

THE FISH AND WILDLIFE RESOURCES OF THE  
HOOD BASIN, OREGON,  
AND THEIR WATER USE REQUIREMENTS

A Report to the  
STATE WATER RESOURCES BOARD

FEDERAL AID TO FISH RESTORATION  
Progress Report

Fisheries Stream Flow Requirements  
Project F-69-R-1, Job Number 1

by the  
OREGON STATE GAME COMMISSION  
Basin Investigations Section

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## INTRODUCTION

The purpose of this report is to apprise the State Water Resources Board of the status and importance of fish and wildlife resources of the Hood Basin and to define water problems influencing these resources. This will enable the Board to give consideration to these needs along with other beneficial water uses when developing a comprehensive program for the area.

Field studies for this report were conducted by the Basin Investigations Section, Oregon State Game Commission, from August through November, 1963. As in three prior basin reports, recommended minimum flows for game fish maintenance are included and considered most important. It is regrettable that additional time was not available to permit formulation of more complete flow recommendations.

## FISH RESOURCES OF THE HOOD BASIN

### Species Occurrence and Distribution

Columbia River The occurrence of migratory fish and their distribution in the Columbia River within the Hood Basin is influenced by Bonneville and The Dalles Dams. The two impoundments provide favorable habitat for certain rough species and have totally eliminated spawning areas formerly utilized by steelhead and salmon.

Many game and nongame fish are counted over the ladders of the two dams. Chinook, silver and blueback salmon, steelhead trout and shad are the most numerous anadromous game species recorded. Small runs of chum and humpback salmon ascend Bonneville Dam, but few migrate above The Dalles Dam. Numbers of chinook salmon, steelhead trout and shad counted over the two structures since counts were initiated are shown in Table 1. Of the anadromous species, these three presently comprise the largest runs and furnish the most sport angling. Carp, chubs, lampreys, shiners, suckers and squawfish are the most common rough fish counted.

Substantial populations of resident warm-water game fish are present in the Columbia and its sloughs, particularly between Cascade Locks and the mouth of the

Deschutes River. Species most frequently observed in angler catches are black crappie, white crappie, bluegill and pumpkinseed sunfish, bullhead catfish, largemouth bass, sturgeon and yellow perch. A few channel catfish have been caught in recent years.

TABLE 1

Upstream Fish Counts at Bonneville and The Dalles Dams<sup>1/</sup>

Year	<u>Steelhead</u>		<u>Chinook</u>		<u>Shad</u>	
	Bonneville	The Dalles	Bonneville	The Dalles	Bonneville	The Dalles
1938	107,003		271,799		5,273	
1939	122,032		286,189		4,803	
1940	185,174		391,587		22,230	
1941	118,089		461,443		18,657	
1942	151,800		401,942		12,859	
1943	92,133		313,123		2,848	
1944	100,518		240,746		17,103	
1945	120,133		297,478		94,526	
1946	142,807		446,052		20,383	
1947	135,444		480,377		26,041	
1948	139,062		419,555		8,422	
1949	119,285		277,697		22,579	
1950	114,087		357,375		7,816	
1951	140,689		331,788		8,353	
1952	260,990		420,879		3,131	
1953	223,914		332,479		16,430	
1954	176,260		320,947		5,029	
1955	198,411		359,853		5,808	
1956	131,116		300,917		8,085	
1957	139,183	129,361	403,286	312,678	13,159	5,106
1958	131,437	121,420	426,419	301,960	10,201	4,530
1959	129,026	156,090	345,028	207,461	6,720	4,288
1960	113,676	111,189	256,049	196,962	93,368	81,053
1961	139,719	134,572	281,980	201,335	265,697	113,229
1962	164,025	163,301	286,625	187,132	435,988	216,464
1963 <sup>2/</sup>	126,072	105,876	272,586	176,916	389,519	160,954

<sup>1/</sup> Source: U.S. Army Corps of Engineers.

<sup>2/</sup> 1963 counts are to October 1.

Hood River System Steelhead is the predominant anadromous fish entering Hood River (Table 17). Runs have increased in recent years, although they are lower than those which once existed. Recent increases have resulted primarily from the screening of water diversions, laddering of obstructions and accelerated stocking and management programs.

Both summer and winter steelhead occur in fairly equal numbers. More winter run fish enter the East Fork Hood River than do the summer race. Most summer steelhead utilize the West Fork Hood River, a stream which maintains much of the system's best spawning potential, resting pools and summer flows. Since 1958 much of the West Fork drainage has been closed to all angling in an effort to protect and build up this valuable race. Known steelhead distribution in the basin is illustrated in Figure 1.





Silver salmon rank next to steelhead in numbers entering the river. A majority spawn either in Hood River or the East Fork drainage. A few enter Neal Creek and the West Fork. Small numbers of spring chinook salmon enter Hood River and the West Fork. A run of fall chinook, generally somewhat larger than the spring run, spawns in the main stem, mostly below Powerdale Dam. A small run of sockeye salmon enters West Fork during the summer and fall.

Resident rainbow and cutthroat trout populations are moderate throughout most streams. Highest densities are normally found in headwater areas. A light to moderate run of sea-run cutthroat occurs in Hood River, the fish entering several of the larger tributaries. Small populations of whitefish and brown, Dolly Varden and eastern brook trout exist in some streams (Table 2). Suckers and squawfish are the predominant rough fish in the system and are concentrated primarily in lower Hood River.

Other Columbia River Tributaries Of the remaining basin streams, Eagle, Herman and Fifteenmile Creeks contain the major anadromous fish runs. The former two possess mainly chinook salmon and Fifteenmile Creek accommodates principally steelhead. Lesser numbers of anadromous fish also enter Chenoweth, Lindsey, Mill and Mosier Creeks.

Resident cutthroat and rainbow trout are usually common in the upper portions of these streams. Rough fish occur in lower sections of most of these, but are numerous only in the lower ends of Mill Creek and the Fifteenmile Creek system.

# LEGEND

-  Known steelhead distribution
-  Suspected steelhead distribution
-  Diversion
-  Active screen installation

## SCREEN NAMES

1. Powerdale
2. Farmers Irrigation Dist.
3. Upper Neal Cr.
4. Dee Flat
5. East Fk. Irrigation Dist.
6. Mt. Hood Irrigation Dist.
7. Evans Cr. #2
8. Evans Cr. #3
9. Evans Cr. #1
10. Ingel's #1
11. Sigman's
12. Brown's Lower
13. Brown's Upper
14. Galligan
15. Lindhorst
16. Abnet

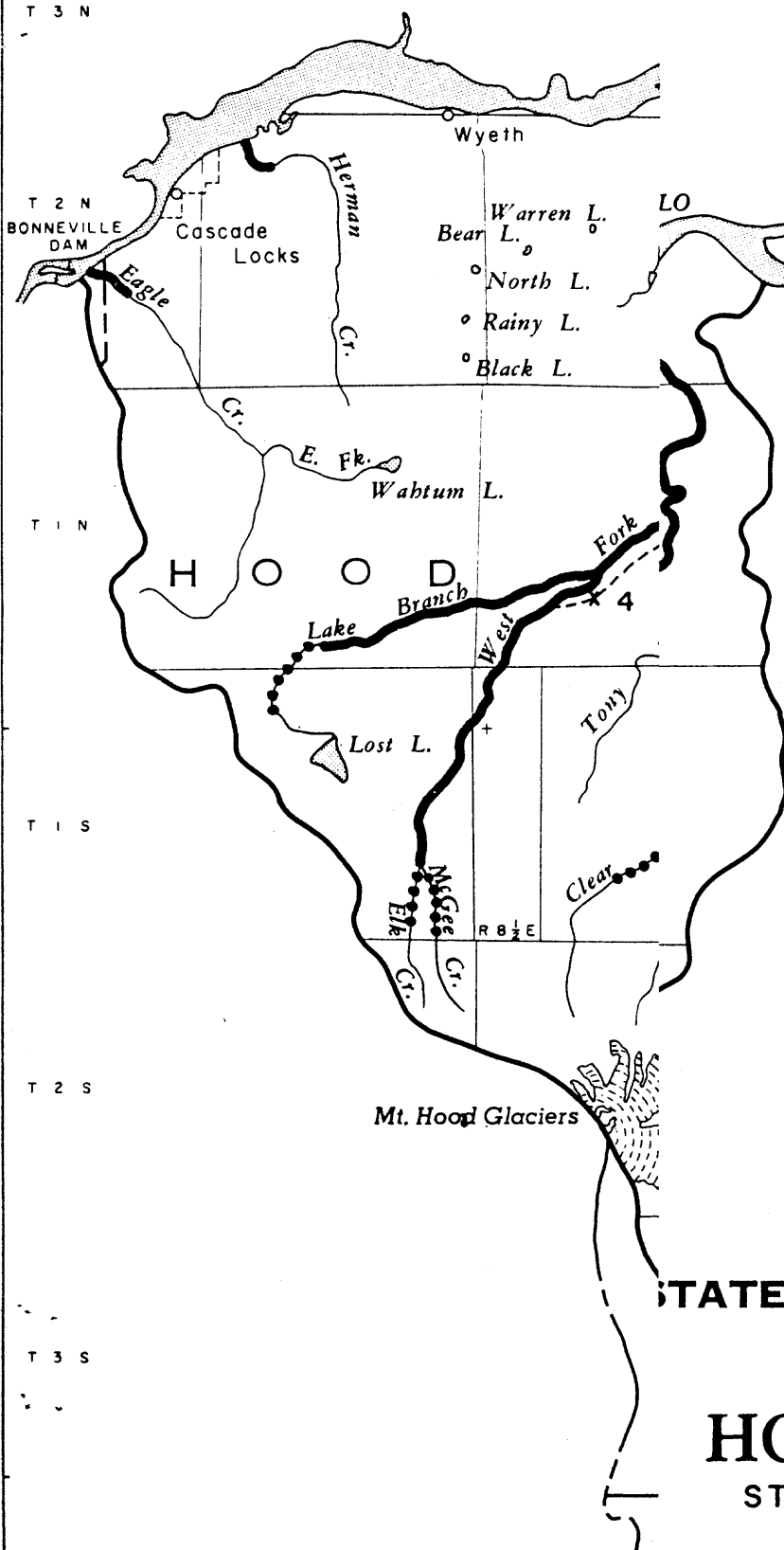


FIGURE 1.

STATE WATER RESOURCES  
BOARD

## HOOD BASIN

STEELHEAD DISTRIBUTION  
and  
PROTECTIVE FISH SCREENS  
MAP NO. 4.4

Limited numbers of certain warm-water game species occasionally exist here as well. Table 2 lists known fish species present and their general distribution in streams of the basin, excluding the Columbia River. Data concerning fish resources and factors affecting them in individual streams of the basin are included in the Appendix.

#### Angler Effort and Catch

The heaviest angling pressure exerted upon any of the anadromous species is directed toward steelhead. This fishery is concentrated principally in the Hood River main stem and in the Columbia River at Cascade Locks. Figure 2 illustrates the total catch of steelhead in Hood River for the years 1954 through 1961 as calculated from a sample of steelhead punch cards. Table 3 depicts rates of steelhead angler effort and success in the same river section since 1953 as determined from angler interviews.

