QUILCENE BASIN

Water Resource Inventory Area 17

This upper Hood Canal-Straits drainage area contains all the rivers and independent streams from Quilcene Bay to Sequim Bay on the Olympic Peninsula. The Big Quilcene River is the largest system in this basin. It is located near the head of Quilcene Bay, along with the Little Quilcene River. Proceeding northward along the western shoreline of Hood Canal the first streams encountered are Tarboo Creek at the upper end of Dabob Bay, Thorndyke Creek entering Thorndyke Bay, and Shine Creek entering Squamish Harbor. Entering Admiralty Inlet north of the mouth of Hood Canal is Chimacum Creek followed by Ludlow Creek at Port Ludlow, Snow Creek, Salmon Creek, Contractors Creek, and Eagle Creek within Discovery Bay on the Strait of Juan de Fuca. The basin terminates with Jimmycomelately Creek and two smaller independent streams, Dean Creek and Johnson Creek, in Sequim Bay, which is a small arm off the Strait near Dungeness Spit. There are 303 identified streams providing over 428 linear miles of rivers, tributaries, and small independent streams in this drainage.

The Big Quilcene River enters Hood Canal near the head of Quilcene Bay. It is one of the major rivers draining northern Hood Canal, with a stream length of 18.9 miles and an additional 60.2 miles of tributaries. Headwaters of this system lie mostly within the mountainous area of the Olympic National Forest. Extensive logging has been done in several portions of the upper Big Quilcene River watershed over a period of many years. The existing vegetative cover is therefore a mixture of old growth coniferous timber, some recently logged areas, and a large amount of second growth timber (predominantly coniferous) in various stages of reforestation. The overall physical character of this portion of the system is rugged, mountainous terrain with the river and tributaries flowing through steep-walled valleys.

The watershed downstream from the Olympic National Forest includes the Penny Creek drainage and approximately 4 miles of the lower mainstem river. The gradient here shallows considerably and the valley broadens. Vegetation is primarily second growth timber with deciduous types predominating along the valley floor. The community of Quilcene, located a short distance above the river mouth, is the major settlement on the watershed. Several small farms and rural homes are also located below the Olympic National Forest boundary along the river.

While the Big Quilcene River is accessible to anadromous fish for approximately nine miles, most salmon usage is in the lower three miles. There are no Quilcene River tributaries accessible to salmon.

A smaller independent drainage, the Little Quilcene River, enters Hood Canal at the extreme end of Quilcene Bay approximately 0.5 miles north of the Big Quilcene River. The Little Quilcene is 12.2 miles in length and has tributaries totalling approximately 29.1 miles. Roughly the upper one-half of the drainage lies within the Olympic National Forest, an uninhabited, steep mountainous terrain that has been logged extensively for many years. The predominant vegetation is coniferous forest, much of which is second growth seedings on previously logged land. Terrain in the lower seven miles of watershed becomes less rugged approaching the mouth. The lower three miles form a broad

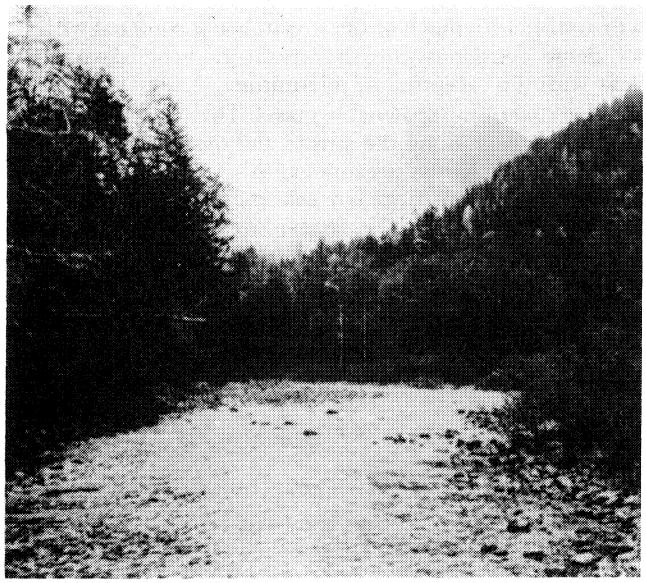


PHOTO 17-1. The Big Quilcene River is the only system large enough to support chinook salmon in this basin.

valley that terminates at the village of Quilcene. Vegetative cover in this lower section is mixed deciduous and coniferous second growth timber.

Stream accessibility to anadromous fish is upstream to the Little Quilcene River Dam at river mile 7.1. Stream gradient is intermittently steep in the upper area, but becomes increasingly moderate proceeding downstream.

The remaining streams entering northern Hood Canal along its western shoreline are small independent drainages. These include Tarboo Creek, at the upper end of Dabob Bay, Thorndyke Creek entering Thorndyke Bay, and Shine Creek entering Squamish Harbor. Tarboo and Thorndyke Creeks are nearly equal in size. Tarboo has 6.9 miles of mainstem and 4.7 miles of tributaries, while Thorndyke has 6.3 mainstem miles and 8.2 miles of tributaries. Both streams drain shallow lowland valleys throughout their length. Tarboo Creek is the more heavily settled with rural homes and several farms along its length, while Thorndyke Creek is mainly undeveloped and is covered with second growth coniferous and deciduous vegetation. Stream gradient is moderate in the upper and lower portions of Tarboo Creek with a long section of shallow gradient and slow moving water in the middle portion of the stream. Gradient on Thorndyke Creek is mostly moderate.

The largest and most important stream entering Admiralty Inlet north of the mouth of Hood Canal is Chimacum Creek. Ludlow Creek, entering Puget Sound at Port Ludlow, is the only other stream of consequence.

Chimacum Creek is 14.1 miles in length and has tributaries totalling 11.4 miles. Most of the mainstem and its major tributary, East Fork Chimacum Creek, lie in broad fertile valleys containing numerous dairy farms. The stream has shallow gradient and is slow moving through this section. The gradient steepens in the upper part of the watershed. Mixed second growth timber lies in periphery around the farm lands in the higher elevations of the watershed. The

communities of Chimacum, Hadlock, and Irondale are located along the lower three miles of stream above its entrance into Port Townsend.

Ludlow Creek flows through a lowland valley of second growth timber with much of the stream being bordered with rather dense deciduous growth. Stream gradient is mostly shallow with the exception of intermittent sections of moderate slope containing spawnable gravel. There is some rural home development along the stream and the community of Port Ludlow lies near the stream mouth.

Port Discovery is a large bay near the eastern end of the Strait of Juan de Fuca. The largest stream entering Discovery Bay, Snow Creek, is 10.1 miles in length. It has many branches with tributaries totalling 30.0 miles in length. With its upper headwaters in the Olympic National Forest, the Snow Creek system drains the higher foothills of the northeast Olympic Peninsula. The upper watershed contains some stands of old growth coniferous timber and has large areas of second growth in various stages of development. There has been logging within the watershed periodically over many years. The lower mainstem and Andrews Creek, its major tributary, are interspersed with rural homes and farms. Vegetative cover in the wooded sections is mixed second growth timber. The small community of Discovery Bay is located at the stream mouth.

Stream gradient throughout the lower five miles of Snow Creek and the lower two miles of Andrews Creek is moderate and the streams contain excellent spawning gravel. The gradient gradually becomes steeper progressing upstream. Salmon Creek enters the head of Discovery Bay immediately to the west of Snow Creek, sharing the same estuary. Salmon Creek is 9.1 miles long and has tributaries totalling approximately 19.5 miles. Physical characteristics of the watershed pertaining to terrain, vegetative cover, and habitation are similar to those previously described for Snow Creek. Two minor independent drainages, Contractors Creek and Eagle Creek, also enter Port Discovery.

Sequim Bay, a small arm of the Strait of Juan de Fuca approximately five miles west of Port Discovery, has one major tributary, Jimmycomelately Creek, and two smaller independent drainages, Dean Creek and Johnson Creek. Only Jimmycomelately Creek is of major importance to salmon production. Its origin is in the foothills of the northern Olympic Peninsula, an area covered primarily by coniferous forest interspersed with logged-off areas. The headwaters form a high, broad valley where several rural homes and farms are located. Below this the valley steepens and becomes relatively rugged progressing downstream, again broadening a short distance above its mouth at the rural community of Blyn.

Fish Inventory and Distribution

Four species of Pacific salmon; chinook, coho, pink, and chum, currently utilize the Quilcene basin in the upper Hood Canal-Straits area.

Chinook Salmon — The Big Quilcene River is the only system containing sufficient flows during the late summer-early fall spawning migration period to accommodate a sustained run of fall chinook. The low summer flows prevalent in the independent streams throughout this basin restrict upstream salmon migrations prior to the heavy fall rains. Occasionally a few chinook are observed spawning in the Little Quilcene River, particularly on years associated with wet summers. It is felt these chinook are strays from the run destined for the Big Quilcene. Man-made features of the Big Quilcene River include a diversion dam at RM 9.4, above the upper limits of salmon migration and the Federal Fish Hatchery at the mouth of Penny Creek at RM 2.8. An electric fish barrier at the hatchery intercepts the chinook migration and diverts them into hatchery ponds for egg-taking purposes. The lower two miles of the river contains a moderate gradient with excellent gravel and is used extensively by chinook spawners. This lower river section is also utilized extensively for rearing by both the natural juvenile progeny and the hatchery juvenile releases.

The adult chinook spawning migration begins in early September and continues into mid-October. Spawning commences by mid-September and terminates early in November (Table 17-1). Following incubation and subsequent emergence, the majority of chinook fry rear in the system from 90 to 120 days prior to entering the estuary with the major out-migration between April and June. These movements coincide with the higher spring run-off flows.

Annual hatchery rack returns of chinook have ranged from 62 to 583 for the period 1966-1971, averaging 290 per year. It is estimated that natural spawners in the lower 2.6 miles of river averaged 100 chinook during this same period (Table 17-2).

This is an introduced stock of chinook into this system and a large portion of adult returns are attributed to hatchery production.

