcom in 1970, completing bathymetric measurements in 1972, and conducting an analysis of metals, pesticides, and volatile organics in 1978. In 1970 the conclusions of a Western Washington State College technical report suggests that algal growth increasing in the littoral zone was possibly due to increasing nutrient levels from increased runoff from building and road and ditch construction, and from the level of the lake being held at a relatively constant elevation since completion of the pipeline in 1962.

Starting in the early seventies, the City of Bellingham and Water District No. 10 began maintaining records for data collection associated with their respective water treatment operations.

Section 7 Abbreviated List of References:

- Announcement Interlocal Agreement Between City of Bellingham, Whatcom County, and Water District 10 Concerning Joint Management of Lake Whatcom, May 1998. (Resource Directory Citation ID COB1)
- Factors Affecting the Movement of Water and Organisms Within a Regulated Multipurpose Lake, July 1, 1966-June 30, 1969. Western Washington State College. (Resource Directory Citation ID WWSC1)

- Lake Whatcom Kokanee Management History and Evaluation of Recent Population Declines, 1994. A. Looff. (Resource Directory Citation ID UW1)
- The Limnology of Lake Whatcom, Washington. I. Morphometry, 1972. B., Lighthart, G.F. Kraft, and C.J. Flora (Resource Directory Citation ID WW3)
- Sudden Valley Community Association, 2007. (Resource Directory Citation ID SV1)
- Sudden Valley Plans on Conservative Expansion, 1998. Bellingham Herald (Resource Directory Citation ID CA_98)
- Sudden Valley Really A Community Emerging, Bellingham Herald, 1975. (Resource Directory Citation ID LA)

7. 1980-1989

Transportation

One report containing information on traffic counts indicates that between 1979 and 1989 traffic volume increased significantly in the Lake Whatcom watershed. During the reported timeframe, the study identifies an increase of traffic counts of 158% on Lake Whatcom Boulevard between Strawberry Point and Lake Louise, 55% increase on Lake Louise Road between Austin Street and Lake Whatcom Boulevard, and 100% on North Shore Drive between Y Road and the Terminus Collector. The report did not identify the "Terminus Collector".

Land and Water Use

During the 1980s, reports indicate a significant resurgence in timber harvesting as timber stands became of merchantable age and size.

In 1982, the Whatcom County Council adopted the Lake Whatcom subarea plan and zoning. The approval included an interim adoption of urban level uses and densities effective through December 31, 1984, and a moratorium on public and private capital facilities within the Northshore residential-rural designation until December 31, 1983. After subsequent extensions of the interim zoning, the zoning became final in 1985. The approval for the Sudden Valley shopping center was granted in 1984.

A recommendation in a 1982 fisheries survey proposed introducing a new sport fish into Lake Whatcom. The proposal was based on the prevalence of gravel and exposed bedrock habitats throughout the lake, the minimal angling pressure, and the presence of a

large crayfish population as a possible forage base. In the late summer of 1983 and 1984, the Washington Department of Game released smallmouth bass into Lake Whatcom's Basin 1. The spawning surveys conducted in both 1985 and 1986, estimated 500 wild kokanee in Lake Whatcom tributaries excluding Brannian Creek. This is significantly less than the 1974 and 1975 estimates of 10,000 and 8,000, respectively.

Technical Studies

In 1982, URS Consultants are selected to complete the Lake Whatcom Restoration Study funded through a grant under the Department of Ecology. From 1983-1985 URS and Institute for Watershed Studies conducted water sampling under contract to the City of Bellingham and Whatcom County. In 1985, the Institute for Watershed Studies and the Lake Whatcom Advisory Committee raised concerns about the draft report published by URS. It was concluded that the final Lake Whatcom Restoration Study submitted by URS in 1986 was incomplete and lacking a management plan. The portion of funding withheld from the consultant funded the Institute for Watershed Studies to work with Whatcom County Planning Department to complete the report.

In 1986, City of Bellingham consultant James M. Montgomery, Consulting Engineers (JMM) completed their study of Lake Whatcom as a continued water source and concluded that water quality was very good and well within the acceptable standards of the water treatment industry. The JMM study recommended developing an emergency response plan outlining actions to protect public health in the event of a significant event affecting water quality. The JMM study also recommended initiating a monitoring program that focused on nutrient loading, coliform bacteria, and organic contaminants.