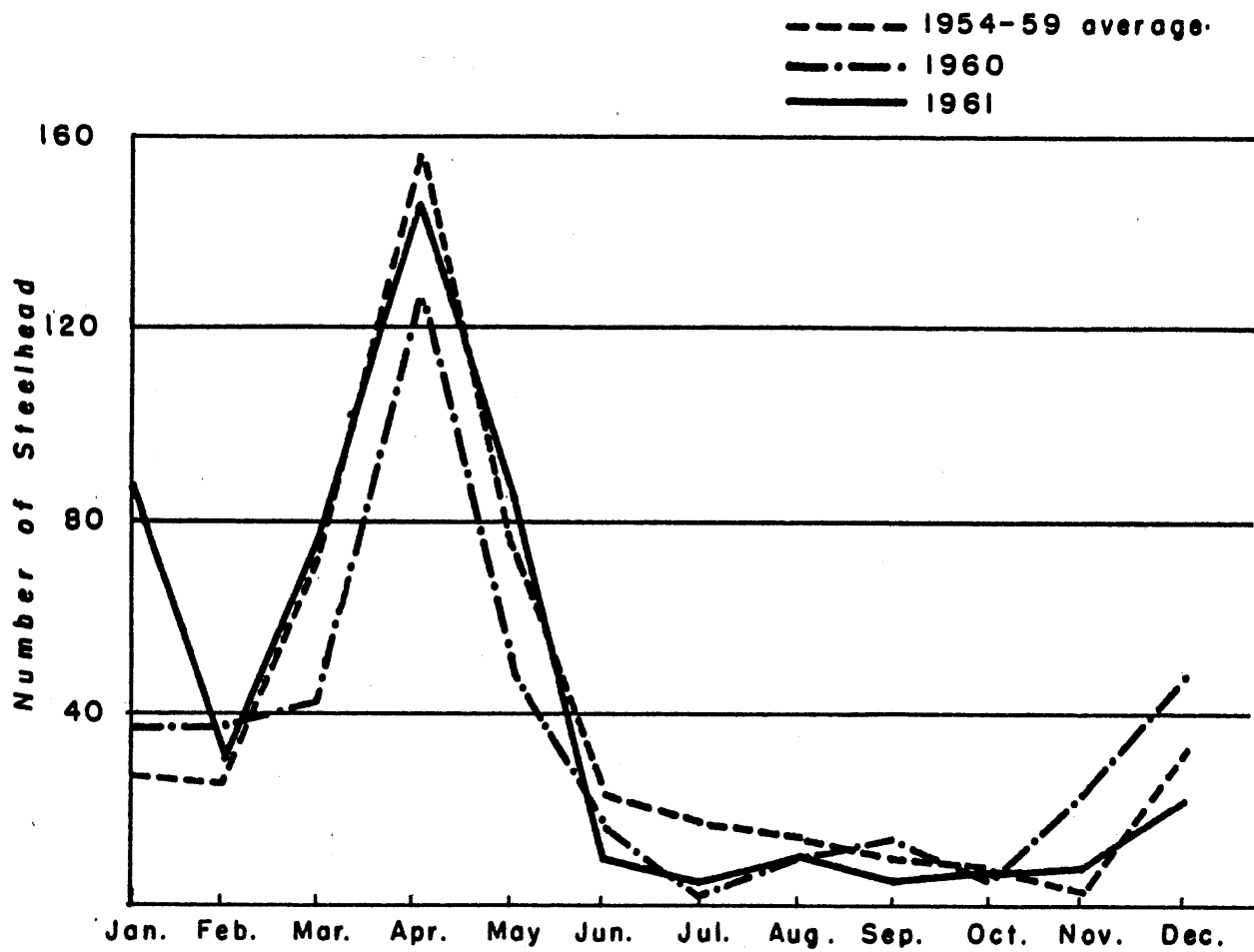
Catches of chinook and silver salmon in Hood River are incidental to the steelhead fishery. Some chinook angling occurs at Cascade Locks. Angling there for both chinook and steelhead takes place throughout most of the year, being heaviest in July, August and September.

Shad, an anadromous fish introduced to the west coast in the late nineteenth century, has made tremendous population gains in the lower Columbia River in the last four years (Table 1). Shad fishing within the Hood Basin does not yet enjoy the popularity which has been experienced in some other areas. Nearly all angler effort is concentrated on Bradford Island below Bonneville Dam. This fishery is expected to expand, both in area and pressure, if the excellent runs continue.

Light to moderate sturgeon fishing takes place mainly from the bank in the Columbia River between Cascade Locks and The Dalles. Angling exists at all times of the year, but is heaviest from May to July.

Although no commercial fishing for game species is allowed in the Columbia River above a point five miles below Bonneville Dam, some Indian netting of shad and other anadromous species occurs above this point. The legality of this fishing is currently

FIGURE 2



STEELHEAD CATCH IN HOOD RIVER,

1954 through 1961



TABLE 2

Known Fish Species and Distribution in Hood River Basin Streams <sup>1/</sup>

Species	Abb. <sup>2/</sup>	General Distribution
Brown trout	Br	A few in lower Hood R., West Fk. Hood R., and Lake Branch Cr.
Cottids	Cot	Throughout Hood R. system.
Fall chinook salmon	ChF	Hood R., mainly below Powerdale Dam. Also in Lindsey, Herman and Eagle Creeks.
Spring chinook salmon	ChS	Remnant run in West Fk. Hood R. and lower Hood R.
Cutthroat trout	Ct	Natives light to moderate in most Hood R. system streams. Light to moderate populations of sea-runs in most of these same streams.
Dace	D	Fifteenmile Cr.; suspected in other streams.
Dolly Varden trout	DV	A few in lower Hood R.
Eastern brook trout	EB	A few in upper Lake Branch Cr. and Eagle Cr. Also located in streams below lakes with eastern brook.
Kokanee	K	Lost Lake. A few may enter Lake Branch and return as sockeye salmon.
Pacific lamprey	L	Throughout Hood R. system.
Rainbow trout	Rb	Throughout Hood R. Basin. Natives most common in headwater areas.
Silver salmon	Sl	Neal Cr., Hood R., East Fk. Hood R., a very few in West Fk. Hood R. Also in Columbia R. tributaries except Mill and Fifteenmile Creeks.
Sockeye salmon	SS	Small run in West Fk. Hood R.
Squawfish	Sq	Mainly in lower Hood R. and lower ends of Columbia R. tributaries.
Steelhead	St	(See Figure 1.)
Sucker	Su	Mill Cr., Fifteenmile Cr. and lower Hood R.
Warm-water game fish <sup>3/</sup>		Columbia R. sloughs and probably in the lower ends of Mill and Fifteenmile Creeks.
Whitefish	Wf	Hood R. and West Fk. Hood R.

<sup>1/</sup> Excludes Columbia River.

<sup>2/</sup> Abbreviations used in this report.

<sup>3/</sup> BC - black crappie, B - bullhead catfish, WC - white crappie, BG - bluegill sunfish, LB - largemouth bass, YP - yellow perch, C - crappie.

TABLE 3

## Steelhead Creel Census, Hood River, 1953-1963

Year	Anglers Checked	Fish Caught	Hours Fished	Fish per Angler	Hours per Fish
1953	85	22	176	0.25	8.0
1954	375	42	560	0.11	13.3
1955	353	38	488	0.10	12.8
1956	204	17	256	0.08	15.0
1957	165	41	669	0.24	16.3
1958	120	22	123	0.18	5.5
1959	367	45	666	0.12	14.8
1960	187	10	379	0.05	37.9
1961	169	27	334	0.16	12.4
1962	705	73	1,352	0.10	18.5
1963	783	49	1,095	0.06	22.4

in question.

Trout angling is popular in the numerous basin lakes and streams. The season extends from late April to the end of October except in a few high elevation lakes which do not open until late May. Fishing for native species is directed upon headwater areas or larger streams maintaining good summer flows. A greater amount of pressure is concentrated on lakes for both native and planted fish, and on the planted section of the East Fork Hood River. This stream, from its mouth upstream to river mile 23.5, has been stocked since 1957 as a "key stream". It has received frequent, heavy plants of legal-sized rainbow during the season to realize the highest possible catch by anglers. Table 4 indicates the success of this program by the relatively high "fish per hour" catch figures. The decrease in 1962 was attributed partially to muddy water and stream disturbance caused by channel changes as a result of Highway 35 construction.

TABLE 4

East Fork Hood River Trout Catch, 1954-1963

Year	Fish Caught	Anglers Checked	Hours Fished	Fish per Hour	Fish per Angler
1954	238	126	317	0.89	1.88
1955	146	109	233	0.63	1.33
1956	112	116	280	0.40	1.00
1957	706	276	669	1.05	2.55
1958	523	185	558	0.94	2.82
1959	1,293	460	1,254	1.03	2.81
1960	801	375	941	0.85	2.14
1961	1,068	437	1,172	0.91	2.44
1962	458	289	757	0.60	1.58
1963	571	285	634	0.90	2.00

Table 5 presents 1963 angler catch data in the more popular trout lakes and streams. Table 6 gives comparative catch figures in these waters from 1960 through 1963. None of the tables concerning angling success (Tables 3-6) indicate total angling pressure or catch, but do indicate trends and show comparisons. The basin's trout lakes, their locations and the fish species present which furnish angling are shown in Table 7.

Eastern brook are the most common trout found in the higher lakes. Kokanee provide a diversified fishery in Lost Lake.

Oregon State Game Commission trout releases for the past four years are shown in Table 8. Stocking has been done annually for many years. Lakes inaccessible by road are planted with an airplane. Nearly all trout stocked in the basin are raised at the Game Commission's Hood River Hatchery near Dee.

Angling for warm-water game species is popular in the Columbia River sloughs between Cascade Locks and the Deschutes River throughout the year, with most pressure

TABLE 5

## Lake and Stream Creel Census, Hood Basin, 1963

Lake or Stream	Species	Size in Inches				Total Fish	Total Anglers	Hours Fished	Fish per Angler	Hours per Fish	Fish per Hour
		6-8"	8-10"	10-12"	12-14"	14" & over					
Fifteenmile Cr.	Rb	1	7	3		11	7	11	1.6	1.00	1.00
Hood River	Rb	173	66	5	1	245					
	Ct					2					
	DV				1	1					
						<u>249</u>	222	335	1.1	1.35	0.74
Hood River, E. Fk. Rb	Rb	26	527	17		570					
	Ct	1				<u>571</u>	285	634	2.0	1.10	0.90
Mosier Cr.	Rb	1	2	1		4					
	Ct	3				<u>3</u>					
						<u>7</u>	1	3	7.0	0.43	2.33
Neal Cr.	Rb	21	9			30					
	Ct	2	5			<u>7</u>					
						<u>37</u>	12	42	3.1	1.10	0.88
Kingsley Res.	Rb	34	435	19		488					
	EB	34	5	1		<u>40</u>					
						<u>528</u>	179	735	2.9	1.40	0.72
Lost Lake	Rb	200	591	44		835					
	EB	1	1		1	4					
	Br	4	3			8					
	K	10	1			<u>11</u>					
						<u>858</u>	372	1,287	2.3	1.50	0.67
McClure Lake	Rb	10	16			26	16	58	1.6	2.20	0.45
Rainy Lake	EB	4				4	4	3	1.0	0.80	1.33
Wahtum Lake	Rb		12			12					
	EB	39	8			<u>47</u>	14	50	4.2	0.80	1.18
						<u>59</u>					
Warren Lake	EB	5	1			6	7	17	0.9	2.80	0.35

TABLE 6

## Trout Creel Census, Hood Basin, 1960-1963

Streams	1960			1961			1962			1963		
	Anglers Checked	Fish per Hr.		Anglers Checked	Fish per Hr.		Anglers Checked	Fish per Hr.		Anglers Checked	Fish per Hr.	
Fifteenmile Cr.	99	169	0.64	42	96	1.19	11	15	0.42	7	11	1.00
Hood R.							341	341	0.49	222	249	0.74
Hood R., East Fk.	375	801	0.85	437	1,068	0.91	289	458	0.60	285	571	0.90
Neal Cr.	53	118	1.48	14	41	1.64	-	-	-	12	37	0.88
<b>Lakes</b>												
Black L.	13	75	0.99									
Kingsley Res.	206	473	0.58	62	245	1.03	51	192	0.91	179	528	0.72
Lost L.	215	477	0.52	477	1,269	0.79	150	229	0.48	372	858	0.67
McClure L. <sup>1/</sup>	126	111	0.44	62	181	0.92	-	-	-	16	26	0.45
North L.	8	27	0.93	-	-	-	-	-	-	-	-	-
Rainy L.	-	-	-	-	-	-	-	-	-	4	4	1.33
Wahtum L.	-	-	-	-	-	-	-	-	-	14	59	1.18
Warren L.	-	-	-	15	31	0.94	-	-	-	7	6	0.35

<sup>1/</sup> Of the 318 fish checked from McClure Lake, 1960-1963, 11 were warm-water game species and one was a juvenile silver salmon.