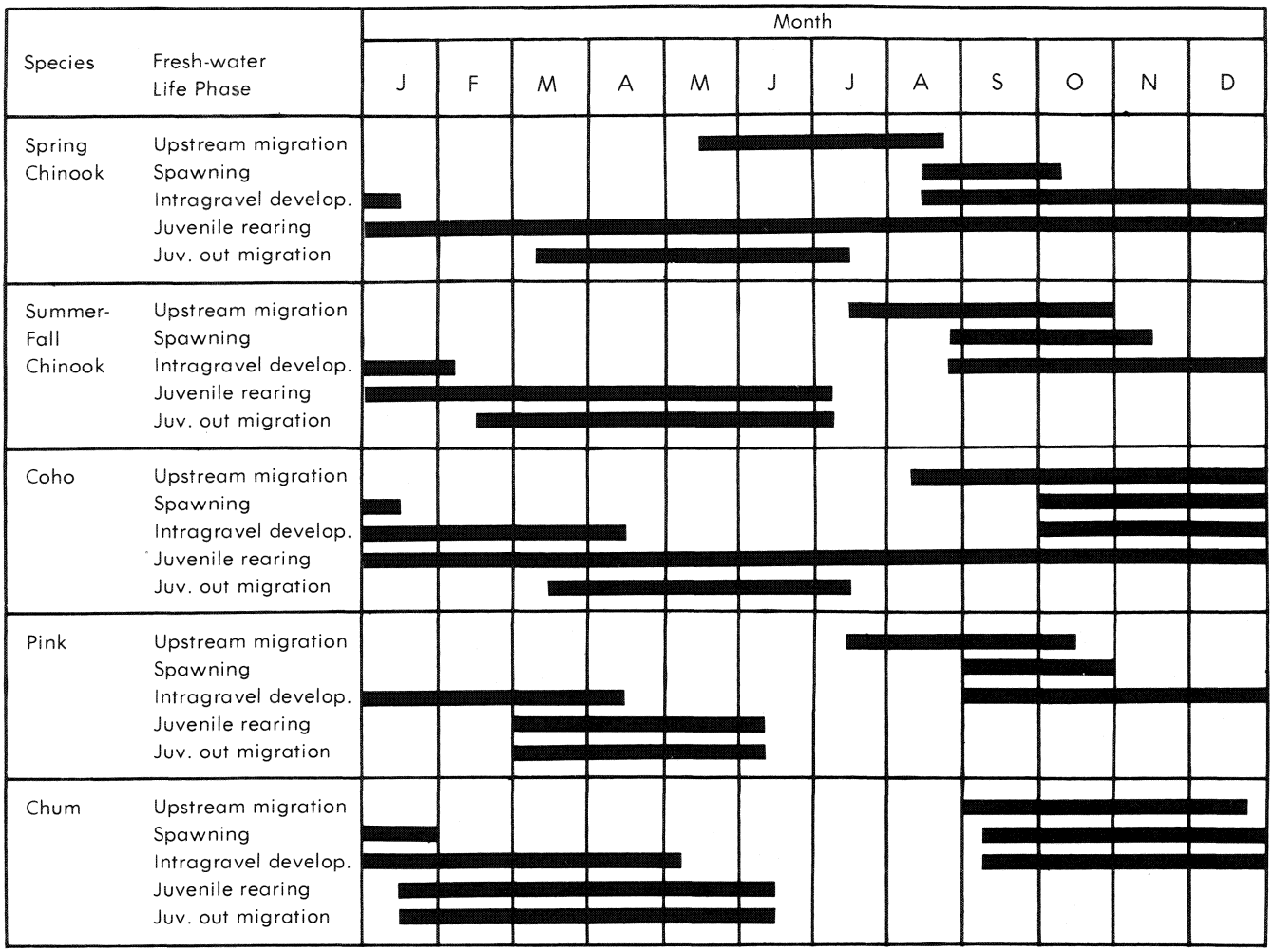
Coho Salmon — All accessible streams and tributaries draining the upper Hood Canal-Straits basin are utilized by coho salmon. Spawning occurs in almost every stream area where suitable spawning habitat and conditions permit, including the mainstem of the Big Quilcene River up to the diversion dam barrier at RM 9.4, and in the mainstem Little Quilcene River up to the City of Port Townsend diversion dam at RM 7.1. There are no tributaries on the Big Quilcene River that are accessible for fish use. The independent watersheds known to be of particular importance include the Little Quilcene River, Chimacum Creek, Snow Creek, and Salmon Creek. The other streams all contain runs of coho of lesser magnitude. Salmon Creek is accessible to anadromous fish for approximately two miles above its mouth. A falls and cascades at RM 1.7 is the upper limit of migration on Jimmycomelately Creek.

Juvenile coho rear throughout the accessible stretches of all the basin streams. Additional rearing occurs in the estuaries, bays, and harbors within the marine environment of this coastline.

Mature coho begin entering the basin streams in early October when fall rains have provided sufficient flows to attract the spawners. The peak of migration occurs in early November while spawning extends over the period from late October until the end of December. The fry emerge from the gravel starting in early March and generally remain in the system for more than a year. However, low summer flows in the smaller streams force the majority of juveniles to leave the system early on dry years in order to survive. The normal out-migration, however, occurs in the second year of freshwater existence from late February to mid-April.

Based on spawning ground surveys and the physical

Timing of salmon fresh-water life phases in the Quilcene Basin [1] WRIA 17



composition of these streams related to quantity of rearing area, it is estimated that coho escapements to the basin have ranged from 3,550 to 11,200 for the period 1966 to 1971, averaging 7,270 annually.

Pink Salmon — Very few pink salmon inhabit the drainages of this basin. Only an incidental number of pink salmon have been observed in the Big and Little Quilcene rivers since 1955 during regular chinook surveys. These odd-year runs have failed to increase into significant populations. Two hundred and eighty thousand progeny of the 1971 Hoodsport pink returns were released into the Big Quilcene River in an endeavor to stimulate the production of this species. However, the 1973 returns appear to be dismal, indicating poor survivals. The only other pink salmon run within this basin occurs in Salmon Creek at Discovery Bay, where this small population (less than 100) utilizes the lower two miles of stream.

Adult pinks enter the basin drainages around October 1 and spawning commences shortly thereafter. These late-run populations have very short duration spawning cycles in comparison to the early-run pinks that normally occur in Hood Canal. Based on spawning ground information, the estimated annual escapement is insignificant, amounting to less than 200 adults.

Chum Salmon — In this basin chum salmon inhabit all the rivers and streams accessible to anadromous fish. Concentrated peak chum spawning areas in this basin are located in the lower two miles of the Big Quilcene River, the lower four miles of Little Quilcene River, the lower one mile in Tarboo and Thorndyke creeks, the lower three miles of Chimacum and Snow creeks, the lower one mile of Salmon Creek and of Jimmycomelately Creek.

There are two distinct runs of spawning chum salmon in the Big Quilcene and Little Quilcene rivers. The early run enters the rivers in late September and spawns from October 1st to 20th, while the late-run spawners move upstream into these rivers the first week of November and spawn from mid-November to mid-December. All the smaller independent streams contain only late chum runs whose upstream migration begins in October and continues well into November with spawning occurring from mid-November and through most of December. Following incubation and subsequent fry emergence, the juveniles move into the estuary. This migration occurs from late February into May.

Spawning ground data from the Quilcene basin reveals the estimates of annual chum escapements have ranged from 5,400 to 12,800 for the period 1966 to 1971, averaging about 8,900 adults annually.

TABLE 17-2. Salmon Escapement Level for the Quilcene Basin WRIA 17.

Species	1966-1971 Escapements [1] Range	Average
Chinook	175— 700	400
Coho	3,550—11,200	7,300
Chum	5,400—12,800	8,900

Natural Escapement Potential	
Chinook	800
Coho	10,000
Pink	< 100
Chum	12,000

[1] *Includes natural plus artificial combined escapements.*

PHOTO 17-2. Predominate runs of salmon in the Little Quilcene River are coho and chum.

Salmon Production

A six-year base period, 1966 through 1971, has been selected for the presentation of all salmon production figures. This span of years is used for both naturally and artificially produced fish, as well as escapement and harvest figures.

Since no state salmon hatcheries are located within this basin, annual supplemental plants of coho salmon have been delegated from the Hoodsport Hatchery to supply the Little Quilcene River and Shine Creek and from the Dungeness Hatchery to supply Chimacum, Snow, Salmon, Contractor, and Jimmycomelately creeks. No fall chinook juveniles have been released into any of these independent streams from hatchery production. Coho juveniles have been released into the Little Quilcene River starting back in 1953 with plants ranging from 8,500 to 25,000 and averaging 15,000 annually. The Federal Fish Hatchery at the mouth of Penny Creek on the Big Quilcene River spawns, hatches, and rears fall chinook and coho salmon for release back into the same watershed. Return of adult coho to the Big Quilcene Hatchery rack ranged from 1,325 to 2,457 for the period 1966 to 1971 with an average of approximately 2,000. Chum salmon are handled at this hatchery from stock obtained at Walcott Slough, an independent, short-run, spring-fed drainage just north of the Dosewallips River. During the past five years from 1968-1972 total chum runs to Walcott Slough have ranged from 3,660 to 8,500 and approximately 75% of each year's return is recovered at the rack and handled in the hatchery. These are late-run chums that arrive in early December and spawn from mid-December to the end of December. These chum fry are usually planted back into the same system.

Although the annual hatchery releases have been somewhat sporadic to streams in this basin, the commercial and sport catch statistics indicate that the present salmon planting program contributes approximately 500 chinook, 630 coho, and 4,000 chum to these fisheries annually.

Harvest

Salmon produced or reared in the Quilcene basin contribute to the U.S. and Canadian, Pacific Ocean sport and commercial fisheries and to sport and commercial fisheries existing through the Straits, Puget Sound, and Hood Canal. The estimated total contribution (all species) to these various fisheries has in recent years, during the 1966-71 period, ranged from 20,125 to 59,700 salmon.

Commercial salmon net fishing areas 4 and 4A comprise much of the marine waters of this basin and provide significant harvests of all five salmon species. A special net fishery season is conducted at the mouth of Hood Canal for chum salmon in the waters from the Hood Canal bridge to Brown Point on Toandos Peninsula. The marine waters of Quilcene and Dabob bays and north to Brown Point are salmon preserves open only to a sport fishery. No Indian fishery is located within this basin.

The question of Indian fishing rights has been contested for many years and adjudication now in progress may cause significant alterations in both fishing patterns and distribution of catch.

Sport angling for salmon is concentrated at specific geographical land marks, particularly projecting points and bays, where tides influence the movements of food organisms and fish life. Prominent sport fishery areas include Oak Head and Hazel Point on Toandos Peninsula, Bangor, the north and south ends of Maristone Island, Port Townsend, Protection Island, and the mouths of Discovery Bay and Sequim Bay. Parts of sport fishing areas 6 and 12 encompass the marine waters of this basin where in 1970 over 193,000 angler trips were recorded. It is judged that approximately one-third of these trips occurred within the basin. No sport angling for salmon is permitted within the rivers and streams of this drainage.

Limiting Factors

Limiting factors refer to conditions that lead to a complete loss or reduction of the environment's fish production potential, excluding harvest or exploitation. They include only those conditions presently considered alterable. Within the Quilcene basin major limiting factors include seasonal flooding, low summer flows, and barriers due to gradients, cascades, debris jams, or beaver dams.