Lake Whatcom Management

Lake Whatcom management surfaced as a major focus in the 1980s. In 1981 the City of Bellingham, Whatcom County, and Water District No. 10 discussed jointly sharing local match contribution for a state grant to conduct a Lake Whatcom Restoration Study. As previously mentioned, URS Consultants was selected in 1982 and monitoring began in 1983 for a two-year period. In 1983, the Whatcom County Council appointed members to the Lake Whatcom Advisory Committee

In 1982, Water District No. 10 proposed to the Bellingham and Whatcom County Councils planning committees a management plan and zoning code for the Lake Whatcom watershed. Management actions proposed included coordinated programs, performance standards, and ordinances.

The Lake Whatcom Watershed Management Plan (LWWMP), which identified management actions to address key watershed issues, was released in 1986 with a revised version published in 1987. The Institute for Watershed Studies and Whatcom County Planning Department prepared the LWWMP when the County concluded that the URS Consultants' Lake Whatcom Restoration Study was incomplete.

Management actions recommended in the James M. Montgomery, Consulting Engineer (JMM) report released in 1986 included establishing a review panel that meets annually to review the results of lake monitoring programs, general status of Lake Whatcom development, and advise the City of Bellingham. The JMM Consulting Engineers report was prepared under contract with the City to conduct a study on the continued use of Lake Whatcom as a water supply source.

In the late 1980s, the Whatcom County Natural Heritage Task Force identified 7,500 acres in the Lake Whatcom watershed considered desirable for public ownership. At Whatcom County's request, the Washington Department of Natural Resources initiated a land exchange with the property owner, which was the Trillium Corporation.

Section 8 Abbreviated List of References:

- 1998 Lake Whatcom Survey: The Warmwater Fish Community 15 Years after Introduction of Smallmouth Bass, Warmwater Enhancement Program, WDFW 1999. (Resource Directory Citation ID WDFW1)
- Announcement Interlocal Agreement Between City of Bellingham, Whatcom County, and Water District 10 Concerning Joint Management of Lake Whatcom, May 1998. (Resource Directory Citation ID COB1)
- Chronology of Lake Whatcom Watershed Management Planning, Lake Whatcom Advisory Committee. 1987. (Resource Directory Citation ID WC1)
- Geneva Area Water Rates Hiked, Bellingham Herald. 1981. (Resource Directory Citation ID PA)
- Lake Whatcom Watershed Environmental Assessment, March 1991. Western Washington University, Institute for Watershed Studies (Resource Directory Citation ID WW1)
- Lake Whatcom Kokanee Management History and Evaluation of Recent Population Declines, 1994. A. Looff. (Resource Directory Citation ID UW1)
- Lake Whatcom Watershed Management Plan, Institute for Watershed Studies. Revised 1987. (Resource Directory Citation ID WW2)

- Preliminary Draft E.I.S., Lake Whatcom, September 13, 2002. Washington State Department of Natural Resources. (Resource Directory Citation ID DNR)
- Proposed Watershed Management Controls, 1982. (Resource Directory Citation ID WD2)
- Sudden Valley Shopping Center Gets Nod, Bellingham Herald. 1984. (Resource Directory Citation ID BEL_02)

8. 1990-1999

Population and Urbanization

Information presented in an environmental assessment for the Lake Whatcom watershed estimates that the watershed population in 1991 was 6,800 with a projected population in 2001 of 8,540 assuming a 2.5% growth rate. Transportation information presented in the same report indicates that in 1990 the estimated peak hour traffic on watershed arterials exceeded acceptable volumes of service on Cable Street, Lake Whatcom Boulevard., and North Shore Drive.

The early 1990s presented a number of challenges to Water District No. 10 in their efforts to provide sewer service to properties within their service area. In 1991, the City of Bellingham denied a request from Water District No. 10 to amend the 1974 sewage contract for additional sewage, and in 1992 the District's application for a shoreline substantial development permit along Lake Whatcom Boulevard for a second sewer interceptor to primarily service Sudden Valley platted lots was denied. This denial set in motion years of legal challenges and appeals that involved to varying degrees the Water District, environmental organizations, Whatcom County, and Sudden Valley. In 1992, Water District No. 10 imposed a temporary moratorium on additional sewer connections from certain areas in Geneva and all of Sudden Valley based on an engineering analysis that the existing sewer interceptor had reached capacity. In 1998, the Whatcom County Hearing Examiner issued a conditional-use permit to Water District No. 10 to install an 800,000-gallon sewage detention tank to reduce occurrences of overflows and provide for 150 sewer hookups in each of the next four years.

Land and Water Use

In 1993, the 7500-acre land exchange initiated in the late 1980s between Washington Department of Natural Resources (DNR) and Trillium Corporation is completed and approved by the Board of Natural Resources. This transaction was considered one of the most complicated land exchanges in DNR history. It also resulted in the state becoming the majority forest landowner in the watershed. In 1994, the Commissioner of Public Lands approved DNR to begin the process for completing a Lake Whatcom Landscape Plan.