TABLE 7

## Hood Basin Lake and Impoundment Data

Water	Acres	Location	Game Fish Present
Bear Lake	3.5	Upper Lindsey Cr. drainage	EB
Black Lake	4.0	1.0 mile south of Rainy Lake	EB
Hicks Lake	2.0	1.25 miles northwest of Wahtum Lake	EB
Kingsley Reservoir (Upper Greenpoint)	40.0	Upper Ditch Cr. drainage	Rb, EB
Lost Lake	240.0	Upper end of Lake Branch	Rb, EB, Br, K
McClure Lake	50.0	A Columbia R. slough 8 miles east of Hood River on Hwy. 30	Rb, BC, B, Sil, BG, YP, WC
Mud Lake	1.5	Upper Herman Cr. drainage	EB
North Lake	6.0	Upper Lindsey Cr. drainage	EB
Ottertail L. (Otter L.)	1.5	Upper Green Point Cr. drainage	EB
Rainy Lake	9.6	1.25 miles south of North Lake	EB
Scout Lake	3.0	Upper West Fk. Hood R. drainage 1.0 mile south of Wahtum Lake	EB
Wahtum Lake	57.0	Upper end of Eagle Cr.	Rb, EB
Warren Lake	4.5	Upper Warren Creek drainage	EB

TABLE 8

Oregon State Game Commission Trout Releases  
Hood Basin, 1960-1963

Water	Species	Size	1960	1961	1962	1963
			No.	No.	No.	No.
Eagle Cr.	Rb	Legals	1,001	2,000	2,000	2,004
Fifteenmile Cr.	Rb	Legals	3,075	2,656	3,208	2,433
Hood River	Rb	Legals	-	-	1,732	-
Hood River, E. Fk.	Rb	Legals	41,167	42,900	37,527	40,018
Mosier Cr.	Rb	Legals	2,022	1,420	2,002	2,124
Neal Cr.	Rb	Legals	3,005	2,555	3,073	3,001
Odell Cr.	Rb	Legals	1,076	401	1,234	998
Bear Lake	EB	2-4"	964	960	1,052	945
Black Lake	EB	2-4"	1,929	1,920	2,164	1,890
Hicks Lake	EB	2-4"	964	960	1,052	1,890
Kingsley Reservoir	Rb	Legals	6,000	5,981	5,502	8,004
Lost Lake	EB	2-4"	108,080	32,416	25,200	-
	K	2-4"	-	74,430	77,900	24,725
	Rb	Legals & 4-6"	30,126	12,642	8,916	13,630
McClure Lake	Rb	Legals	7,616	7,610	5,001	5,500
Mud Lake (Fish L.)	Rb	2-4"	-	720	-	-
North Lake	EB	2-4"	1,929	960	2,164	1,890
Ottertail Lake (Otter L.)	EB	2-4"	-	1,920	2,164	1,890
Rainy Lake	EB	2-4"	1,929	960	2,164	945
Scout Lake	EB	2-4"	1,929	1,920	2,163	945
Wahnum Lake	EB	2-4"	9,646	9,600	9,994	7,875
Warren Lake	EB	2-4"	1,929	1,920	2,164	1,890

occurring in summer months. Species caught were discussed earlier in this report.

Bow and arrow fishing for carp, a nongame fish, is also popular in these slough areas.

### Factors Influencing Resource

Dams and Barriers One natural and two man-made barriers in Hood River and its two major forks influence anadromous fish production by their affect on upstream passage of adults. These are Powerdale Dam, Dee Dam and Punchbowl Falls.

Powerdale Dam (Figure 3) is located in Hood River at river mile 4.5. Constructed of concrete, it is approximately 12 feet in height with a sloping apron and a concrete fish ladder on each bank. The dam, owned and operated by Pacific Power and Light Company, diverts a large portion of the river flow to a powerhouse 3.2 miles downstream.

While both ladders pass fish, they are not entirely adequate, being steep with small pools (Figures 5 and 6). Fish are often falsely attracted to flows passing over the dam or through a trash chute near the west ladder.

The most critical fish passage problem in the basin exists at Dee Dam. This structure is situated in the East Fork at Dee, approximately one and a half miles above the confluence with West Fork. Owned by the Oregon Lumber Company, Dee Dam is a sheer concrete structure about 40 feet high. Formerly it was used to create a pool for log impoundment and power generation. Its present use is mainly to impound water for pumping to a hardboard mill. The single wooden ladder located on the west bank is too small and steep for proper fish passage (Figure 4). Observations of silver salmon and steelhead at the dam in recent years have revealed that most are falsely attracted to flows other than from the ladder entrance. In addition, the ladder leaks severely and is frequently inoperative because the lumber weirs are washed away.

Punchbowl Falls (Figure 7) is located on the West Fork one-quarter mile above the mouth. Before it was laddered by the Fish Commission of Oregon in 1957, this natural barrier seriously impeded upstream movement of steelhead and prevented most salmon passage. Passage is now considered good.

High natural falls in the lower portions of Eagle, Herman, Lindsey and Mosier Creeks form the upper limits of anadromous fish use. Provision of passage facilities is not feasible. Two natural falls in lower Fifteenmile Creek create passage problems. The first falls, about one-half mile above the mouth, is approximately 15 feet high. Its rock and concrete fishway is in disrepair and needs replacing. The second falls is located one-half mile above the first. A channel has been blasted from the rock, but this provides only partially adequate passage. Several low irrigation dams exist in streams of the Fifteenmile Creek drainage, most of which do not have passage facilities.

In the East, Middle and West Forks of Hood River, temporary weirs are constructed

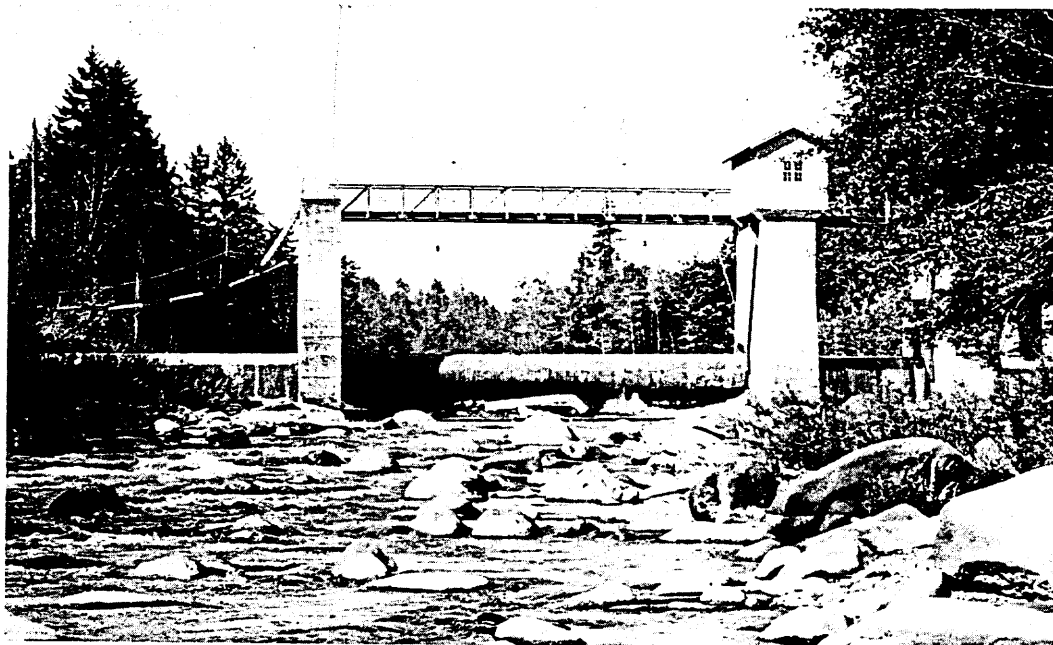


Figure 3. Powerdale Dam, with flow of approximately 160 c.f.s. in foreground. June 15, 1963.

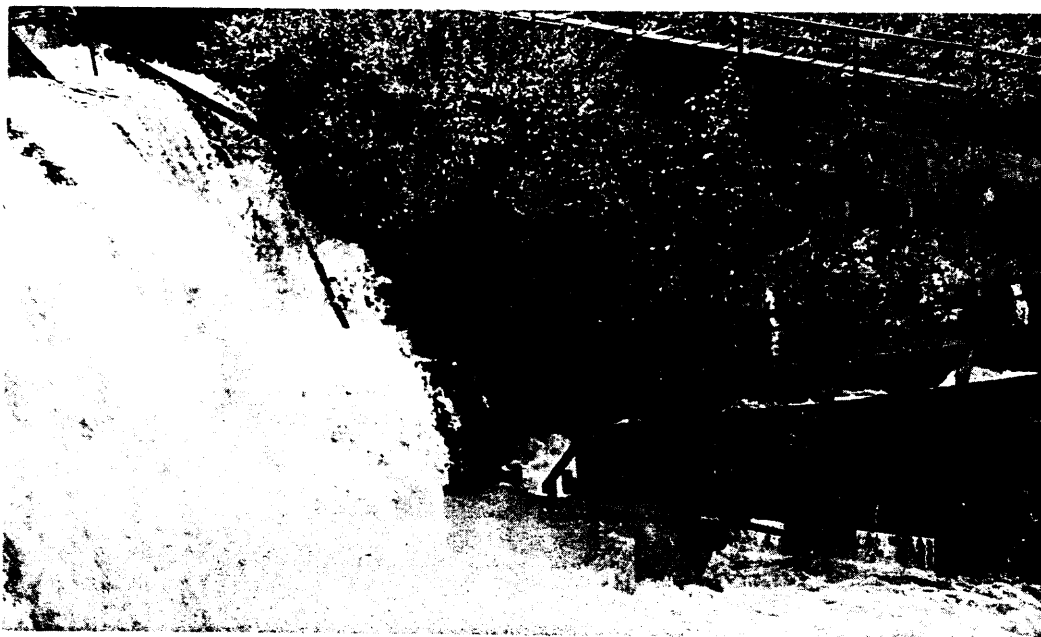


Figure 4. Dee Dam, showing inadequate wooden fish ladder. November 14, 1963.