Stream flow — Destructive seasonal flooding occurs infrequently in each of the basin's drainages. Within the smaller streams the effect is usually minimal. The mountainous nature of the upper watersheds on Big Quilcene River, Little Quilcene River, and Snow and Salmon creeks intensifies the run-offs to these systems due to the extensive drainage areas and snow packs in the higher elevations. However, that part of the basin that lies in the Port Townsend-Sequim region is within the Olympic range rain shadow and receives less than half as much rainfall as the Hood Canal streams.

Seasonal low flow is a serious limiting factor in virtually every basin stream and is especially critical where extensive logging and land clearing has occurred. There is little or no opportunity for low flow augmentation in the smaller independent streams.

Physical barriers — On the Big Quilcene River a water diversion dam is located at RM 9.4, which is above the upper limits of migration, and a fish rack barrier is operated at the National Fish Hatchery at the mouth of Penny Creek at RM 2.8. Diversion of water from the Big Quilcene in conjunction with low summer flows has, on occasion, been a limiting factor in total salmon production. The City of Port Townsend water diversion dam at RM 7.1 on the Little Quilcene River drains water into Lords Lake for storage. This diversion dam is the upper limit of fish migration. Another diversion dam occurs at RM 3.6 on Snow Creek immediately above the confluence of Crocker Lake outlet; however, anadromous species easily pass this barrier. A falls at RM 4.9 is impassable to fish migration.

A series of cascades occurs at approximately RM 2.0 on Salmon Creek which salmon are able to ascend; however, a cascade at RM 5.7 is the upper extremity of migration. All the independent streams draining into Sequim Bay are short run due to steep gradients containing impassable cascades or falls. Jimmycomelately Creek contains the longest accessible stream stretch with a falls at RM 1.8. Intermittent barriers created by debris build-up or by beaver activity occur periodically on all of the basin's smaller streams.

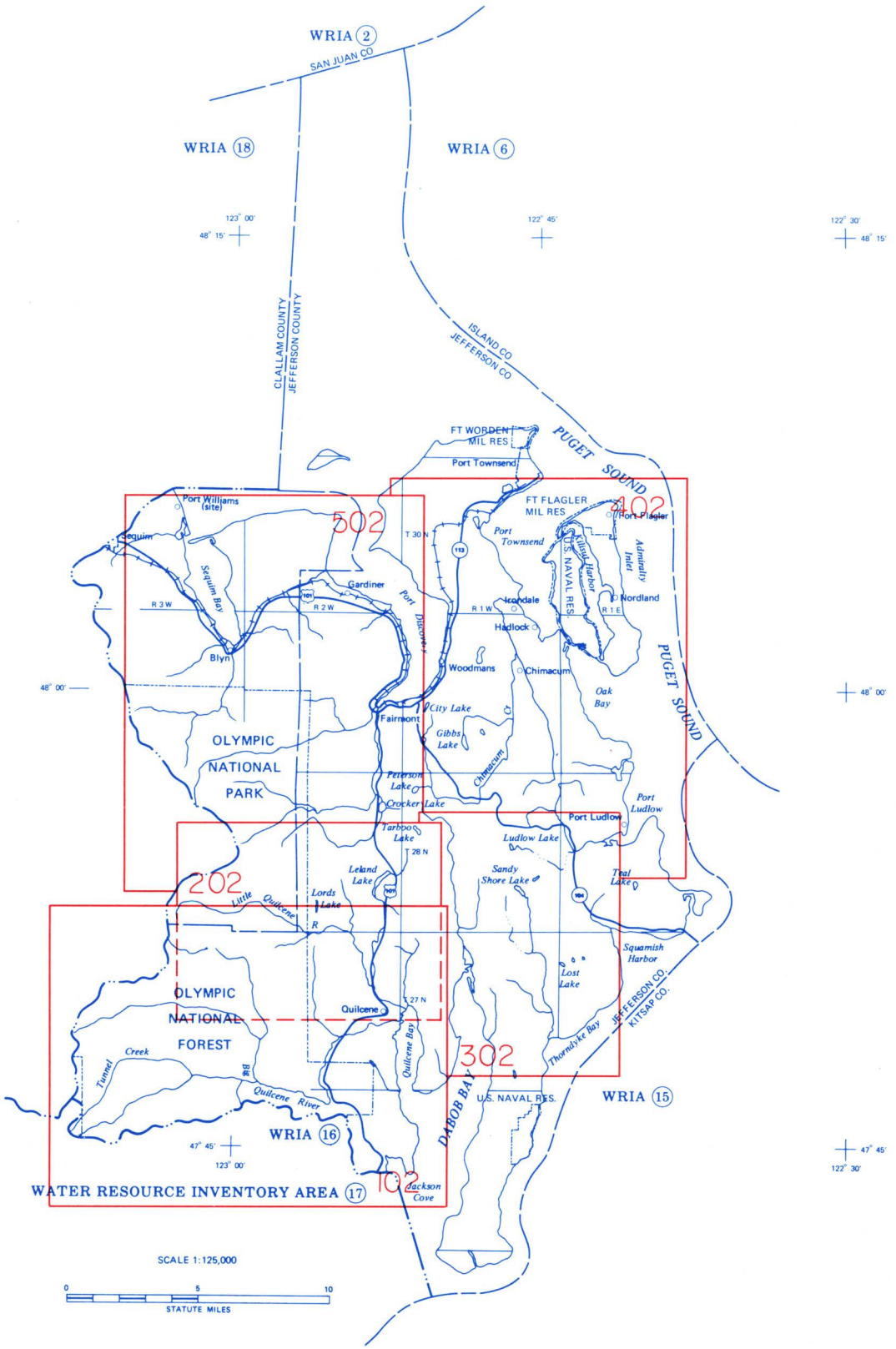
Water quality — No major towns or concentrated populations are found adjacent to any of the rivers or streams in this basin. Port Townsend is the largest town and is located adjacent to marine waters rather than freshwater sources. Water quality is not a particularly important factor at this time in the streams of this area although local industries such as pulp mills do contribute to poor water quality in Port Townsend Bay.

Limited spawning and rearing — Good spawning and rearing areas are located in the lower sections of all the larger streams and rivers in this basin. Extreme low summer flows affect all of the smaller streams restricting rearing capacities. The flows of both Big and Little Quilcene rivers also recede to levels of limited rearing area during dry summers. Limited spawning and rearing are also found in the upper stream and river headwaters where gradients are extreme and larger boulder materials are predominant with little patch gravel.

PHOTO 17-3. Poor quality streambeds limit the spawning success of salmon. (Tarboo Creek)

Watershed development — Extensive logging has occurred over this entire watershed; however, most of the area has regained its cover through second growth timber and brush. Minor logging activity is currently taking place. Summer home developments and private recreational membership camping developments are accelerating at this time. The trend toward retirement communities is also spreading into this basin which will bring about increased demands for additional water diversions for municipal, agricultural, and recreational needs. These demands will present further limitations on natural fish production.

QUILCENE BASIN WRIA 17
Index to Key Map



QUILCENE BASIN

WRIA - 17

BIG QUILCENE RIVER

This drainage includes the entire Big Quilcene River watershed, as well as 4 small independent streams south of the river. The Big Quilcene River contains a total of 100.8 stream miles of which more than 80% (81.9 miles) lie in 29 tributaries. The remaining 18.9 miles are in the mainstem. The independent drainages total 17.1 miles. All enter the west shore of Hood Canal in Jefferson County.

Stream Description

Three major branches comprise the headwaters of the Big Quilcene River, all originating between the 5,000 and 6,000-foot level of the Olympic Mountains. Tunnel Creek to the south originates from Mount Constance, the mainstem middle branch from Buckhorn Mountain, and Townsend Creek from Mount Townsend to the north. Below the confluence of the branches, the river flows easterly to enter Hood Canal at Quilcene Bay, near the town of Quilcene. Terrain in the watershed is rugged, with deep, narrow valleys rising 3,000 feet to adjacent mountain tops. A narrow canyon with vertical walls is located between R.M. 5.0 and 7.0. Downstream the valley gradually widens to R.M. 2.8, and finally opens into a broad valley below R.M. 2.5.

Gradient is steep above R.M. 3.5 and particularly so above R.M. 5.0. There is a passage barrier at R.M. 7.6; however, it is doubtful that fish ascend this far due to the cumulative effect of numerous cascades and rapids below. Boulder, rubble, and patch gravel characterize the streambed. Downstream, the gradient gradually moderates and the lower 2 miles contain gravel riffles and pools.

The upper watershed contains ongoing and past logging operations and is in various degrees of revegetation. Cover, including that along the stream, is predominantly coniferous. Watershed and stream bank cover within the lower 3 miles is less dense and includes deciduous and coniferous trees. Some range and farm development has taken place in the lower 3 miles, and several rural homes are located along the river near its mouth.

The streambed and channel is moderately stable, although a few erosion problems have occurred in the lower river due to flooding. These problems were possibly aggravated by diking between R.M. 2.0 and 2.5, which resulted in scouring of spawning material and deposition in downstream areas. Sketchy records of stream flow indicate that mean annual flow is about 200 cfs, with low flows 20 cfs or less near the river mouth. Low flow problems are intensified by diversion of up to 26 cfs or municipal water supply for the City of Port Townsend.

Most tributaries are located in the upper watershed and are inaccessible. The only lower tributaries of importance are Penny Creek at the location of the Quilcene National Fish Hatchery, and a small unnamed right bank tributary at mile 2.25. Penny Creek is inaccessible to salmon except at the hatchery, while the other tributary is accessible in its lowermost reaches only.

Of the 4 independent drainages, 3 are utilized by salmon. Maple Creek has good gravel and favorable gradient in the lower 0.5 mile; however, it is dry during summer and fall months. Spencer Creek contains spawning gravel near the stream mouth; however, gradient increases rapidly through the lower 0.3 mile, changing to rubble and coarse material. The small tributary just to the south of the Big Quilcene River has favorable gradient and contains spawning gravel.

Salmon Utilization

Coho and chinook production is dominated by releases from the federal hatchery. Coho spawn naturally through accessible areas of the river, while chinook spawn and rear downstream from the hatchery. Chum are the predominant wild species, having both early and late spawning populations. Escapement typically totals about 5,500. Most spawn within the lower 2 miles of river, while the late run also uses the small tributary at R.M. 2.25. Spencer Creek supports about 500 chum spawners, while Maple Creek has a minor chum run. The unnamed tributary just south of the Big Quilcene River produces coho.

Limiting Factors

The steep gradient above mile 3.0 is the primary natural feature restricting salmon production. Low summer stream flows, combined with diversion of water to the City of Port Townsend, have impacted production of the stream. Diking and channelization of the stream below U.S. Highway 101 has destroyed spawning area and reduced production downstream.