Warmwater fish surveys conducted in 1998 showed different results than those in 1982. In 1998 abundance was 32.1% for yellow perch, 23.9% for smallmouth bass, and 22.2% for peamouth chub. In 1982, abundance was 60.5% for peamouth chub, 11.5% for kokanee, and 10.8% yellow perch. The 1998 report indicates evidence exists that to some extent smallmouth bass prey on the native salmonids in the lake. Given that, management strategies were recommended that might improve the lake's warm water fishery without affecting native salmonid fisheries.

Technical Studies

In 1998, Washington Department of Ecology released a study reporting the detection of several contaminants of concern in water, sediment, and fish tissue samples taken from Lake Whatcom and its tributaries. Also in 1998, Washington Department of Ecology lists Lake Whatcom on the Washington State 303(d) list of impaired waterbodies for not meeting criterion for dissolved oxygen, and Silver Beach Creek for not meeting fecal coliform criterion.

Lake Whatcom Management

During the early 1990s the commitment to a joint management process involving the three jurisdictions in the watershed - Whatcom County, City of Bellingham, and Water District No. 10. - was formalized. In 1990 the Whatcom County Executive, the Bellingham Mayor, and the Water District No. 10 Manager began meeting on a regular basis to develop a long-term strategy for Lake Whatcom management. In 1992, a draft set of goals and policies to guide management actions in the Lake Whatcom watershed was developed. In 1993, the Bellingham and Whatcom County Councils and Water District No. 10 Commission adopted the strategies developed to implement the goals and policies.

A 1998 Interlocal Agreement between the City of Bellingham, Whatcom County, and Water District No. 10 further formalizes the Lake Whatcom cooperative management process. Key elements of the Interlocal Agreement included annual review of program accomplishments and identification of new actions, identifying the roles of the councils/commission and administration, providing specific opportunities for public participation, and recommendations for minimal funding contributions from each jurisdictions for joint management activities.

Section 9 Abbreviated List of References:

- 1998 Lake Whatcom Survey: The Warmwater Fish Community 15 Years after Introduction of Smallmouth Bass, Warmwater Enhancement Program, WDFW 1999. (Resource Directory Citation ID WDFW1)
- Announcement Interlocal Agreement Between City of Bellingham, Whatcom County, and Water District 10 Concerning Joint Management of Lake Whatcom, 1998. (Resource Directory Citation ID LWMP3)
- Chronology of Events, Sanitary Sewer System Limitations and Contractual Capacity Limitations, Rehabilitation of Sewer System for Reduction of Infiltration and Inflow, 1994. (Resource Directory Citation ID WD1)
- Lake Whatcom Total Maximum Daily Load Groundwater Study, 2005. (Resource Directory Citation ID ECOL2)
- Lake Whatcom Watershed Cooperative Drinking Water Protection Project-Results of 1998 Water, Sediment, and Fish Tissue Sampling, 1999. (Resource Directory Citation ID ECOL1)
- Lake Whatcom Watershed Environmental Assessment, March 1991. Western Washington University, Institute for Watershed Studies (Resource Directory Citation ID WW1)
- Preliminary Draft E.I.S., Lake Whatcom, September 13, 2002. Washington State Department of Natural Resources. (Resource Directory Citation ID DNR)
- Sudden Valley Plans on Conservative Expansion, 1998. Bellingham Herald (Resource Directory Citation ID CA_98)
- Washington State Department of Ecology, 2007. (Resource Directory Citation ID ECOL3)

9. 2000-2007

Population and Urbanization

In 2002, Water District No. 10 began construction of a $5.1 million sewer line along Lake Louise Road. This came after nearly a decade of legal challenges to the construction of a sewer interceptor to serve Sudden Valley and parts of Geneva.

In 2003, the City of Bellingham estimated that 85,700 people obtained their drinking water through the public water supply, which uses Lake Whatcom as its source. It is estimated that an additional 250 residences draw their water directly from the lake. The 2007 estimate is that Lake Whatcom is the source of drinking water for 95,000 people.

Land and Water Use

Georgia-Pacific closed their pulp mill in 2001, which reduced their water usage from 28 million gallons per day to between 4 and 5 million gallons per day.

In 2004, Water District No. 10 began serving the Geneva service area from the District's water treatment system located in Sudden Valley. Prior to this action, the District served Geneva with water purchased from the City of Bellingham. Nonetheless, the source for the water is Lake Whatcom.