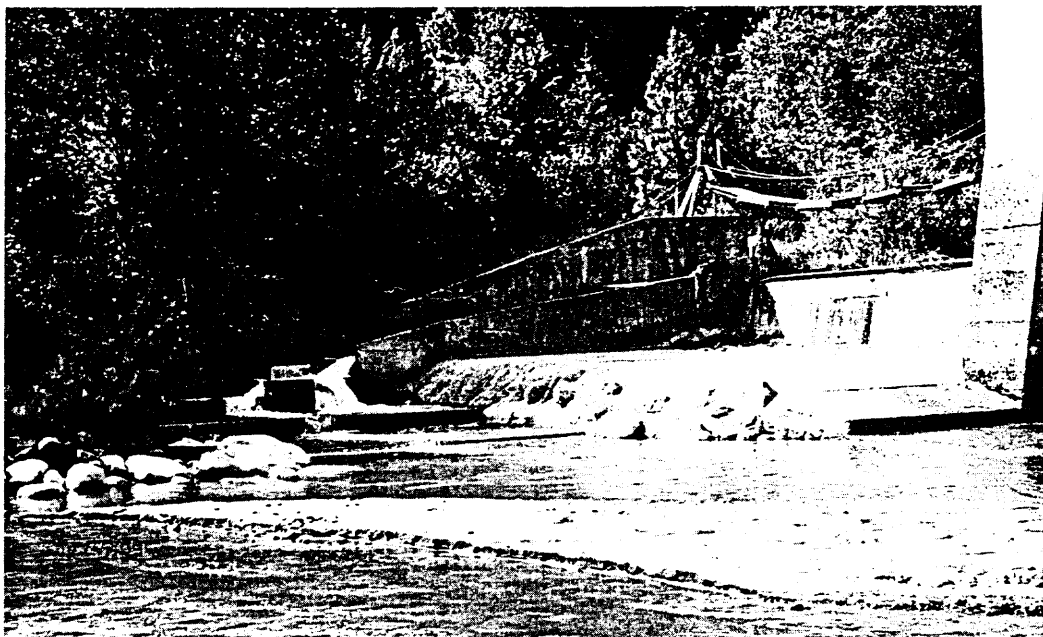


Figure 5. East ladder, Powerdale Dam. June 15, 1963.

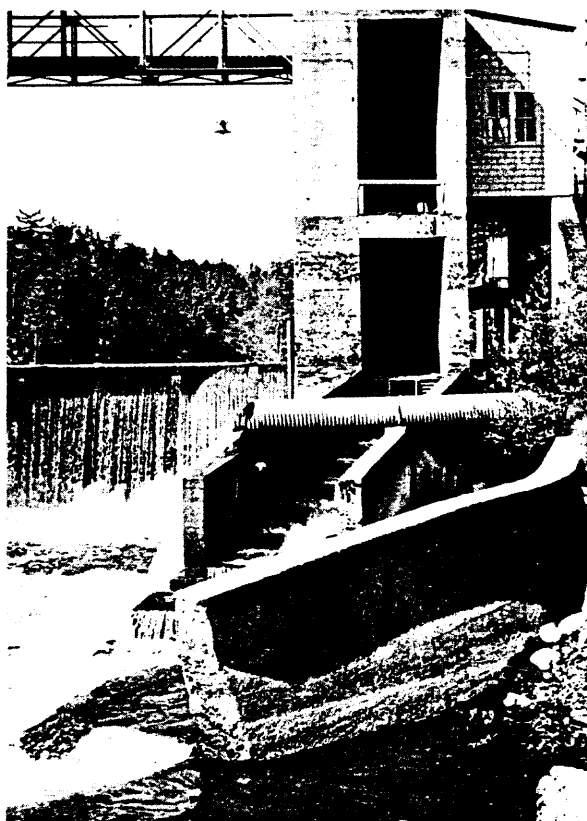


Figure 6. West ladder, Powerdale Dam, showing water attractions from trash channel (entering just below ladder) and dam. June 15, 1963.

each summer to divert irrigation water. While these have a negligible effect on upstream movement, they inhibit downstream migration of juvenile salmon and steelhead.

The only known proposed dam which would affect anadromous fish is one on Clear Creek, tributary to Middle Fork Hood River. It would be constructed by the Middle Fork Irrigation District. This structure, as proposed, would inundate some of the best potential spawning gravel found in the basin. To mitigate this damage, the District has agreed to maintain certain minimum pool and flow volumes and provide fish protective devices in connection with its project.

Diversions Several water diversions from streams exist, nearly all for irrigation purposes. A majority of these are from streams of the Hood River and Fifteenmile Creek drainages. The three largest diversions, Eastside ditch, Farmers ditch and Powerdale power canal, have been screened by the owners to prevent fish losses. Brief descriptions of these screens follow:

Eastside ditch is the largest irrigation diversion from the East Fork Hood River. The screen, located one-half mile below the headgate, is a traveling type and is in its second year of operation. Debris and rocks have caused numerous breakdowns and have made it difficult to determine the screen's effectiveness.

Farmers ditch diverts irrigation water from Hood River a short distance below the confluence of the East and West Forks. The Lenz Shaker type screen is located one-quarter mile below the headgate. The present screen has been installed for several years but has been plagued with difficulties in operation. Fiber deposits originating in the East Fork at Dee have caused breaks in the screen almost every summer for several years. In 1963 a heavy slime growth accompanied the fiber, compounding the problem of screen maintenance.

Powerdale canal, diverts water from the lower Hood River for generation of electric power. At the canal headgate on the west side of Powerdale Dam, a chain-belt screen, consisting of five units, is installed. The screen's effectiveness is believed to be good when in proper operating condition. However, from one to all of

the units often are removed or do not operate during periods of spring floods, fall debris collection and severe winter icing.

In many smaller diversions throughout the basin the Oregon State Game Commission has installed rotary screens to protect fish. Those which have been operated since 1961 are listed in Table 9. Locations and names of all active screens are shown in Figure 1.

TABLE 9  
Rotary Fish Screens and Bypass Traps  
Hood Basin, 1961-1963

Stream	Screens in operation			Bypass traps			Downstream migrants trapped <sup>1/</sup>		
	1961	1962	1963	1961	1962	1963	1961	1962	1963
Main stem Hood R.	0	1	1	0	0	0	0		
Neal Cr.	1	1	1	0	1	1	0	902	1,566
East Fork Hood R.	2	2	2	2	1	1	72	150	332
Evans Cr.	3	3	3	1	1	1	55	16	80
West Fork Hood R.	1	0	1	1	0	0	2		
Fifteenmile Cr.	5	5	5	1	0	0	85		
Ramsey Cr.	2	2	2	1	0	0	91		
Totals	14	14	15	6	3	3	305	1,068	1,978

<sup>1/</sup> Game fish species only.

The rotary screens, as well as the two large irrigation ditch screens described, are equipped with bypass channels to divert fish from the faces of the screens back into the streams. Periodically, Game Commission personnel place traps in these bypasses to enumerate fish being saved. Tables 9 and 10 present detailed bypass trap data. Trapping results, however, do not show screen effectiveness as no measurement of fish passing through the screens or swimming back out the headgates is available.

Pollution Chemicals from heavy multiple spraying of fruit trees in the Hood River valley undoubtedly enter the stream system. They have an unknown, but potentially great, accumulative effect upon fish and other aquatic life. Occasionally, as occurred twice in 1963, actual fish kills have been observed resulting from the cleaning of spray equipment or dumping of leftover chemicals in or near stream courses.

TABLE 10

Downstream Migrants Trapped in Bypasses of Two Rotary Screens  
and One Traveling Screen, Hood Basin, 1961-1963

Stream	Total Traps	Species	Mar. Apr.	Apr. May	May June	June July	July Aug.	Aug. Sept.	Sept. Oct.	Oct. Nov.	1961 Totals	1962 Totals	1963 Totals
E. Fk. Hood R. (traveling screen)	1	Rb <sup>1/</sup>	-	7	17	22	9	6	-	-	79	102	61
		Ct	-	-	1	6	-	1	-	-	2	11	8
		Sil	-	32	33	65	79	54	-	-	0	37	263
		Ch	-	-	-	1	-	-	-	-	1	0	1
		Nongame <sup>2/</sup>	-	-	-	1	-	1	-	-	2	21	2
Neal Cr.	1	Rb	17	106	86	14	29	17	20	-	0	442	289
		Ct	3	79	194	42	17	5	137	1	0	215	478
		Sil	2	3	262	36	102	53	334	7	0	245	799
		Nongame	-	2	2	7	6	1	-	-	0	17	18
Evans Cr.	1	Rb	-	-	-	-	-	-	-	-	-	-	-
		Ct	-	48	32	-	-	-	-	-	55	16	80
		Nongame	-	1	-	-	-	-	-	-	2	1	1
Totals	3	Game	22	275	625	186	236	136	491	8	137	1,068	1,979
		Nongame	-	3	2	8	6	2	-	-	4	39	21

<sup>1/</sup> Most fish classed as rainbow are juvenile steelhead.

<sup>2/</sup> Sculpins, (*cottus* spp.), were the only nongame fish caught.

A distillery in the City of Hood River and canneries in Hood River, Odell and Parkdale have effluent outfalls into the Columbia River and Hood River system. These also have an unknown but potentially harmful effect on fish.

Some of Hood River's most noticeable pollution originates from the hardboard plant at Dee. There, wood fiber enters East Fork through an overflow from the settling pond. The fiber, along with a slime growth associated with it, causes clogging of the Farmers ditch screen and other undesirable results. Another water quality problem arises when silt collection behind Dee Dam necessitates flushing. This occurs about six times a year, and the resulting high turbidities in both East Fork and the main stem Hood River severely inhibit downstream angling. Sediment from these high silt loads, coupled with the fiber and slime accumulation, may seriously retard growth of fish food organisms and limit successful spawning of trout and anadromous fish.

As at Dee Dam, flushings of silt collected behind Powerdale Dam are required. In 1959 Sams and Willis (1961) estimated that 17,000 and 10,000 cubic yards of silt were removed at single flushings of the Dee and Powerdale forebays, respectively.

Natural siltation from snow and glacier run-off is heavy in the Hood River system. This primarily occurs in the Middle Fork, and less frequently in the East and West Forks. It would be improper, therefore, to place excessive blame for main stem siltation on dam flushings alone, although their instantaneous impact is more acute.

Stream Flows From field studies conducted in 1963 and U. S. Geological Survey flow records, it was determined that stream volumes are generally adequate for game fish production in the more important streams of the basin. Those streams and stream sections often not maintaining such volumes are Hood River below Powerdale Dam, East Fork Hood River below Eastside ditch, Chenoweth Creek, Mill Creek and streams of the Fifteenmile Creek drainage. With the exception of lower Hood River, irrigation withdrawals are normally responsible. Miscellaneous stream flows measured in the basin in 1963 are included in Table 11.