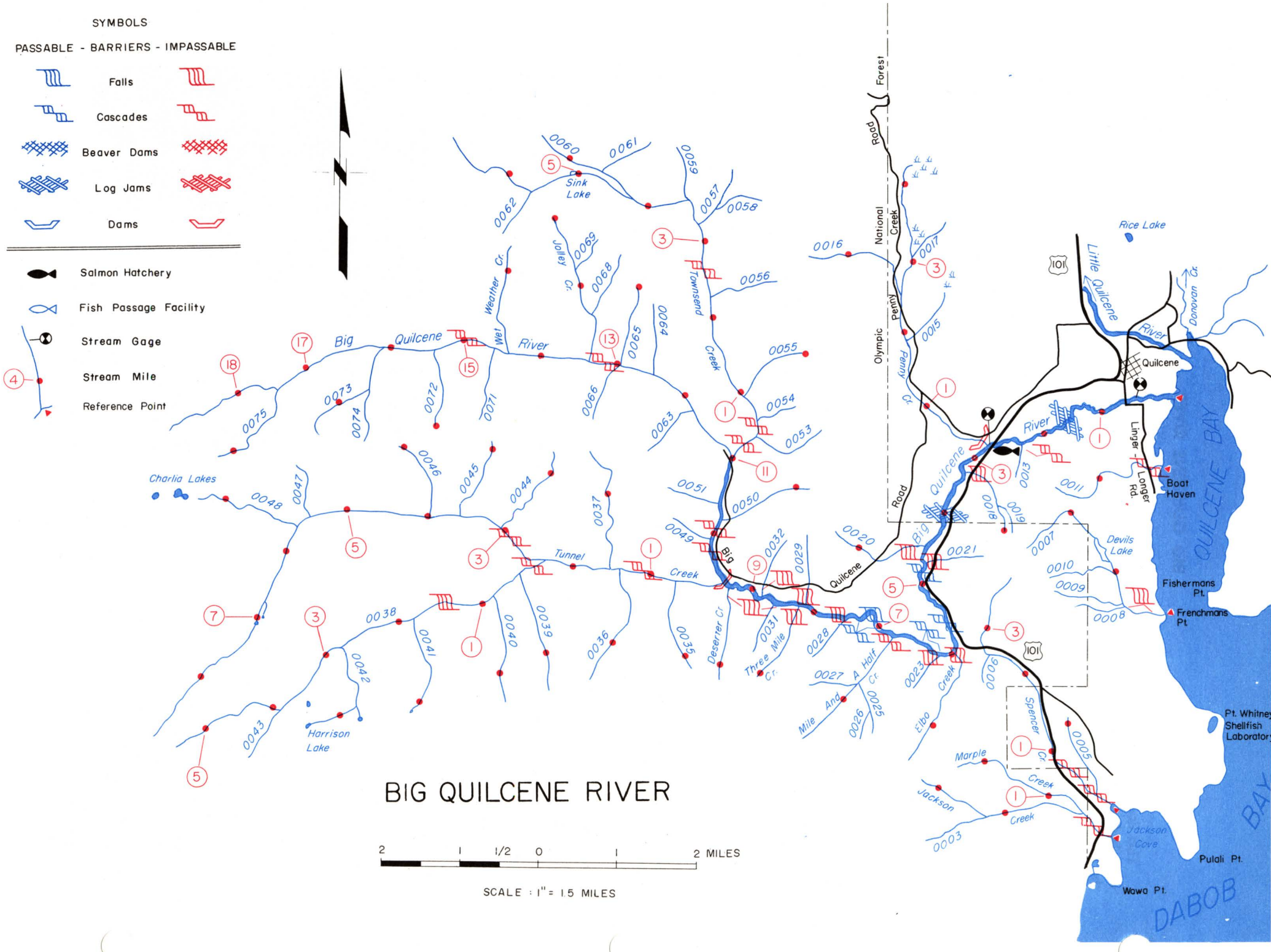
Beneficial Developments

The Quilcene National Fish Hatchery has contributed to the large return of coho and chinook to the system. Chum salmon are also hatched and reared here but are released at Walcott Slough, near the Dosewallips River.

Habitat Needs

Proper logging management, including close observance of the hydraulic code, is needed, and any additional water diversion from the stream should be discouraged. Repair of the diked area to restore the stream to a normal meandering flow pattern would be beneficial.

PHOTO 17-4. Big Quilcene River in lower mile.


SYMBOLS
PASSABLE - BARRIERS - IMPASSABLE
Falls
Cascades
Beaver Dams
Log Jams
Dams
Salmon Hatchery
Fish Passage Facility
Stream Gage
Stream Mile
Reference Point
BIG QUILCENE RIVER
2 1 1/2 0 1 2 MILES
SCALE : 1" = 1.5 MILES
Big Quilcene River
Wet River
Weather Cr.
Jolley Cr.
Townsend Creek
Sink Lake
Charlia Lakes
Harrison Lake
Tunnel
Big Creek
Deserter Cr.
Three Mile Cr.
A Half Mile Cr.
Elbo Creek
Spencer Cr.
Marple Creek
Jackson Creek
Forest Road
National Creek
Olympic Penny Cr.
Rice Lake
Little Quilcene River
Donovan Cr.
Quilcene
Linger Longer Rd.
Boat Haven
QUILCENE BAY
Devils Lake
Fishermans Pt.
Frenchmans Pt.
Pt. Whitney Shellfish Laboratory
Jackson Cove
Pulali Pt.
Wawa Pt.
DABOB BAY
101

BIG QUILCENE RIVER
Quilcene Basin — WRIA 17

Stream Number	Stream Name	Location Of Mouth	Length	Drainage Area	Salmon Use
0001	Marple Creek	Sec13,T26N,R2W	2.4	—	Coho, Chum
0002	Jackson Creek	RB-0.5	2.2	—	None
0004	Spencer Creek	Sec13,T26N,R2W	3.8	—	Coho, Chum
0005	Unnamed	LB-0.2	1.1	—	None
0007	Unnamed	Sec1,T26N,R2W	2.6	—	Unknown
	Devils Lake	Outlet-1.2	—	—	
0011	Unnamed	Sec25,T27N,R2W	1.7	—	Unknown
0012	Big Quilcene River	Sec19,T27N,R1W	18.9	—	Chin., Coho, Pink, Chum
0014	Penny Creek	LB-2.8	4.2	—	None
0016	Unnamed	RB-2.5	1.45	—	None
0018	Unnamed	RB-3.4	1.0	—	None
0020	Unnamed	LB-4.55	1.35	—	None
0022	Elbo Creek	RB-6.0	1.5	—	None
0024	Mile and a Half Cr.	RB-6.75	1.6	—	None
0030	Three Mile Creek	RB-8.15	1.0	—	None
0033	Deserter Creek	RB-9.25	1.15	—	None
0034	Tunnel Creek	RB-9.3	8.9	23.0	None
0035	Unnamed	RB-0.75	1.2	—	None
0036	Unnamed	RB-1.45	1.6	—	None
0037	Unnamed	LB-1.51	1.6	—	None
0038	Unnamed	RB-2.3	5.4	—	None
0039	Unnamed	RB-0.4	1.4	—	None
0040	Unnamed	RB-0.8	1.3	—	None
0041	Unnamed	RB-1.8	1.1	—	None
0042	Unnamed	RB-2.7	1.35	—	None
0044	Unnamed	LB-3.0	1.2	—	None
0045	Unnamed	LB-3.5	1.05	—	None
0046	Unnamed	LB-3.95	1.0	—	None
0048	Unnamed	LB-5.65	1.3	—	None
0050	Unnamed	LB-10.2	1.15	—	None
0052	Townsend Creek	LB-11.0	6.95	—	None
0055	Unnamed	LB-0.95	1.0	—	None
0060	Unnamed	LB-4.2	1.5	—	None
0065	Unnamed	LB-12.94	1.1	—	None
0067	Jolley Creek	LB-13.35	2.0	—	None
0070	Wet Weather Creek	LB-14.4	1.25	—	None
0072	Unnamed	RB-15.4	1.0	—	None

BIG QUILCENE RIVER
Quilcene Basin — WRIA 17

Stream Number	Stream Name	Location Of Mouth	Length	Drainage Area	Salmon Use
0073	Unnamed	RB-16.1	1.45	—	None
0075	Unnamed	RB-17.4	1.2	—	None

LITTLE QUILCENE RIVER

Included in this drainage is the entire Little Quilcene River plus two independent tributaries, all of which enter the head of Quilcene Bay. The Little Quilcene contains 12.2 miles in its mainstem plus 43.0 linear miles in 14 tributaries. Total mileage within the independent drainages is 8.2.

Stream Description

The Little Quilcene River flows through Quilcene, entering the bay about one mile north of the Big Quilcene River. Its headwaters are on the north side of Mount Townsend, and in Bon Jon Pass in the Olympic Mountains. It flows southeasterly and is joined by Howe Creek at mile 5.2, and Leland Creek at mile 1.7, its two major tributaries.

The watershed has been extensively logged, but much is well reforested. Uppermost watershed areas have received the most recent logging. Most of the stream bank cover is deciduous, and forms a dense canopy over the stream throughout most of its length, with exception of the lower two miles. Here the cover becomes more intermittent, as land use includes numerous home sites and a few farms near Quilcene.

While the valley is rather steep and narrow, the terrain is less severe than most other Hood Canal tributaries flowing from the Olympic Mountains. It becomes shallow and less well-defined over the lower three miles of river. The upstream limit for anadromous fish is a steep cascade section at approximately mile 6.6. Above this point gradient continues very steep, and at times is precipitous. Gradient is also steep downstream with coarse boulder and cobbles predominating; however, some patch gravel provides suitable spawning material. The slope gradually shallows throughout the remainder of the river length. While suitable spawning gravel becomes increasingly available in downstream areas, it never becomes abundant. The stream also contains relatively few pools.

U.S.G.S. stream gaging records cover a 7-year period. Mean stream flow at mile 1.8 was 53.9 cfs, with minimum flows ranging from 5 to 13 cfs. A diversion dam, providing municipal water for Port Townsend, is located at mile 7.1. This facility can divert water to Lords Lake Reservoir to supplement the city's major water source from the Big Quilcene River. Diversions were possible beginning in 1957, and stream gage records predate this diversion. Capacity of the intake is 9.56 cfs which is greater than the recorded low flow. No fishway is provided at the dam, since it is above the natural migratory limit.

The river channel is stable and shows little evidence of meandering or eroding throughout its length. One exception is the area immediately downstream from the Center-Quilcene Road (mile 0.9) where some damage has resulted from a hydraulics project that channelized a section of the river.

Howe Creek, the largest tributary within the watershed, has a steep gradient and it provides little suitable area for salmon. Ripley Creek and Leland Creek provide some suitable spawning and rearing area for salmon.