In 2000, the Washington Department of Natural Resources formed the Lake Whatcom DNR Landscape Planning Advisory Committee. This committee formed in response to a Washington State Legislative directive to the DNR that they work with an inter-jurisdictional committee to address water quality and public safety issues associated with developing a landscape plan. A Preliminary Draft EIS to obtain public input on the range and nature of alternatives to be analyzed in preparing the landscape plan was released by DNR in 2002. The Board of Natural Resources rejected the resulting landscape plan completed in 2004. In October 2004, Whatcom County filed suit to force the Board of Natural Resources to adopt the landscape plan. The Board of Natural Resources adopted the landscape plan in November 2004.

In 2002, Washington Department of Fish and Wildlife conducted full-scale cutthroat surveys in four creeks draining into Lake Whatcom: Smith, Olson, Beaver, and Anderson Creeks. Biologists found one thousand redds and varying age fish during these surveys. Also in 2002, 20,000 kokanee were counted in creeks draining to Lake Whatcom while in 2001 5,000 spawning kokanee were counted.

Technical Studies

In 2000, the Washington Department of Fish and Wildlife, Washington Department of Ecology, Washington Department of Health, and Whatcom County Health Department expanded on the 1998 Department of Ecology study of water, sediment, and fish tissue samples. The 2000 study included a wider variety and a greater number of edible sport fish for analysis of mercury. Specimens from four of the seven edible species that evaluated contained total mercury concentrations that exceeded EPA's proposed screening level. Because of these studies, a fish consumption advisory was issued in 2001 that was based on mercury concentrations. In 2002, Department of Ecology, USGS, and Whatcom County Health Department investigated possible sources of mercury to Lake Whatcom.

Lake Whatcom Management

Between 2000 and 2007, jurisdictions within the watershed pursued a significant number and variety of management actions. The Resource Directory includes individual entries for the key actions including interim and permanent ordinances while this Companion Report summarizes the types of management actions implemented during this timeframe.

In the late 1990s, Water District No. 10, Sudden Valley Community Association, Whatcom County, and City of Bellingham all pursued actions for reducing population density in different areas of the Lake Whatcom watershed. In 2000, Water District No. 10

and City of Bellingham increased water rates for the purpose of purchasing developable and priority properties.

During this timeframe, both the City of Bellingham and Whatcom County approved ordinances limiting development and amount of impervious surfacing on a site. The process of developing and approving the ordinances involved a series of emergency ordinances, interim ordinances, and/or moratoriums. The result, however, was final approval of ordinances addressing development in the Lake Whatcom watershed. The Resource Directory associated with this Companion Report provides individual entries associated with approving those ordinances.

In 2001, Washington State University developed a special blend fertilizer, which Whatcom Farmer's Co-op manufactured. The Lake Whatcom blend fertilizer is a phosphorus-free fertilizer designed for use by homeowners around Lake Whatcom to prevent runoff of phosphorus into the lake. In 2005, both Whatcom County and the City of Bellingham approve ordinances banning use of phosphorus fertilizer in the watershed.

City of Bellingham began construction on two stormwater projects in the North Shore area in 2003. In 2007, Whatcom County constructed stormwater projects in the Geneva area. These large projects are examples of efforts by the local governments to address stormwater runoff and treatment from developed areas in the watershed.

In 2004, Whatcom County approved an ordinance phasing out the use of two-stroke engines on Lake Whatcom. A similar ordinance passed in 2005 by the City of Bellingham.

October 2007, Bellingham Mayor and Whatcom County Executive proposed a joint City/Council agreement to hire a director to administer a single program with an annual budget of $500,000 that merges the two jurisdictions' protection efforts.

Section 10 Abbreviated List of References:

- Bellingham/Lake Whatcom Coal Mines, Geneva Mine, Preliminary Assessment Report, Whatcom County, Washington. September 2004. (Resource Directory Citation ID EPA1)
- Lake Whatcom Citizen Task Force, Background Information, 2000 (Resource Directory Citation ID LWMP1)
- Lake Whatcom Total Maximum Daily Load Groundwater Study, 2005. (Resource Directory Citation ID ECOL2)
- Mercury in Sportfishes of Lake Whatcom, Washington, Including a Review of Potential Impacts to Aquatic Resources and People, 2001. (Resource Directory Citation ID WDFW2)
- Preliminary Draft E.I.S., Lake Whatcom, September 13, 2002. Washington State Department of Natural Resources. (Resource Directory Citation ID DNR)
- Whatcom County Government website for annual ordinances approved 2005-2007 (www.whatcomcounty.us/council/code/ordinances)