In spite of the fact that favorable flows do exist in most streams, a perusal

TABLE 11

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## Miscellaneous Flows and Temperatures Obtained in Hood Basin Streams, August 1963

Stream	Date	Time	Temp. °F.		Flow Cfs	Location	Remarks
			Water	Air			
Columbia R. Tributaries							
Chenoweth Cr.	8-28	9:20 AM		65	0	Highway 30	Dry
Eagle Cr.	"	1:40 PM	60	75	27*	Just above hatchery intake	Several hundred "0" age silvers observed.
Fifteenmile Cr.	"	10:15 AM	61	70	0.6	Just above Eight-mile Cr.	
"	"	11:00 AM	61	73	1.3*	Highway bridge in Dufur	
Eightmile Cr.	"	10:10 AM	60	70	0.9	Mouth	Seined several 1" dace
"	"	10:40 AM	58	70	1.9	200 yds. below Highway 197	
Herman Cr.	"	4:30 PM	54	73	20	200 yds. above Highway 30	Seined several "0" age steelhead.
Lindsey Cr.	"	4:55 PM	55	70	5	Highway 30	
Mill Cr.	"	9:25 AM	61	67	3	Highway 30	One dead 3" squawfish. Many small live cyprinids
Mosier Cr.	"	8:35 AM	58	62	2.7*	1 mi. above mouth	
Hood R.							
Neal Cr.	8-27	9:30 AM	53	63	35-40	Mouth	Turbid
"	"	5:30 PM	58	70	17*	Highway 35 two miles above mouth	
Odell Cr.	"	5:45 PM	60	70	12	Approx. 2 miles above mouth	
East Fk. Hood R.	"	1:00 PM	57	77	65*	Confluence of Mid. Fk. Hood R.	Moderately turbid.
"	"	4:30 PM	51	74	86*	Polallie Cr. Forest	Camp
Dog R.	"	4:15 PM	53	76	7.5*	0.5 mi. above mouth	
Evans Cr.	"	3:50 PM	53	75	1.8	Approx. 1.5 miles above mouth	
Middle Fork Hood R.	"	12:45 PM	53	76	77*	Confluence of East Fk. Hood R.	Slightly turbid
Clear Cr.	"	3:00 PM	49	75	21*	Proposed dam site	Seined one "0" age silver.
West Fk. Hood R.	"	10:15 AM	51	67		U.S.G.S. gage	
Elk Cr.	8-29	10:00 AM	52	70	5	Mouth	Clear
GreenPoint Cr.	8-27	10:00 AM	54	65	8.2*	200 yds. above mouth	
Lake Branch	8-27	11:40 AM	51	68	39*	Mouth	
McGee Cr.	8-29	10:00 AM	48	70	11	Mouth	Clear

\* Flows measured with current meter.

of active water rights indicates that simultaneous withdrawal of all appropriated waters from most of the larger streams could completely dry some streams and cause others to drop below levels of proper fish production or survival. Such an occurrence is quite unlikely, but before substantial additional rights are granted both present and intended future use of existing rights should be investigated to reduce the possibility of such drawdowns.

The most critical flow shortage affecting fish occurs each summer and fall in Hood River main stem between Pacific Power and Light Company's Powerdale Dam and the Powerhouse 3.2 miles downstream. At the dam, water is diverted through a conduit with a capacity of about 500 c.f.s. The company's legal water right is for 140 c.f.s., but far greater amounts are usually diverted (Table 12). This excessive use hinders upstream passage of anadromous fish in the 3.2 mile section affected during low flow seasons when most of the river flow is diverted into the canal. From Table 17 it can be seen that steelhead or salmon migrate through lower Hood River during all months of the year. The timing and magnitude of successful passage in summer and fall months depend largely upon volumes arriving at the dam and the resulting amounts being diverted or allowed to flow over the dam.

The river channel below the dam is fairly wide and flat, and is composed primarily of rubble and boulders. As a result, considerable flow volumes are required to afford fish passage. At a flow of 75 c.f.s. on September 20, 1960, Sams and Willis (1961) observed several chinook salmon a short distance below the dam floundering in shallow water with backs exposed, experiencing difficulty staying within the main current. Flows through this section sometimes fluctuate greatly, which may subject spawning fall chinook to extreme water velocities, cause erosion or drying of redds, and strand fish which would expose them to suffocation and/or poaching.

In the 20-year period from 1930 to 1950, U. S. Geological Survey records show that mean September volume in the river between the dam and the powerhouse varied between 34 and 371 c.f.s., the average flow being 78 c.f.s. This is the month that

salmon begin entering the river system in numbers. For the same period, 309 c.f.s. was the average flow in the power canal. Similar conditions continue to prevail, but separate flow records are not published. Table 12 lists summer and fall flows in the river channel and power canal during the summer and fall of 1962. The lowest daily mean flow recorded in the river channel prior to 1950 was 4 c.f.s. in 1926.

Flows which would be required for fish passage through this river section have not been definitely determined owing to limited study time available. After additional investigations have defined these volumes, effort should be made to provide minimum flows for fish passage at all times of the year.

Lower East Fork Hood River commonly experiences flows lower than those considered desirable for fishing or rearing during the irrigation season. Partly as a result of this, legal trout stocking is shifted more to upper river areas after May 15.

Recommended Stream Volumes Because of short forewarning of Hood Basin study provided by the State Water Resources Board, only late summer and fall of 1963 was available for flow investigation. As a result, it was not possible to formulate a recommended flow regimen for the entire year as has been done in previous basins studied. It was possible, however, to establish minimum rearing and spawning volumes in several streams. These are presented in Table 13. While the listed spawning flows are adequate for salmon or steelhead during any period within their normal spawning seasons, the rearing flows are minimums only for the lowest flow period, usually occurring in August or September. Best rearing prevails if these minimums are approached gradually in as near a natural flow pattern as possible.

Determination of the flows recommended in Table 13 was made in the same manner as were those in the South Coast, Middle Willamette and Umatilla Basins. Basically, water depth and velocities were measured over important spawning areas, and water volumes and depths in summer were related to the biological requirements of juvenile salmon and steelhead. The listed rearing flows, if made available, would also prove



TABLE 12

Mean Daily Flows in Cubic Feet per Second of Powerdale Power Canal and Hood River  
below Powerdale Dam, July-October, 1962

Day	July			August			September			October		
	Canal	River	Combined	Canal	River	Combined	Canal	River	Combined	Canal	River	Combined
1	470	238	708	385	92	477	321	71	392	403	94	497
2	435	220	655	365	94	459	315	82	397	415	88	503
3	441	176	617	429	124	553	315	66	381	461	143	604
4	479	132	611	482	226	708	298	72	370	447	82	529
5	485	182	667	461	86	547	292	62	354	409	84	493
6	485	151	636	429	92	521	283	61	344	397	86	483
7	479	121	600	485	185	670	283	64	347	426	311	737
8	479	124	603	482	107	589	275	68	343	470	642	1,112
9	482	134	616	438	88	526	260	66	326	464	1,400	1,864
10	482	124	606	415	88	503	301	93	394	461	868	1,329
11	473	119	592	406	90	496	441	259	700	467	705	1,172
12	473	99	572	415	104	519	374	94	468	467	607	1,074
13	479	100	579	429	109	538	455	96	551	467	528	995
14	488	90	578	388	92	480	415	90	505	467	455	922
15	473	84	557	371	96	467	362	98	460	467	425	892
16	464	78	542	394	98	492	342	98	440	470	318	788
17	461	77	538	423	94	517	350	94	444	467	260	727
18	444	82	526	371	84	455	356	102	458	464	227	691
19	429	84	513	348	102	450	365	86	451	467	203	670
20	420	88	508	362	100	462	362	82	444	461	166	627
21	432	94	526	371	94	465	362	84	446	455	149	604
22	438	100	538	336	86	422	348	96	444	455	132	587
23	450	96	546	310	88	398	350	92	442	453	126	579
24	473	86	559	310	80	390	345	84	429	435	129	564
25	485	82	567	348	68	416	350	82	432	420	134	554
26	476	86	562	336	100	436	359	82	441	418	134	552
27	444	94	538	315	84	399	365	82	447	420	126	546
28	432	102	534	321	71	392	441	237	678	400	132	532
29	400	112	512	345	69	414	470	181	651	397	137	534
30	388	104	492	324	64	388	420	104	524	403	132	535
31	394	100	494	318	66	384				383	134	517

TABLE 13

Recommended Minimum Rearing and Spawning Flows, Hood Basin

Stream	Recommended flows (cfs)		Location
	Rearing	Spawning	
Eagle Cr.	20		Above hatchery dam intake <sup>1/</sup>
Fifteenmile Cr.	2	15	Dufur
Fifteenmile Cr.	4	20	Confluence of Eightmile Cr.
Eightmile Cr.	2	15	Mouth
Eightmile Cr.	2	10	Highway 197
Herman Cr.	15	60	Mouth
Lindsey Cr.	3	20	Mouth
Mill Cr.	4	15	Mouth
Mosier Cr.	2		Mouth
Hood River			
Neal Cr.	5	20	Mouth
Odell Cr.	8 <sup>2/</sup>		Mouth
East Fk. Hood R.	60		Confluence of Polallie Cr.
Dog R.	4	12	Mouth
Evans Cr.	2		Mouth
Middle Fork Hood R.	40		Mouth
Clear Cr.	10		Confluence of Pinnacle Cr.
West Fork Hood R.	100		U.S.G.S. Gage 14-1185
Elk Cr.	3		Mouth
Green Point Cr.	5		Mouth
Lake Branch	25		Mouth
McGee Cr.	6		Mouth

<sup>1/</sup> Recommended flow to "arrive at" the dam; all other listed flows are intended to arrive at and depart from the point designated.

<sup>2/</sup> Flow for trout fishing only; other flows listed are intended primarily for production of anadromous species.

adequate for trout production and angling.

All of the recommended flows are believed to fall below true optimums for fish production or angling. Their purpose is primarily to define tolerable minimums and to protect these flows from excessive future withdrawal when they do exist. They are not necessarily volumes which would be desirable below impoundments when supplemental water could be available for fish enhancement. Additional field study

would usually be required to formulate such recommendations.

Stream Temperatures      Temperatures in nearly all basin streams presently are favorable for fish production. Summer temperatures below 65° F. are best for rearing of juveniles of most anadromous species. Table 14 lists weekly readings of minimum-maximum thermometers which were installed in five important fish producing streams from May to October, 1963. Temperatures and accompanying water quality factors would be expected to exceed desirable levels only if greater appropriations and diversion were made in the future.

A thermograph was installed in Hood River just below Powerdale Dam in the summer and fall of 1963 (Table 15). If adverse temperatures occurred in the system, it was felt that they would be most likely to occur within this river section. Temperatures recorded, however, were generally favorable and compared closely with those which were obtained 2.6 miles downstream in 1959 and 1960 (Sams and Willis, 1961).

Columbia River surface temperatures reach 70° F. in July and August throughout much of the Hood Basin. The existing impoundments have contributed to these warm temperatures. Additional upstream storage projects, plus the impending threat of greater atomic energy developments, cause pessimism about future water temperatures which may adversely affect fish migration and contribute to the spread of fish diseases.

Management      Major game fish management practices of the Game Commission in the basin include screening of diversions, stocking trout and steelhead, and a steelhead research program. A fishery biologist whose responsibilities encompass the many phases of maintaining and enhancing the area's fish resources has been stationed in Hood River since 1953.