Of the two independent drainages, Donovan Creek has excellent spawning gravel and is an important salmon stream.

Salmon Utilization

Coho use all accessible mainstem areas to approximately mile 6.6, as well as the lower reaches of Howe, Ripley, and Leland creeks. Donovan Creek also provides excellent coho production. Chum salmon use the lower Little Quilcene River. An early run spawns in late September in the lower mile of stream, while a late run spawns in late December and early January between R.M. 0.5 and 3.0. Escapements have been below the desired level in recent years, which is approximately 2,700 spawners for the two stocks combined. A few chinook and pink salmon utilize the Little Quilcene River.

Limiting Factors

As is common to Hood Canal streams flowing from the Olympic Peninsula, steep gradient and naturally occurring low summer and fall stream flows limit production, particularly for coho. The limited amount of suitable spawning gravel and difficulty of stream access during September and October restricts the Little Quilcene chum and chinook production. Any water diversion during low flow periods further limits production.

Beneficial Developments

No projects nor programs have been conducted for the purpose of benefitting salmon production. Plants of yearling coho were make drom 1953 to 1962, and fingerling plants have been made on occasions since that date.

Habitat Needs

Logging practices and watershed management programs should include consideration of salmon resources to maintain stream habitat at its present production level. Diversion of water during low flow periods should be restricted.

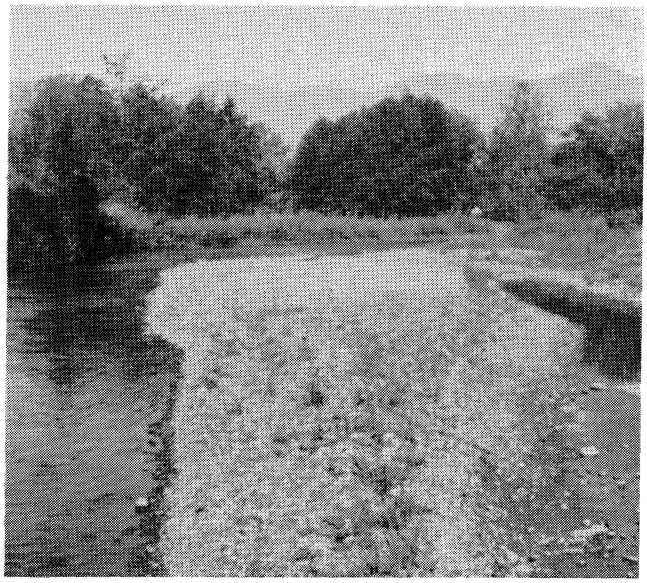
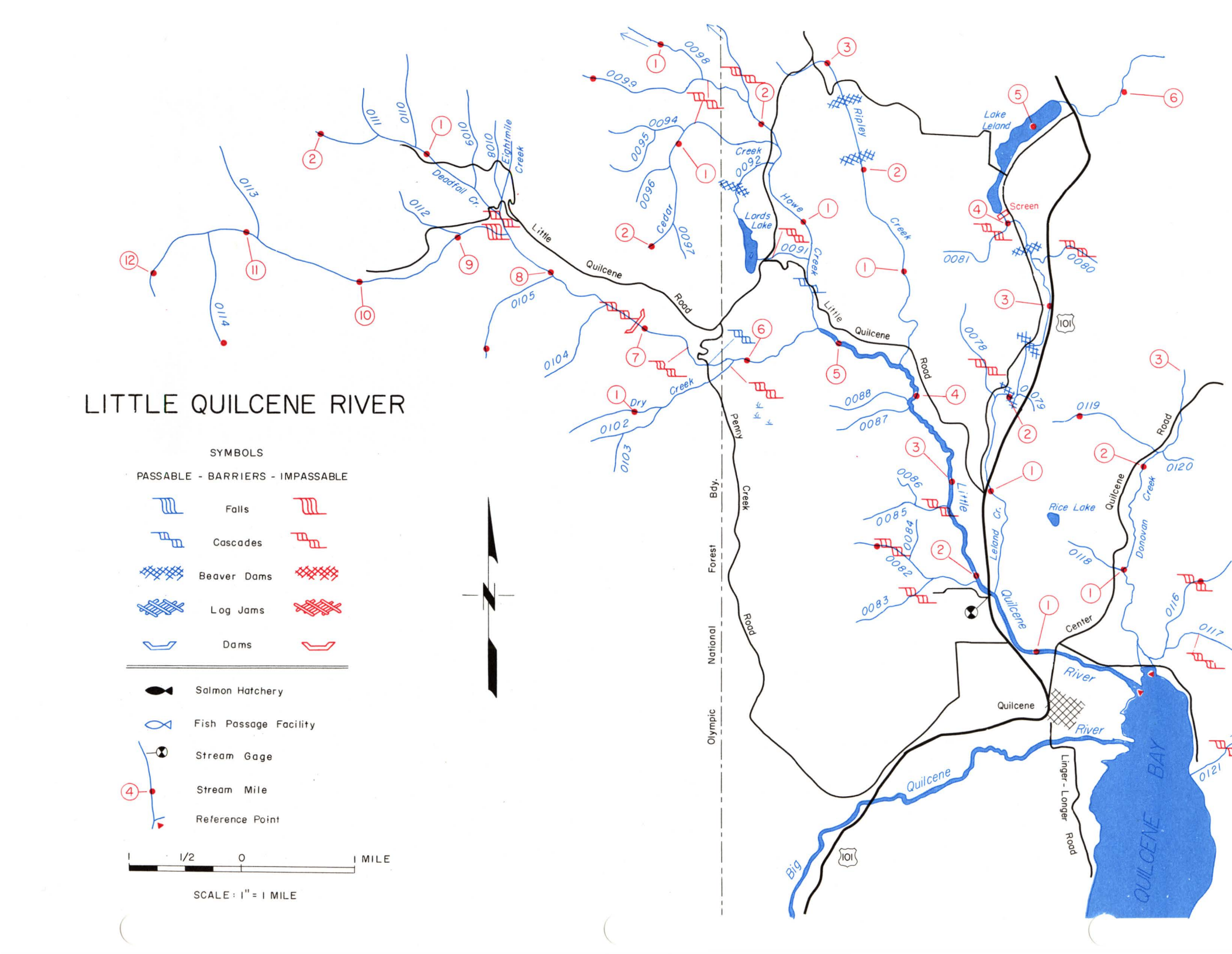


PHOTO 17-5. Little Quilcene River near mouth.


LITTLE QUILCENE RIVER
SYMBOLS
PASSABLE - BARRIERS - IMPASSABLE
Falls
Cascades
Beaver Dams
Log Jams
Dams
Salmon Hatchery
Fish Passage Facility
Stream Gage
Stream Mile
Reference Point
1 1/2 0 1 MILE
SCALE: 1" = 1 MILE
Little Quilcene Road
Deadfall Cr.
Eightmile Creek
Cedar Creek
Lords Lake
Howe Creek
Ripley Creek
Lake Leland
Screen
Penny Creek
Dry Creek
Little Quilcene River
Leland Cr.
Rice Lake
Donovan Creek
Center Road
Olympic National Forest Bdy.
Quilcene River
Linger-Longer Road
Big Quilcene River
QUILCENE BAY
101

LITTLE QUILCENE RIVER
Quilcene Basin — WRIA 17

Stream Number	Stream Name	Location Of Mouth	Length	Drainage Area	Salmon Use
0076	Little Quilcene R.	Sec18,T27N,R1W	12.2	—	Chin., Coho, (Pink), Chum
0077	Leland Creek	LB-1.7	6.55	11.3	Coho, Chum
	Lake Leland	Outlet-4.1	—	—	
0082	Unnamed	RB-1.95	1.2	—	Coho, (Chum)
0089	Ripley Creek	LB-4.35	3.5	—	Coho
0090	Howe Creek	LB-5.2	3.4	—	Coho
0093	Cedar Creek	RB-1.8	2.0	—	Unknown
0098	Unnamed	RB-2.25	2.45	—	Unknown
0099	Unnamed	RB-0.5	1.1	—	None
0101	Dry Creek	RB-6.1	1.6	—	Unknown
0105	Unnamed	RB-7.95	1.05	—	None
0106	Deadfall Creek	LB-8.55	2.0	—	None
0114	Unnamed	RB-11.35	1.0	—	None
0115	Donovan Creek	Sec18,T27N,R1W	3.0	—	Coho, (Chum)
0116	Unnamed	LB-0.1	1.4	—	Coho, (Chum)
0119	Unnamed	RB-2.2	1.2	—	(Coho)

UPPER DABOB BAY
Independent Drainages

A large number of small independent drainages originate on Bolton Peninsula, Toandos Peninsula, and the west side of Hood Canal to Tala Point. This area is in the northernmost portion of Hood Canal, located in Jefferson County. A total of 39 streams are included, with Tarboo and Thorndyke creeks being the only major drainages. There are 37 other minor streams, most of which are less than one mile in length. Stream mileage totals 69.2, with one-half of this in Tarboo and Thorndyke creeks.

Stream Descriptions

Bolton and Toandos peninsulas are narrow extenstion of land projecting into Hood Canal, and neither yield the opportunity for formation of large stream drainages. Shorelines along these peninsulas, as well as along Hood Canal north to Tala Point, are steep, with exception of the valleys at the head of Dabob Bay and Thorndyke Bay. The entire area is sparsely settled, with occasional rural homes, a few small farms, and recreational residences at scattered locations along the shoreline. Three small communities lie within the area: Dabob, at the head of Dabob Bay; Coyle, near the tip of Toandos Peninsula; and Shine, on Squamish Bay south of the Hood Canal floating bridge.

Predominant vegetation is second-growth timber, with recent logging operations being conducted intermittently throughout the drainage area. Streams within the area are typically small and steep, and have excellent stream bank cover of brush, conifers, and deciduous trees. A number of streams have intermittent flows, or become extremely low in late summer and fall.

Tarboo Creek flows in a southerly direction and enters the head of Dabob Bay. It has moderate gradient throughout except in the uppermost headwaters, and in a farmland section between R.M. 1.0 and 3.0 where the slope is very shallow. Stream substrate is predominantly gravel in the lower and upper sections, with a sandy and muddy bottom between R.M. 1.0 and 3.0. Upper limit of access for anadromous fish is near R.M. 5. A left bank tributary at mile 0.8 has moderate gradient with suitable spawning gravel, and is accessible to salmon in its lower reaches.

Thorndyke Creek is accessible to above R.M. 4. Gradient is moderate through most of its length, becoming shallower near the stream mouth. Substrate is predominantly gravel, with fine material in the lowermost areas. There has been very little development of the Thorndyke Creek watershed, aside from past logging operations. Revegetation is in various stages throughout the watershed.

Shine Creek contrasts with most of the other small drainages in that it has moderate gradient with sand gravel substrate, and flows through a swamp and small lagoon near its mouth.

Salmon Utilization

Tarboo and Thorndyke creeks are the only important salmon-producing streams within this district. Other streams, collectively, have only minor contributions. Coho spawn in lower and upper Tarboo Creek areas, while chum use the lower area only. Both chum and coho spawn in Thorndyke Creek. Coho spawning populations within this drainage area total approximately 400. Desired chum escapement is 1,000 fish; however, this level has not been reached during recent years.

Limiting Factors

Most streams within this area are too small and too steep to be important salmon producers. Gravel quality in Tarboo and portions of Thorndyke Creek limit chum production.

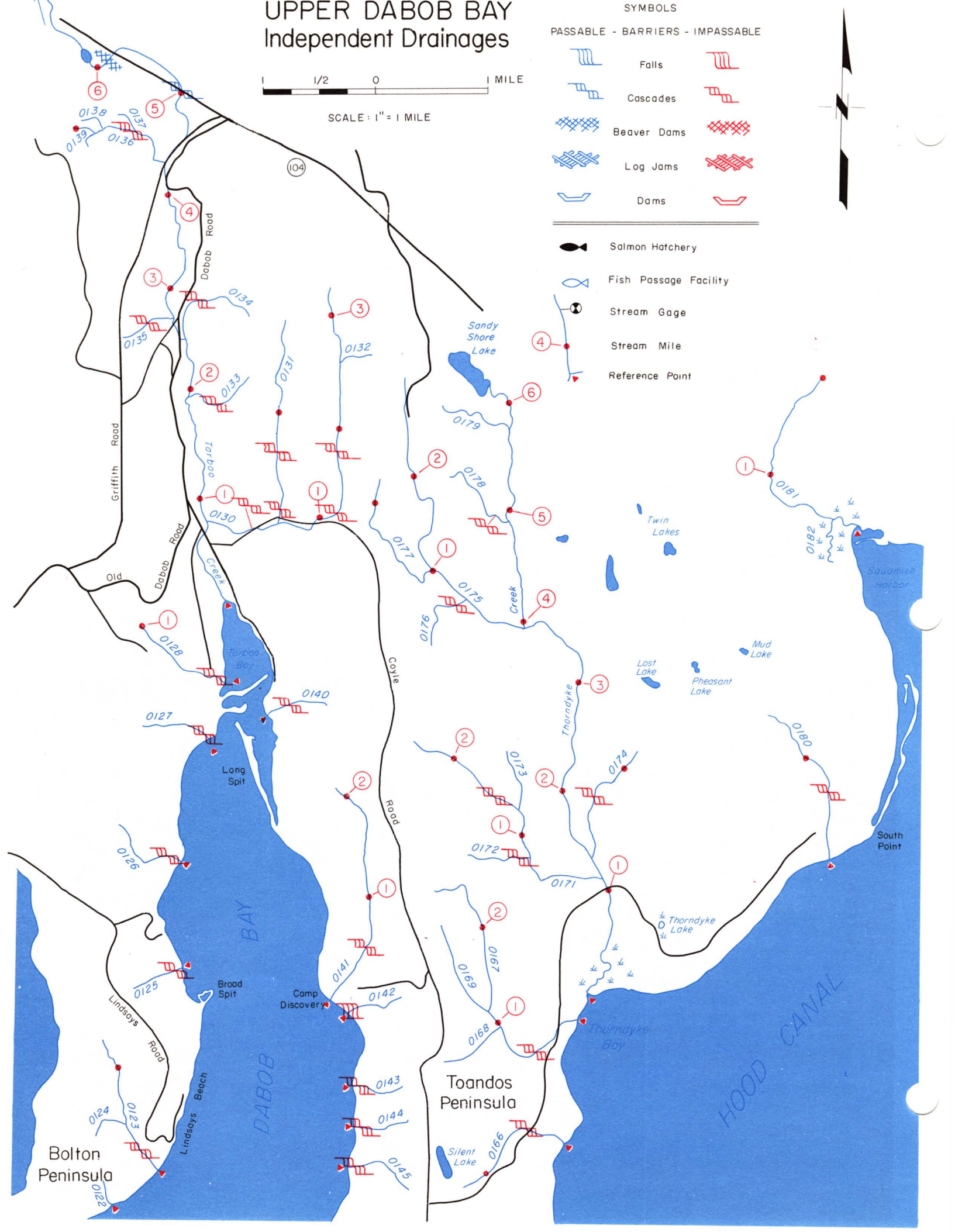
Beneficial Developments

A gravel improvement project was completed in Tarboo during 1974 to enhance the chum spawning area, and return production to its previous level. Occasional hatchery plants of coho have been made into Tarboo and Thorndyke creeks in past years. Stream clearance and maintenance projects have been conducted on Thorndyke Creek.

Habitat Needs

Other gravel projects, pending evaluation of results of the Tarboo project, may be feasible in the future to restore lost spawning habitat and increase production.

PHOTO 17-6. Swampy area at mouth of Shine Creek after opening channel.


UPPER DABOB BAY
Independent Drainages
1 1/2 0 1 MILE
SCALE: 1" = 1 MILE
SYMBOLS
PASSABLE - BARRIERS - IMPASSABLE
Falls
Cascades
Beaver Dams
Log Jams
Dams
Salmon Hatchery
Fish Passage Facility
Stream Gage
Stream Mile
Reference Point
104
Dabob Road
Griffith Road
Old Dabob Road
Coyle Road
Lindsays Road
Lindsays Beach
Tarboo Creek
Tarboo Bay
Sandy Shore Lake
Twin Lakes
Lost Lake
Pheasant Lake
Mud Lake
Thorndyke Creek
Thorndyke Lake
Thorndyke Bay
Squamish Harbor
South Point
Long Spit
Broad Spit
Camp Discovery
Silent Lake
DABOB BAY
HOOD CANAL
Toandos Peninsula
Bolton Peninsula
0122
0123
0124
0125
0126
0127
0128
0130
0131
0132
0133
0134
0135
0136
0137
0138
0139
0140
0141
0142
0143
0144
0145
0166
0167
0168
0169
0171
0172
0173
0174
0175
0176
0177
0178
0179
0180
0181
0182

UPPER DABOB BAY — INDEPENDENT DRAINAGES
Quilcene Basin — WRIA 17

Stream Number	Stream Name	Location Of Mouth	Length	Drainage Area	Salmon Use
0123	Unnamed	Sec32,T27N,R1W	1.3	—	Unknown
0128	Unnamed	Sec9,T27N,R1W	1.0	—	Unknown
0129	Tarboo Creek	Sec4,T27N,R1W	6.8	12.4	Coho, Chum
0130	Unnamed	LB-0.8	3.3	—	Coho, (Chum)
0131	Unnamed	RB-0.7	1.8	—	None
0136	Unnamed	RB-4.3	1.0	—	(Coho)
	Unnamed Lake	Outlet-6.1	—	—	
0141	Unnamed	Sec27,T27N,R1W	2.1	—	Unknown
0147	Unnamed	Sec3,T26N,R1W	1.0	—	Unknown
0156	Unnamed	Sec22,T26N,R1W	1.0	—	None
0159	Unnamed	Sec14,T26N,R1W	1.0	—	None
0161	Unnamed	Sec14,T26N,R1W	1.3	—	None
0163	Unnamed	Sec1,T26N,R1W	1.4	—	Unknown
0166	Unnamed	Sec36,T27N,R1W	1.2	—	Unknown
0167	Unnamed	Sec25,T27N,R1W	2.7	—	Unknown
0170	Thorndyke Creek	Sec25,T27N,R1W	6.3	12.1	Coho, Chum
0171	Unnamed	RB-1.1	2.4	—	Coho, Chum
0174	Unnamed	LB-1.3	1.2	—	(Coho), (Chum)
0175	Unnamed	RB-3.95	2.9	—	Coho, (Chum)
0177	Unnamed	RB-1.0	1.2	—	(Coho)
	Sandy Shore Lake	Outlet-6.3	—	—	
0180	Unnamed	Sec17,T27N,R1E	1.4	—	Unknown
0181	Unnamed (Shine Cr.-local name)	Sec32,T28N,R1E	2.0	—	(Coho), (Chum)

ADMIRALTY INLET DRAINAGES

Admiralty Inlet drainages include independent streams entering from Port Townsend south to Tala Point, the mouth of Hood Canal. This entire drainage area lies in the western end of Jefferson County, and includes 6 streams. Total stream length is 48.2 miles, of which 29.5 miles are in Chimacum Creek, the largest system. Other streams include Ludlow Creek, and four unnamed independent tributaries of Admiralty Inlet.

Stream Descriptions

These drainages include tributaries of Port Ludlow, Mats Mats Bay, Oak Bay and Port Townsend Bay, which drain the foothills and valleys of the northeasternmost portion of the Olympic Peninsula. Land use over most of this area includes second growth timber, rural homesites, scattered farming, and several residential communities. The City of Port Townsend lies at the northern end of this drainage area.

Chimacum Creek, the major stream in this district, flows northerly and enters Port Townsend Bay. It drains an area of lowland hills, and the farmland area of the broad and fertile Chimacum Valley. Rural communities of Chimacum, Hadlock, and Irondale are located in the lower watershed. Stream bank cover is excellent in the uppermost and lowermost portions of this stream; however, the middle section between miles 3 and 9 is heavily developed farmland with little stream-side vegetation. Stream gradient follows this same pattern, being moderate in upper and lower areas with favorable gravel substrate, and shallow gradient with sand and mud substrate in the long middle stream section. Virtually all of mid-watershed section has been dredged and channeled to relieve flooding of the farmland. The East Fork of Chimacum Creek has a similar shallow gradient, with dredged channel, except in its headwaters. Vegetation, where present, is predominantly deciduous.

Ludlow Creek has several miles of stream length; however, access is restricted by a falls at approximately mile 0.5. Suitable gravel substrate and favorable stream bank cover exists below this point as well as in some areas upstream. Much of the upper and middle watershed has shallow gradient and little available stream gravel. There is some farming and rural development in the watershed, and these areas afford poor stream cover and habitat; however, portions of the watershed remain brushy and swampy and provide favorable rearing habitat.

The four unnamed drainages within this section are small with only limited fish habitat.

Salmon Utilization

Streams within this region produce moderate sized runs of coho and chum, with the largest populations in Chimacum Creek. Early run chum spawn in the lower two miles of Chimacum Creek during late September and October. Most of the coho continue upstream and spawn above mile 9. Salmon production in the middle portion (from R.M. 3 to 9), and in the East Fork is very limited. Some salmon production, both coho and chum, comes from Ludlow Creek below its falls. Production in the other unnamed tributaries is minor. Total coho escapement to these streams is normally about 350 fish, and about 650 chum.