Trout releases into the lakes and streams of the basin since 1960 were shown in Table 8. Nearly all of these fish are raised at the Hood River Hatchery near Dee. This hatchery is devoted almost entirely to the raising of trout. Adult summer steelhead obtained from Hood River are held and spawned at the hatchery. Their

TABLE 14

Weekly Temperatures in Degrees Fahrenheit Obtained with Minimum-Maximum Thermometers from Five Hood Basin Streams in 1963

Week Beginning	Neal Creek 50 yds. below upper Neal Cr. diversion (Fig.1)		E. Fk. Hood River River mile 5.9 50 yds. below "toll bridge"		W. Fk. Hood R. River mile 4.1		Lake Branch River mile 2.1		Fifteenmile Cr. River mile 35.5 above all irri- gation diversions	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
May	19	48	57	44	43	56	43	53	45	53
	26	46	54	41	44	55	44	53	43	53
June	2	48	50	46	44	56	44	56	44	56
	9	47	59	44	45	60	44	59	46	60
	16	54	60	46	50	61	50	58	50	51
	23	46	58	44	47	58	44	56	46	64
	30	47	58	44	46	58	46	56	50	62
July	7	49	60	46	48	56	47	55	50	62
	14	50	60	46	46	60	47	61	50	64
	21	49	60	48	47	63	46	62	51	64
	28	49	60	48	47	60	46	57	50	66
August	4	50	60	47	49	61	47	58	50	66
	11	50	60	47	50	62	48	58	50	66
	18	50	59	48	48	60	47	56	48	65
	25	46	57	45	47	58	46	55	50	62
Sept.	1	51	59	48	48	59	47	56	50	64
	8	51	59	47	47	58	46	56	50	63
	15	50	58	47	47	58	46	56	50	63
	22	46	56	44	46	58	46	56	50	62
	29	49	53	46	46	56	46	56	52	65
Oct.	6	48	50	44	44	55	44	53	48	61
	13	47	52	44	46	52	45	51	49	58
Averages		48.7	57.2	45.6	46.6	58.2	45.9	56.3	44.2	61.4

TABLE 15

Minimum and Maximum Water Temperatures in Degrees Fahrenheit of Hood River  
200 Yards Below Powderdale Power Dam, May 14 - November 14, 1963

Date	May		June		July		August		September		October		November	
	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.
1			53	55	52	61	52	62	56	61	51	56	43	46
2			52	54	55	63	55	65	56	62	51	56	44	47
3			51	54	54	63	56	66	54	62	52	56	41	44
4			52	53	56	62	58	67	55	62	52	54	44	46
5			50	52	55	62	58	67	56	63	51	53	44	46
6			50	53	55	58	58	67	56	63	49	53	44	46
7			51	53	54	56	57	66	58	61	48	53	41	43
8			51	52	52	60	57	65	57	63	49	54	42	43
9			51	53	54	58	58	61	57	64	51	55	43	45
10			51	56	54	60	57	66	59	63	51	55	43	45
11			54	59	53	63	58	64	55	60	52	54	45	47
12			55	63	54	65	58	63	56	62	51	54	45	46
13			56	62	58	67	59	65	57	60	50	53	44	45
14			56	63	58	64	57	63	55	57	52	54	42	-
15	48	52	57	63	54	63	54	63	53	55	52	56	42	-
16	48	50	58	63	54	61	56	65	53	56	49	53	45	-
17	48	55	57	63	56	63	57	65	52	55	48	53	45	-
18	50	54	57	62	55	64	56	63	51	56	49	53	45	-
19	51	54	57	62	55	63	57	63	51	56	45	48	45	-
20	53	56	56	60	57	64	57	62	52	57	45	47	45	-
21	54	57	53	56	57	65	56	62	53	57	47	49	45	-
22	53	55	51	56	57	61	54	61	53	57	49	52	45	-
23	52	58	53	57	53	60	55	58	54	56	47	50	45	-
24	49	57	53	57	56	61	52	58	51	55	47	49	45	-
25	49	56	52	61	53	63	52	59	52	56	46	49	45	-
26	49	54	50	58	55	65	52	61	52	57	43	45	45	-
27	50	54	51	60	57	66	54	62	54	59	41	44	45	-
28	51	55	54	57	57	64	54	61	54	59	43	47	45	-
29	53	56	52	55	56	63	55	63	55	58	44	47	45	-
30	54	57	51	58	55	63	56	61	52	57	43	46	45	-
31	54	56			55	60	56	61			43	46	42	-
Averages	50.9	55.0	53.2	57.7	55.0	62.4	55.8	63.1	54.3	59.0	48.1	51.4	43.2	45.3

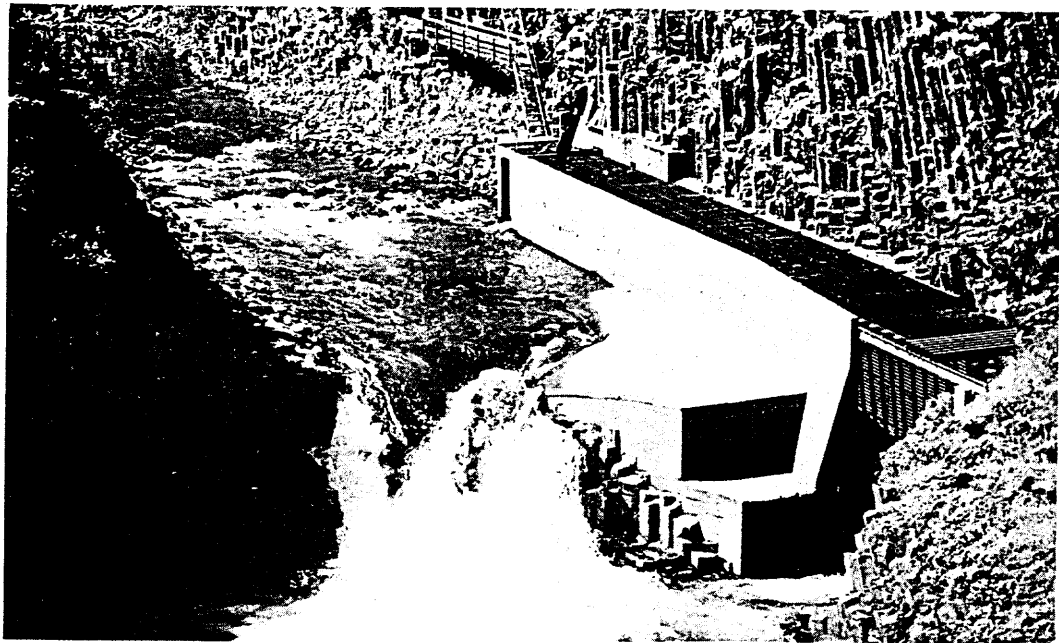


Figure 7. Punchbowl Falls and ladder, West Fork Hood River.  
June 14, 1963.



Figure 8. Fishery research worker tagging adult steelhead,  
east ladder, Powerdale Dam. May 1963.

progeny are raised at Gnat Creek Hatchery near Astoria before release into the Hood River system as yearlings. All anadromous fish liberations which have been made in the Hood River system by state and federal fishery agencies are shown in Table 16. The only releases made into other streams of the basin, excluding the Columbia River, have been salmon releases by the Fish Commission of Oregon into Eagle and Herman Creeks.

The steelhead research program was initiated in 1961 to determine contributions of the hatchery-raised summer steelhead to Hood River runs. Study is directed largely on enumeration and tagging of adult steelhead at Powerdale Dam and Punchbowl Falls (Figure 8). Traps in the ladders over the two structures have enabled total counts of fish moving upstream since 1962. Counts recorded in 1963 are presented in Tables 17 and 18.

## GAME RESOURCES OF THE HOOD BASIN

### General

Adequate populations of several game species are present in the Hood Basin providing varied hunting opportunities. With some exceptions, the game populations of the area are utilized by sportsmen up to a degree commensurate with the species present and their natural reproductive potential. However, since there is a lack of widespread areas of excellent wildlife habitat supporting high game concentrations, the area is not as popular with out-of-basin hunters as other areas in the state.

Water requirements of the species present appear to be adequately met. Proposed irrigation and reservoir developments would increase and enhance waterfowl and upland game habitat through impoundment and ditch construction and the creation of waste water and stock watering ponds.

TABLE 17

Powerdale Dam Trap Counts  
Hood River, 1963

Month <sup>1/</sup>	Wild	Summer St. Marked	Winter St	Unclassified Steelhead	Steelhead tagged at Powerdale	No. of St taken to hatchery	Other species of fish caught					
							Sil	Ch	SS	Ct	Rb	DV Br
Jan.	29	3	7	-	32	-	2	-	-	11	-	-
Feb.	6	-	3	-	4	-	-	-	-	4	-	-
Mar.	40	4	28	-	52	-	-	-	-	11	-	-
Apr.	29	31	25	240	265	-	-	-	-	13	1	-
May	40	17	-	458	331	-	-	-	-	1	-	3
June	129	47	-	156	198	56	-	16	-	1	-	2
July	132	53	-	2	147	46	-	6	2	-	-	1
Aug.	45	14	-	-	31	4	-	-	-	6	-	-
Sept.	22	6	-	-	23	-	35	7	2	-	-	-
Oct.	22	1	-	-	11	-	73	22	1	1	1	3
Nov.	16	-	-	-	9	3	32	1	-	-	2	-
Dec.	9	-	5	-	10	-	3	-	-	1	1	-
Totals	2/519	176	68	856	1,113	109	145	52	11	43	5	6

1/ A month covers the period from the 16th of the previous month through the 15th of the listed month.

2/ Grande total of steelhead caught - 1,619.



TABLE 18

Punchbowl Falls Trap Counts  
West Fork Hood River, 1963<sup>1/</sup>

Month <sup>2/</sup>	Summer St.		Winter St	Unclassified Steelhead	Steelhead tagged at Powderdale	No. of St taken to hatchery	Other species of fish caught			
	Wild	Marked					Sal	Ch	SS	DV
Jan.	-	-	-	-	-	-	-	-	-	-
Feb.	-	-	-	-	-	-	-	-	-	-
Mar.	-	2	-	-	1	-	-	-	-	-
Apr.	1	1	2	7	6	-	-	-	-	-
May	-	2	1	7	6	-	-	-	-	-
June	15	4	-	23	22	7	-	-	-	-
July	37	22	-	3	43	-	-	2	-	-
Aug.	29	12	-	-	20	-	-	1	6	1
Sept.	9	10	-	-	12	-	1	3	8	-
Oct.	7	2	-	-	5	-	-	4	4	-
Nov.	-	1	-	-	1	-	1	-	-	-
Dec.	-	-	-	-	-	-	-	-	-	-
Totals <sup>3/</sup>	98	56	3	40	116	7	2	10	18	1

<sup>1/</sup> Some steelhead, and possibly an occasional salmon, ascend the falls without using the ladder and therefore are not counted.

<sup>2/</sup> A month covers the period from the 16th of the previous month through the 15th of the listed month.

<sup>3/</sup> Grand total of steelhead caught - 197.

## Big Game

This area is unique in that it contains a large population of blacktail deer normally found only west of the Cascade summit. The major big game species of Hood Basin, blacktail deer are found throughout the Hood River, Mosier, Chenoweth and Mill Creek watersheds, and in the upper half of Fifteenmile Creek watershed.

Blacktail deer populations have fluctuated but presently seem to be quite moderate and stable. However, due to agricultural encroachment and past overuse on deer winter ranges in the Mosier, Mill and Fifteenmile Creek drainages, deer populations are still too high for the amount of winter habitat available. Some agricultural damage occurs in the valley orchards and on higher elevation grain fields.