Limiting Factors

Size of the unnamed independent tributaries limits their value and natural productivity. Chimacum Creek, on the other hand, has a large water supply but its production is limited by the large areas of natural shallow gradient and the farmland development. Extensive removal of stream bank cover, and contamination of the stream by sediment and dairy farm wastage has caused water quality degradation. Gravel quality in Ludlow Creek is also poor in most areas due to the natural shallow gradient. Log dumping and storage in Port Townsend Bay near the mouth of Chimacum Creek may have an impact on water quality in the estuary.

Beneficial Developments

No facilities have been developed on Chimacum Creek nor other streams in this area to enhance salmon production although coho plants have occasionally been made.

Habitat Needs

Water quality in Chimacum Creek, particularly during low flow periods in summer and fall months, should be improved regarding temperature and farm pollutant controls. Strict adherence to the hydraulics code on any new project should help to maintain natural production at its present level; however, it will do little to relieve the existing limiting factors. The potential for development or improvement of gravel spawning areas in Chimacum Creek is a possibility, in areas where water quality is satisfactory. In Ludlow Creek, the feasibility of installation of passage facilities at the falls should be investigated.

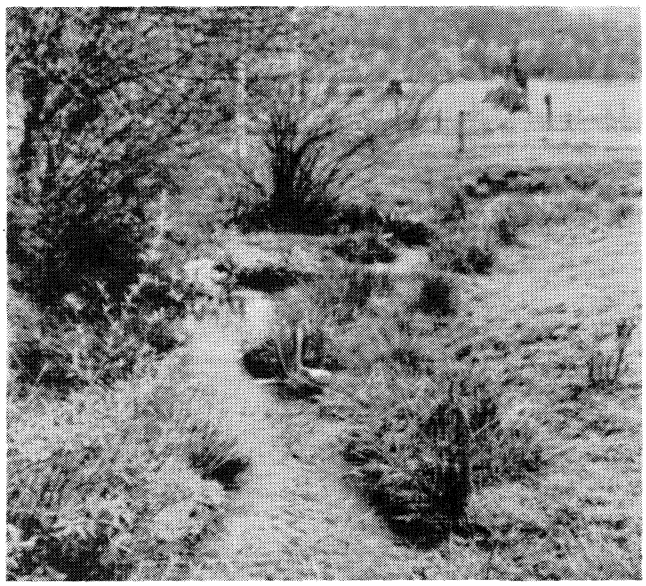
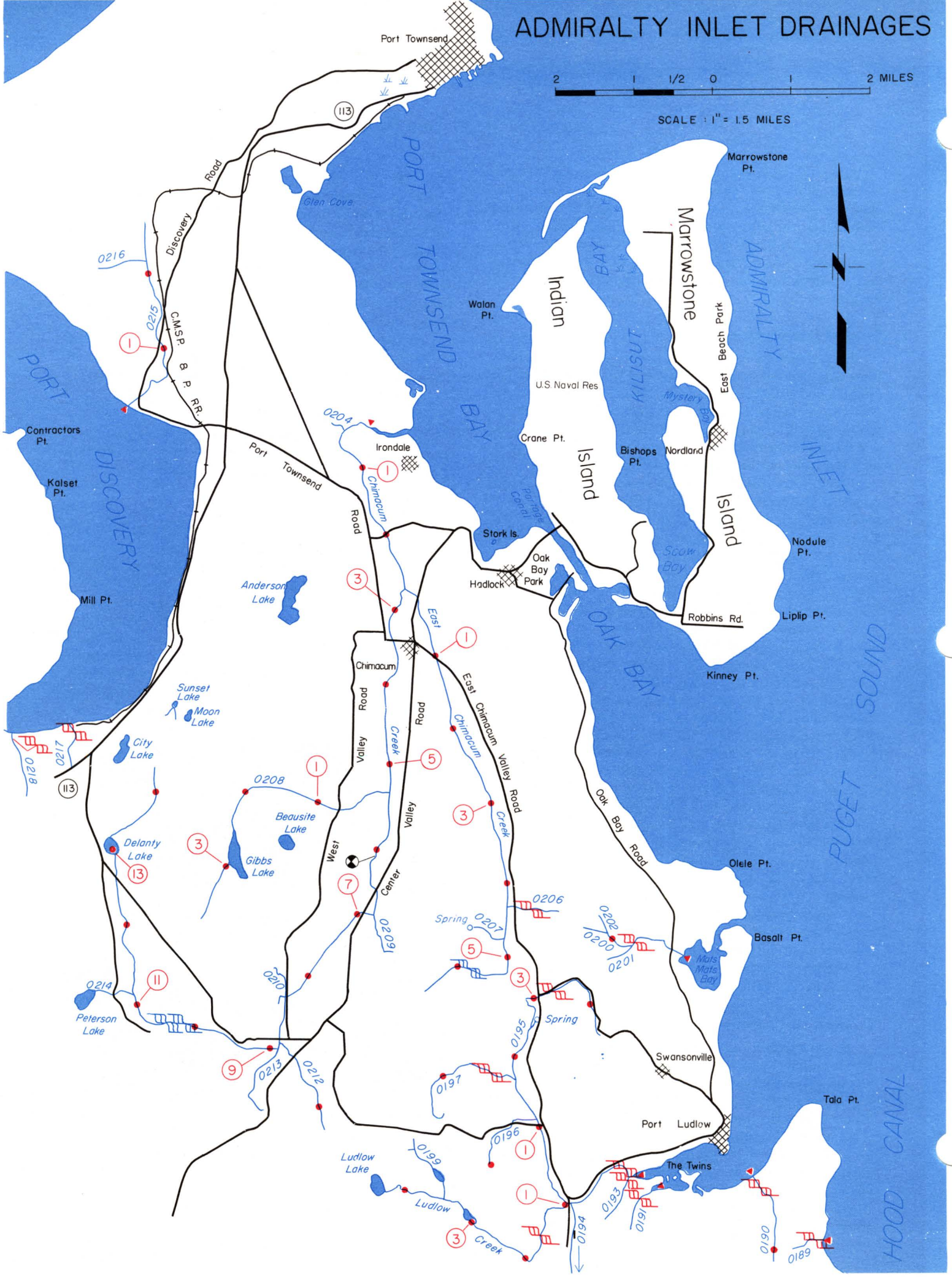


PHOTO 17-7. Upper Chimacum Creek courses through farmlands.


ADMIRALTY INLET DRAINAGES
2 1 1/2 0 1 2 MILES
SCALE : 1" = 1.5 MILES
Port Townsend
Glen Cove
PORT TOWNSEND BAY
Marrowstone Pt.
Marrowstone Island
ADMIRALTY INLET
East Beach Park
Mystery Bay
Walan Pt.
Indian Island
U.S. Naval Res
Crane Pt.
Bishops Pt.
Nordland
Irondale
Port Townsend
Chimacum Road
Stork Is.
Oak Bay Park
Hadlock
Scow Bay
Nodule Pt.
Liplip Pt.
Robbins Rd.
Kinney Pt.
OAK BAY
PUGET SOUND
Olele Pt.
Basalt Pt.
Mats Mats Bay
Swansonville
Tala Pt.
Port Ludlow
The Twins
Ludlow Lake
Ludlow Creek
Discovery Road
C.M.S.P. & P. RR.
PORT DISCOVERY
Contractors Pt.
Kalset Pt.
Mill Pt.
Anderson Lake
Sunset Lake
Moon Lake
City Lake
Beausite Lake
Delanty Lake
Gibbs Lake
Peterson Lake
Chimacum Valley Road
West Valley Road
East Valley Road
Center Valley Road
Chimacum Creek
Spring
Oak Bay Road
HOOD CANAL
0216
0215
0217
0218
0204
0208
0214
0213
0212
0210
0209
0207
0206
0202
0200
0201
0195
0197
0196
0199
0194
0193
0191
0190
0189
113

ADMIRALTY INLET DRAINAGES
Quilcene Basin — WRIA 17

Stream Number	Stream Name	Location Of Mouth	Length	Drainage Area	Salmon Use
0190	Unnamed	Sec16,T28N,R1E	1.2	—	Unknown
0192	Ludlow Creek	Sec17,T28N,R1E	4.45	—	Unknown
0194	Unnamed	RB-0.95	1.2	—	None
0195	Unnamed	LB-1.0	4.35	—	None
0196	Unnamed	RB-1.1	1.0	—	None
0197	Unnamed	RB-1.75	1.7	—	None
	Unnamed Lake	Outlet-3.0	—	—	
	Ludlow Lake	Outlet-4.45			
0200	Unnamed	Sec32,T29N,R1E	1.4	—	(Coho), (Chum)
0203	Chimacum Creek	Sec34,T30N,R1W	14.2	33.6	Coho, Chum
0205	E. Fork Chimacum Cr.	RB-2.7	6.5	—	Coho, Chum
0208	Unnamed	LB-5.3	3.7	—	Coho, (Chum)
	Gibbs Lake	Outlet-2.6	—	—	
0212	Unnamed	RB-8.9	1.25	—	Unknown
	Delanty Lake	Outlet-12.95	—	—	
0215	Unnamed	Sec31,T30N,R1W	2.65	—	Unknown
	(See Quilcene 503)				

PORT DISCOVERY-SEQUIM BAY
Independent Drainages

Port Discovery and Sequim Bay are inlets of eastern Strait of Juan de Fuca on the northern Olympic Peninsula, separated by Miller Peninsula. Most streams in this drainage section enter the inlets. They total 24 streams, several of which are important salmon producers, and contain 133.2 total stream miles.

Stream Description

Nearly two-thirds of the stream mileage is in three major watersheds: Snow Creek, Salmon Creek, and Jimmycomelately Creek. The smaller drainages are Contractors, Eagle, Dean, and Johnson creeks, plus 17 unnamed independent streams. In general, the watersheds are timbered, predominantly coniferous. Upper watersheds of the three major drainages lie in Olympic National Forest, and periodic logging occurs under sustained yield forest management. Rugged terrain, steep slopes, and limited access has restricted development of upper watershed areas. Land directly adjacent to the streams has been mostly undisturbed except for some farm and home development along the lowermost sections of a few streams. All streams within this district are characterized by very low summer flows. The communities of Discovery Bay, Center, and Blyn are located in this drainage area, as is Sequim Bay State Park.

Snow Creek and Salmon Creek are tributaries of Port Discovery that enter the head of the bay one-quarter mile apart. Snow Creek drains the area south of Port Discovery, while Salmon Creek arises to the west. The streams are similar in size and both are important for production of salmon.

Lower Snow Creek flows through farmland with intermittent rural home development. Gradient is moderate, and the stream contains excellent gravel riffles separated by pools, with favorable deciduous bank cover. Andrews Creek enters at mile 3.5, and contains suitable spawning gravel habitat above and below Crocker Lake to a falls at R.M. 2.4. Upstream in Snow Creek the gradient becomes steeper, with coarse material and patchy gravel bottom. A falls blocks access at R.M. 4.9. Gradient is steep above the falls, then moderates in several upper watershed sections. Long-term flow records just above confluence with Andrews Creek, show a 20-year mean of 16.2 cfs, with low flows normally between 2 and 3 cfs.

Salmon Creek is similar to Snow Creek in the lower mile, where it flows through farm areas. Gradient then becomes steeper, and the stream is accessible to near .M. 2.0 where gradient becomes extremely steep. Portions of the upper watershed have moderate gradient and contain spawning-size gravel. Limited U.S.G.S. data at mile 1.35 show low summer flows of about 1 cfs.

Jimmycomelately Creek is accessible to an impassable falls at mile 1.9. Gravel below this block is excellent, and numerous pools are available. Gradient steepens above the falls, then shallows near the headwaters in meadows and high elevation farmland of the Palo Alto Valley. Summer flows during one year of record reached a minimum of 1 cfs.

A few of the other streams within this drainage system are accessible in their lower sections, and provide suitable habitat, although summer flows are low or intermittent.

Salmon Utilization

Both early and late chum stocks return to these streams; however, late runs have been depressed in recent years. Desired escapement for both stocks approximates 3,000 fish; however, present levels are only about one-half this figure, and are mostly early-run fish. The majority of chum utilize the lower reaches of Snow, Salmon, and Jimmycomelately creeks. Coho spawn in accessible areas of most streams within this section that have year-round flows. The largest known runs are in Snow Creek, Andrews Creek, Salmon Creek, Jimmycomelately Creek, and Contractors Creek. Coho spawners returning to all streams within this drainage area total 2,000.

Limiting Factors

Natural low flows and barriers due to falls or steep gradient sections are the primary factors limiting production in this district. Some logging has occurred but impact is not believed to be generally serious, although local areas may have been affected.

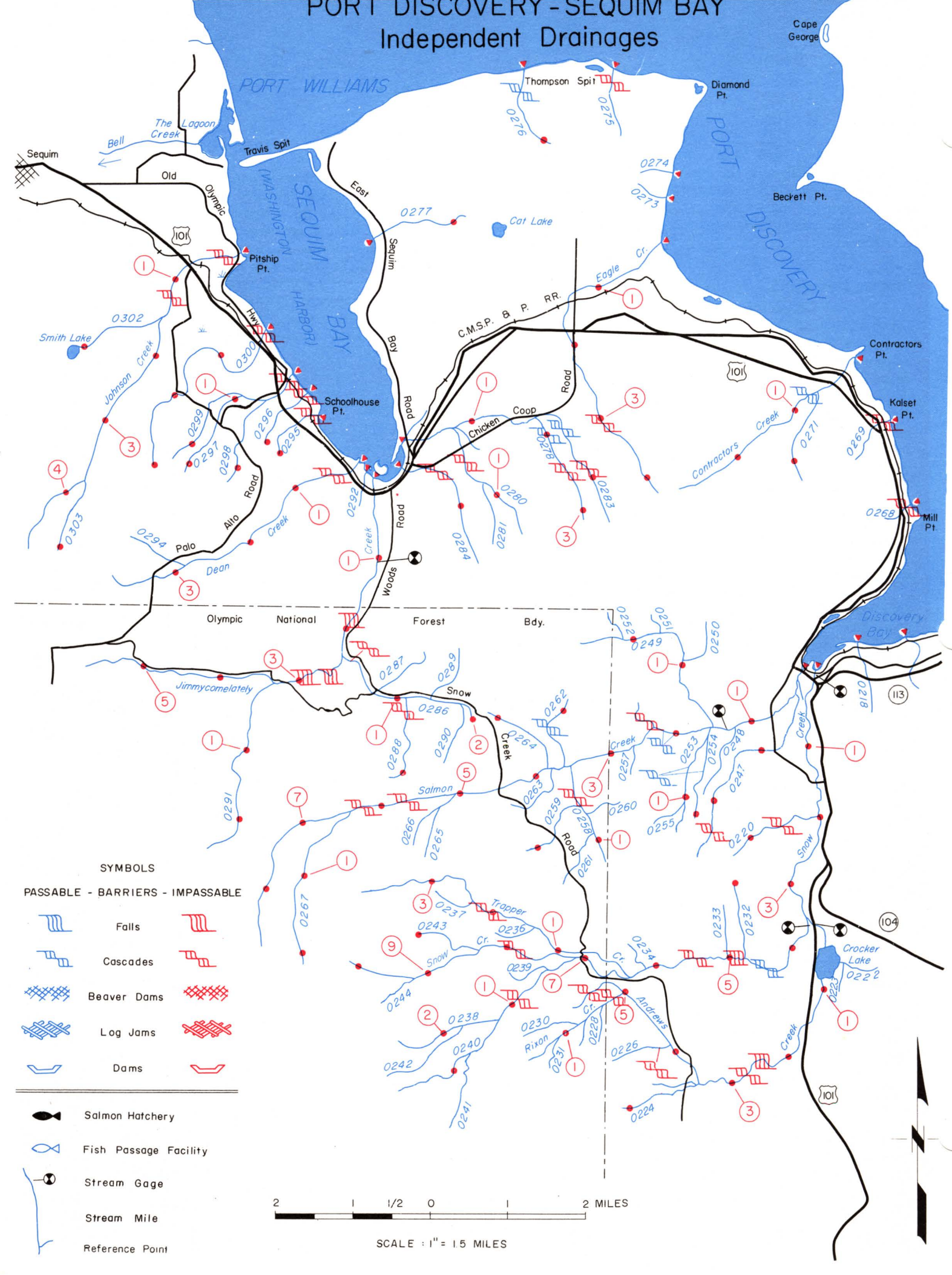
Beneficial Developments

No facilities for enhancement of salmon production have been developed in this area. Plants of coho have been made occasionally in Snow Creek, Salmon Creek, and Jimmycomelately Creek. Chinook plants were tried; however, stream flows during months of return were too low to provide access to the streams.

Habitat Needs

To maintain the existing favorable natural production habitat, a watershed management plan should be developed. Consumptive water diversion requests must be justified. To restore productivity to a previous level, late chums should be introduced to utilize the available production area.

PORT DISCOVERY - SEQUIM BAY
Independent Drainages



SYMBOLS

PASSABLE - BARRIERS - IMPASSABLE

- Falls
- Cascades
- Beaver Dams
- Log Jams
- Dams

- Salmon Hatchery
- Fish Passage Facility
- Stream Gage
- Stream Mile
- Reference Point

2 1 1/2 0 1 2 MILES

SCALE : 1" = 1.5 MILES

PORT DISCOVERY — SEQUIM BAY — INDEPENDENT DRAINAGES
Quilcene Basin — WRIA 17

Stream Number	Stream Name	Location Of Mouth	Length	Drainage Area	Salmon Use
0215	Unnamed [1]	Sec31,T30N,R1W	2.65	—	Unknown
0219	Snow Creek	Sec24,T29N,R2W	10.1	—	Coho, Chum
0220	Unnamed	LB-2.0	1.3	—	(Coho)
0221	Andrews Creek	RB-3.5	5.95	—	Coho, (Chum)
	Crocker Lake	Outlet-0.5	—	—	
0224	Unnamed	RB-3.45	1.05	—	None
0227	Rixon Creek	RB-5.0	1.6	—	None
0232	Unnamed	LB-4.75	1.0	—	Unknown
0235	Trapper Creek	LB-6.4	3.9	—	None
0238	Unnamed	LB-7.1	2.6	—	None
0240	Unnamed	RB-1.2	1.8	—	None
0242	Unnamed	RB-1.65	1.2	—	None
0243	Unnamed	LB-8.3	1.05	—	None
0245	Salmon Creek	Sec23,T29N,R2W	8.7	18.8	Coho, Chum
0247	Unnamed	RB-0.3	2.6	—	Coho, (Chum)
0249	Unnamed	LB-1.5	2.6	—	(Coho), (Chum)
0253	Unnamed	RB-1.55	1.45	—	Unknown
0254	Unnamed	RB-0.15	1.0	—	Unknown
0258	Unnamed	RB-3.45	1.35	—	Unknown
0259	Unnamed	LB-0.5	1.15	—	None
0262	Unnamed	LB-3.6	1.2	—	Unknown
0264	Unnamed	LB-3.8	1.1	—	Unknown
0267	Unnamed	RB-6.4	2.1	—	None
0270	Contractors Creek	Sec36,T30N,R2W	2.85	—	Coho, (Chum)
0271	Unnamed	RB-0.8	1.25	—	Unknown
0272	Eagle Creek	Sec27,T30N,R2W	4.3	5.41	(Coho), (Chum)
0276	Unnamed	Sec17,T30N,R2W	1.1	—	Unknown
0277	Unnamed	Sec25,T30N,R3W	1.25	—	Unknown
0278	Unnamed	Sec1,T30N,R2W	3.1	—	(Coho), (Chum)
0280	Unnamed	LB-0.8	1.6	—	(Coho)
0283	Unnamed	RB-1.85	1.5	—	Unknown
0284	Unnamed	Sec12,T29N,R3W	1.8	—	(Coho), (Chum)
0285	Jimmycomelately Cr.	Sec12,T29N,R3W	5.6	—	Coho, Chum
0286	E.F. Jimmycomelately Cr.	RB-2.3	2.0	—	None
0288	Unnamed	LB-1.1	1.1	—	None
0291	Unnamed	RB-3.3	2.6	—	None
0293	Dean Creek	Sec12,T29N,R3W	3.8	—	(Coho), (Chum)

[1] *For map see Quilcene 402.*

PORT DISCOVERY — SEQUIM BAY — INDEPENDENT DRAINAGES
Quilcene Basin — WRIA 17

Stream Number	Stream Name	Location Of Mouth	Length	Drainage Area	Salmon Use
0295	Unnamed	Sec2,T29N,R3W	1.0	—	None
0296	Unnamed	Sec2,T29N,R3W	1.0	—	None
0297	Unnamed	Sec2,T29N,R3W	2.1	—	Unknown
0298	Unnamed	RB-0.5	1.2	—	None
0299	Unnamed	LB-0.95	1.25	—	None
0300	Unnamed	Sec35,T30N,R3W	3.0	—	Unknown
0301	Johnson Creek	Sec27,T30N,R3W	4.9	—	Unknown
0302	Unnamed	LB-1.5	1.0	—	None
0303	Unnamed	RB-2.8	1.0	—	None