TABLE 19

Blacktail Deer Population Trends, Hood Basin, 1954-62

Herd Range	Deer Observed per Mile Traveled								
	1962	1961	1960	1959	1958	1957	1956	1955	1954
Six Fingers	13.7	12.0	8.9	13.9	26.2	-	31.5	26.8	28.8
Hood River	7.3	3.8	24.7	26.2	13.9	15.7	16.2	18.7	42.9

TABLE 20

Individual Big Game Damage Complaints Received  
Hood Basin

Drainage	1961	1960	1959	1958
Hood River	36	29	22	43
Mosier	8	7	6	7
Chenoweth	4	9	3	0
Mill	14	9	6	1
Fifteenmile	2			
Threemile	1			
Totals	65	54	37	51

Despite the brushy nature of the forested parts of the basin, the area is quite popular with local deer hunters. The 1962 deer season provided over 12,000 man-days of recreation for over 3,000 hunters.

TABLE 21  
Big Game Management Units, Hood Basin  
(Figure 9)

Game Management Unit	Total Unit Area (sq. mi.)	Unit Area in Basin (sq. mi.)	Per Cent of Area in Basin	Per Cent of Unit Hunting Pressure in Basin <sup>1/</sup>
Hood River	400	380	95	100
Wasco	990	530	54	38 (deer) 65 (elk)
Sherman	2,050	190	9	3
Totals	3,440	1,100		

<sup>1/</sup> Estimated.

TABLE 22  
1962 Deer Seasons, Hood Basin

Big Game Management Unit	Season	Hunting Pressure in Basin (per cent)	Estimated Hunters <sup>1/</sup>	Estimated Kill <sup>1/</sup>	Days Hunted per Deer Killed <sup>1/</sup>	Estimated Hunter Days <sup>1/</sup>
Hood River	General	100	920	274	17	4,388
	Extended	100	848	190	11	2,000
Wasco	General	38	1,021	385	12	4,620
	Extended	100	376	157	6	900
Sherman	General	3	50	30	7	210
Totals			3,215	1,036	-	12,118

<sup>1/</sup> Estimated from 1963 random hunter survey.

A few mule deer are present in the lower part of Fifteenmile Creek drainage. This limited population does provide some hunting for local citizens.

Although Roosevelt elk have probably always been present in the basin, only through an increase in recent years has there been enough elk to provide some hunting. Small herds of elk may be found on the west side of the Hood River valley and at the

TABLE 23

## 1962 General Elk Season, Hood Basin

Game Management Unit	Hunting Pressure in Basin	Estimated Hunters <sup>1/</sup>	Estimated Kill <sup>1/</sup>
Hood River	100 per cent	10	3
Wasco	65	265	12
Totals		275	15

<sup>1/</sup> Estimated from 1963 random hunter survey.

heads of Mosier, Mill and Fifteenmile Creeks. Recently there has been some agricultural damage caused by elk in the Pleasant Ridge area between Fivemile and Eightmile Creeks.

Closure of the Dalles City watershed to all access has precluded utilization of the big game populations of a large part of Mill Creek and Dog River drainages, which comprise an important segment of the Hood Basin's total area (Figure 9).

The black bear is classified as a game animal in the Mt. Hood National Forest. A fair population is present, but the harvest is small and usually incidental to deer or elk hunting.

#### Upland Game

The largest concentration of pheasants and valley quail are found in the creek bottom habitat of Wasco County. There is excellent habitat here and very good hunting opportunity wherever there is adequate access.

TABLE 24

## Upland Game Populations Trends, Hood Basin

Species	County	Birds per 100 Acres Sampled					
		1961	1960	1959	1958	1957	1956
Pheasants	Hood River	8.1	8.8	12.6	10.9	5.9	7.5
	Wasco	9.2	14.8	29.2	20.3	10.7	19.0
Valley Quail	Wasco	7.4	10.5	34.3	15.6	7.7	15.3

Although there is also excellent habitat in Hood River valley, bird numbers are generally low. A high human population density and prevailing agricultural practices such as heavy pesticide use are the major factors causing these low upland game concentrations. Pheasants and valley quail are the predominant species here also.

Natural reproduction is supplemented by stocking artificially propagated pheasants in some of the key hunting areas of Wasco County. Lack of water is not a factor limiting game bird distribution except possibly in parts of northern Wasco County.

Mountain quail and blue and ruffed grouse are present in the forested parts of the basin. Grouse hunting is popular in the Hood River area and to a lesser degree in other parts of the basin. Utilization of these three species is relatively minor, however.

Large numbers of mourning doves are found in the Pleasant Ridge, Ramsey Creek and Friend areas of Wasco County. These areas are used during the summer breeding season as well as the fall migration. Dove hunting is very popular around water holes, stock water impoundments and in wheat fields, while large numbers of birds are still present early in the September hunting season.

Band-tailed pigeons are present primarily in Hood River valley where they provide some hunting in certain localized areas.

Numerous flocks of wild turkeys are present in the southern parts of the basin. These birds, from the 1960 White River introduction by the Game Commission, are increasing in number and distribution. Present estimates place the population at two to three hundred birds in approximately 10 flocks of 7 to 40 birds each.

Silver gray squirrels are present in limited numbers. They are protected and there is no current open season.

#### Furbearers

Economically speaking, beaver are the most important fur species in the Hood Basin, although mink, otter and muskrat are also trapped. In the 1962-63 trapping season, pelts with an estimated value of over \$1,400 were harvested. About nine

trappers were active during the 1962-63 season, trapping approximately 100 beaver, 158 muskrat, 28 mink, 2 otter and 16 raccoon.

Waterfowl

A small breeding population of ducks is present during the summer months along many of the Wasco County streams. Several small, scattered ponds and impoundments also provide important resting and breeding areas. These areas receive minor use by duck hunters during the fall season. Additional waterfowl breeding and resting areas would be created incidental to irrigation and recreation impoundments proposed for northern Wasco County.

Migratory bird regulations are basically established by the Bureau of Sport Fisheries and Wildlife of the U. S. Fish and Wildlife Service.

Approved by:

Submitted by:

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Federal Aid Coordinator

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James M. Hutchison  
Project Leader

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Robert A. Corthell, Biologist  
Basin Investigations

## REFERENCES

- Geological Survey Water Supply Paper 1318  
1958      Compilation of Records of Surface Waters of the  
            United States through September 1950. Part 14.  
            Pacific Slope Basins in Oregon and Lower Columbia  
            River Basin.
- Lane, Donel J.  
1955      Report of Water Resources Committee, Submitted to  
            Forty-eighth Legislative Assembly, January 1955.
- Oregon State Game Commission  
            Annual Game Division Reports.
- Oregon State Game Commission  
            Annual Fishery Division Reports.
- Oregon State Game Commission  
1963      The Fish and Wildlife Resources of the Umatilla  
            Basin, Oregon, and Their Water Use Requirements.
- Sams, Roy E., and Raymond A. Willis  
1961      Summary Report of Hood River Studies, 1959 and  
            1960. Fish Commission of Oregon, Research Division.
- U. S. Army Corps of Engineers  
1962      Annual Fish Passage Report (North Pacific Division)  
            Bonneville, The Dalles and McNary Dams, Columbia  
            and Snake Rivers, Oregon and Washington; U. S. Army  
            Engineer Districts, Portland and Walla Walla Corps  
            of Engineers.

Stream Eagle Creek Tributary to Columbia R. County Mult.(mouth)

Stream Location Enters Columbia R. near Bonneville Dam Stream Miles 9+

FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Moderate	Moderate	High
St	X		"	Low	Low
Sil	X		"	Low	None
Ch	X		High		

Other Fish Present Cot, L Suspected D, EB, Ct

Upper Limit of Anadromous Fish Punchbowl falls (approx. 2.5 miles).

Spawning Potential Unsurveyed.

Factors Limiting Fish Production Falls.

KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
8-28-63	Just above hatchery dam	1:40 PM	75	60	27	OSGC

Remarks Fish Commission racks for salmon near mouth.

Has been stocked with legal rainbow.



Stream Fifteenmile Cr. Tributary to Columbia R. County Wasco

Stream Location Enters the Columbia R. 3 miles east of The Dalles Stream Miles 54

FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Moderate	Moderate	Moderate
St	X		Low-Mod.	Low	Low-Mod.
Sil		X			

Other Fish Present Cot, L, D, Su, Sq Suspected Warm-water game spp.

Upper Limit of Anadromous Fish None, but movement is impeded by several dams and two falls near mouth.

Spawning Potential Fair to good throughout but irrigation diversions limit present use. (Unsurveyed).

Factors Limiting Fish Production Low flows, inadequate passage facilities over falls and irrigation dams; siltation below Dufur.

KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F. Air Water		Est. Flow in c.f.s.	Source
8-1-63	0.5 mile below Dufur water works	-	-	66		OSGC
8-28-63	Just above Eightmile Cr	10:15 AM	70	61	0.6	OSGC
8-28-63	Dufur	11:00 AM	73	61	1.3	OSGC

Remarks Stream is intermittent below Dufur in summer as a result of irrigation use.

Stocked annually with legal rainbow trout above Dufur. At times has been an Indian dip net fishery near the mouth.  
Some of the irrigation diversions are screened.

Stream Eightmile Cr. Tributary to Fifteenmile Cr. County Wasco

Stream Location Enters Fifteenmile Cr. at river mile 2.8 Stream Miles 35

#### FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Moderate	Unknown	Low-Mod.
St	X		Low	"	

Other Fish Present Cot, L, D Suspected Su, Sq

Upper Limit of Anadromous Fish Unknown.

Spawning Potential Unsurveyed.

Factors Limiting Fish Production Low flows, siltation, irrigation dams and diversions.

#### KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
8-28-63	Mouth	10:10 AM	70	60	0.9	OSGC
8-28-63	200 yds. below Hwy.197	10:40 AM	70	58	1.9	OSGC

Remarks

Stream Herman Cr. Tributary to Columbia R. County Hood River  
 Stream Location Enters Columbia R. 5 miles above Bonneville Dam Stream Mi. 7+

#### FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Moderate		Moderate
Ct	X				Moderate
St	X		Low-Mod.	Low-Mod.	
Ch	X		Mod.-High		
Sil	X		Mod.	Low-Mod.	

Other Fish Present Cot Suspected D, L

Upper Limit of Anadromous Fish Falls  $1\frac{1}{2}$  miles above mouth.

Spawning Potential Good in lower  $1\frac{1}{2}$  miles.

Factors Limiting Fish Production Falls.

#### KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
8-28-63	200 yds. above Hwy. 30	4:30 PM	73	54	20	OSGC

Remarks Mud Lake is the headwater source.

Lower section of the stream is closed to angling from Aug. 15 to November 30. (Fish Commission has racks below Highway 30 bridge for taking salmon.)

Stream Lindsey Cr. Tributary to Columbia R. County Hood River

Stream Location Enters Columbia R. at river mile 159 Stream Miles 3.7

#### FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Moderate		Low
Ct	X		Low		
Ch	X		High	High	
Sil	X		Mod.-High	Mod.-High	
St	X		Unknown		

Other Fish Present Cot Suspected L, EB

Upper Limit of Anadromous Fish Falls  $\frac{1}{2}$  mile above mouth.

Spawning Potential Heavy spawning by salmon in the quarter mile below falls.

Factors Limiting Fish Production Falls near mouth.

#### KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
8-28-63	Highway 30	4:55 PM	70	55	5	OSGC

Remarks Closed to all angling except from April 20 to August 14.

North and Bear Lakes are the headwater source for Lindsey Cr.

Stream Mill Creek Tributary to Columbia R. County Wasco  
 Stream Location Enters Columbia R. at The Dalles Stream Miles 15  
 (S. Fk.)

FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Moderate		Low
St	X		Moderate		Low
Shad		X	Low		

Other Fish Present Sq, Cot Suspected Su, L, D

Upper Limit of Anadromous Fish Wick's Dam (The Dalles city water supply).

Spawning Potential Unsurveyed.

Factors Limiting Fish Production Low flows in lower stream in summer.  
 Some pollution.

KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
8-28-63	Highway 30	9:25 AM	67	61	3	OSGC

Remarks Stream above Wick's Dam closed to access (The Dalles watershed).

Stream Mosier Creek Tributary to Columbia R. County Wasco  
 Stream Location Enters Columbia R. at Mosier Stream Miles 11+

#### FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Mod.-High	Moderate	Mod.-High
St	X		Low		
Ct	X		Moderate	Moderate	Low-Mod.

Other Fish Present Suspected Cot, D, L

Upper Limit of Anadromous Fish  $\frac{1}{2}$  mile above the mouth (falls).

Spawning Potential Unsurveyed; moderate for trout.

Factors Limiting Fish Production Falls near mouth.

#### KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
8-28-63	0.6 mile above mouth	8:35 AM	62	58	2.7	OSGC

Remarks At times all of stream to the falls is flooded by Columbia R. (Bonneville pool).

Stream Hood River Tributary to Columbia R. County Hood River  
 Stream Location Enters Columbia R. at town of Hood River Stream Miles 12.25

#### FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Mod.-High	Low-Mod.	Mod.-High
Ct	X		Moderate	Unknown	Incidental
St	X		Mod.-High	Mod.-High	High
Ch <sup>1/</sup>	X		Low-Mod.	Low-Mod.	Low-Incidental
Sl	X		Moderate	Moderate	Low-Mod.

Other Fish Present Cot, L, Su, Wf, Br, DV, K, SS, Sq Suspected D

Upper Limit of Anadromous Fish None, but impeded by one dam and low water flows during late summer and early fall.

Spawning Potential Good throughout for steelhead and salmon.

Factors Limiting Fish Production Low flows due to irrigation diversions and PP&L power plant diversion. Some pollution from a hardboard plant, domestic and industry. Powerdale Dam impedes proper upstream passage. High siltation.

#### KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F.		Est. flow in c.f.s.	Source
			Air	Water		
7-13-63	200 yds. below Powerdale Dam			67		OSGC
8/4-5-6/63	200 yds. below Powerdale Dam			67		OSGC

Remarks Bag limit for steelhead from March 1 to October 31, one fish per day-two in possession. Closed to all angling from wall of PP&L Powerdale plant to a point 200 feet downstream.

The stream is fished heavily by local anglers for steelhead. Has potential for spring chinook. In the 1930's a good run of spring chinook reported.

Total upstream fish counts have been made at Powerdale Dam since Dec. 1962 (Table 17).

1/ Both fall and spring chinook.

Stream Neal Creek Tributary to Hood River County Hood River  
 Stream Location Enters Hood River at river mile 4.7 Stream Miles 11+

# FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Mod.-High	Moderate	Mod.-High
St	X		Low-Mod.		
Ct	X		Mod.-High		
Sil	X		Mod.-High		

Other Fish Present Cot Suspected D, L

Upper Limit of Anadromous Fish At approximately the 6-mile point the stream gradient becomes excessively steep.

Spawning Potential Good up to the 6-mile point. Used primarily by silver salmon and cutthroat trout (sea-run).

Factors Limiting Fish Production Brush and log jams; irrigation diversions.

# KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F. Air Water		Est. Flow in c.f.s.	Source
8-1-63	5 miles above mouth	-	-	60		
8-27-63	Mouth	9:30 AM	63	53	35-40	OSGC

Remarks Has been stocked with legal Rb in the past. Will not be stocked in 1964.

The irrigation diversions are screened.



Stream Odell Creek Tributary to Hood River County Hood River  
 Stream Location Enters Hood R. at river mile 5.6 Stream Miles 5.5

# FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Moderate		Moderate
Ct	X		Moderate		Moderate
St		X			

Other Fish Present Cot Suspected D, L

Upper Limit of Anadromous Fish No known barriers.

Spawning Potential Unsurveyed.

Factors Limiting Fish Production Pollution, raw sewage.

## KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
8-27-63	Approximately 2 miles above mouth	5:45 PM	70	60	12	OSGC

Remarks Has been stocked on annual basis in past years.

Has dense streamside cover which hinders fishermen. Primarily fished by children.

Stream East Fork Hood R. Tributary to Hood River County Hood River  
 Stream Location Enters Hood R. at river mile 12.3<sup>1/</sup> Stream Miles 28.5

#### FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		High	Moderate	High
St	X		Low	Low	Low
Ct	X		Low		
Sil	X		Low-Mod.	Low-Mod.	

Other Fish Present Cot, L Suspected Wf, D, Su, Sq

Upper Limit of Anadromous Fish Steelhead have been observed one mile above Polallie Creek, but are able to go higher than this.

Spawning Potential Fair to good.

Factors Limiting Fish Production Glacier silt during summer months. Inadequate ladder at Oregon Lumber Co. dam (Hines Lumber Co.). Low summer flows in lower portions. Wood fiber entering at Dee.

#### KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
8-1-63	Toll bridge park	-	-	59		OSGC
8-27-63	Just above confluence of Middle Fork	1:00 PM	77	57	65	OSGC

Remarks River channel has been changed in several places due to highway construction. Some water is diverted for irrigation. Stocked as key stream with legal size rainbow trout by OSGC.

Hines Lumber Co. dam, which is located at Dee, is a barrier to fish. The dam has a fish ladder which is of dubious value.

<sup>1/</sup> This mileage, as all others in this report, was taken from State Water Resources Board map no. 4.8. However, the 2.1-mile river section between West Fork and Middle Fork, which is classified as part of Hood River, is considered as the lower end of East Fork by most residents.

Stream Dog River Tributary to East Fk. Hood R. County Hood River  
 Stream Location Enters East Fk. at river mile 10 Stream Miles 10+

FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Mod.-High		Low-Mod.
Ct	X				
St	X		Low		
Sil		X			

Other Fish Present Cot Suspected L, D

Upper Limit of Anadromous Fish Beaver and log jams in lower river.

Spawning Potential Unsurveyed.

Factors Limiting Fish Production Jams.

KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
8-27-63	0.5 mile above mouth	4:15 PM	76	53	7.5	OSGC

Remarks The lower section of river is used some by steelhead.

Stream Evans Creek Tributary to East Fork Hood R. County Hood River

Stream Location Enters East Fk. at river mile 5.0 Stream Miles 6+

#### FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Moderate	Moderate	Moderate
Ct	X		Low		
St	X		Low		

Other Fish Present Cot Suspected L, D

Upper Limit of Anadromous Fish Unknown.

Spawning Potential Unsurveyed.

Factors Limiting Fish Production Irrigation diversions which create low flows during summer months. Beaver and debris jams.

#### KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
8-27-63	Approximately 1 mile above mouth	3:50 PM	75	53	1.8	OSGC

Remarks Water is diverted into Evans Creek from Elliot Creek for irrigation during the summer months.

Stream Middle Fork Hood R. Tributary to East Fk. Hood R. County Hood River  
 Stream Location Enters East Fk. 2.3 miles above confluence Stream Miles 9.5  
of West Fork.

# FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Moderate	Unsurveyed	Small to Moderate
Ct	X		Low		
St		X			
Sil		X			

Other Fish Present Cot, L Suspected D

Upper Limit of Anadromous Fish No known barriers.

Spawning Potential Unsurveyed.

Factors Limiting Fish Production Large amount of glacial silt during summer months below Coe Creek.

# KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
8-27-63	Mouth	12:45 PM	76	53	77	OSGC

Remarks

Stream Clear Creek Tributary to Middle Fk. Hood R. County Hood River

Stream Location Enters Middle Fork at river mile 9.5 Stream Miles 6.5

FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Mod.-High	Moderate	Moderate
Ct	X				
St	X <u>1/</u>			Unknown	
Sil	X <u>1/</u>			Unknown	

Other Fish Present Cot Suspected

Upper Limit of Anadromous Fish No known barriers. Probably as high in headwaters as stream size and gradient permit.

Spawning Potential Excellent

Factors Limiting Fish Production None at the present (dam proposed) other than debris jams in lower portion.

KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
8-27-63	Proposed dam site	3:00 PM	75	49	21	OSGC

Remarks Dam is proposed by Middle Fork Irrigation District.

1/ Recent St and Sil plants have been made.

Stream West Fk. Hood R. Tributary to Hood River County Hood River  
 Stream Location Enters Hood River at river mile 12.3 Stream Miles 14.4

#### FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Moderate	Moderate	Closed above the Punchbowl
St	X		Moderate	Moderate	
Ch	X		Low		
Si1	X		"		
Wf	X		"		

Other Fish Present SS, Ct, Br, L Suspected DV, EB, D

Upper Limit of Anadromous Fish No known barriers.

Spawning Potential High. Good resting pools and moderate gravel.

Factors Limiting Fish Production Punchbowl falls which has an adequate ladder.

#### KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
7-25-63	Six miles above the mouth	-	-	63		OSGC
8-27-63	U.S.G.S. gage	10:15 AM	67	51		OSGC

Remarks The river is closed to all angling except from the mouth up to within 200 feet of the Punchbowl falls.

Most summer steelhead of the Hood River system enter West Fork.

Total upstream fish counts have been made at a trap in Punchbowl Falls ladder since April 1962 (Table 18).

Stream Elk Creek Tributary to West Fork Hood R. County Hood River  
Stream Location Enters West Fork at river mile 14.4 Stream Miles 4.0

FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Unknown	Unknown	Low
Ct		X	"	"	
St		X	"	"	

Other Fish Present Cot Suspected D

Upper Limit of Anadromous Fish No known barriers. Size of stream would be a limiting factor.

Spawning Potential Unsurveyed.

Factors Limiting Fish Production

KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
8-29-63	Mouth	10:00 AM	70	52	5	OSGC

Remarks Small stream with little potential (known) for anadromous fish.  
Has a population of native rainbow.  
Cool summer temperatures.



Stream Green Point Creek Tributary to West Fk. Hood R. County Hood River

Stream Location Enters West Fk. at river mile 1.4 Stream Miles 5.25

FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Mod.-High		Moderate
Ct		X			
St	X		Low		Low

Other Fish Present Cot Suspected D, L

Upper Limit of Anadromous Fish Unsurveyed

Spawning Potential Unsurveyed

Factors Limiting Fish Production Irrigation diversions.

KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
8-27-63	200 yds. above mouth	10:00 AM	65	54	8.2	OSGC

Remarks

Stream Lake Branch Tributary to West Fork Hood R. County Hood River  
 Stream Location Enters West Fork at river mile 5.6 Stream Miles 11

#### FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Moderate		Closed to sawtooth spur crossing. Low use above this point.
Br	X		Low		
K	X		Low		
St	X		Mod.-High		
EB	X		Low		

Other Fish Present Cot Suspected SS, D, L

Upper Limit of Anadromous Fish At approximately the 6.25-mile point a series of impassable log jams begins.

Spawning Potential Moderate to high. Good resting pools and gravel for steelhead in the lower eight miles of the stream.

Factors Limiting Fish Production Logging debris.

#### KNOWN HIGH TEMPERATURES AND LOW FLOWS

Date	Location	Time	Temp. in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
7-25-63	2.25 miles above mouth.	-	-	62		OSGC
8-27-63	Mouth	11:40 AM	68	51	39	OSGC

Remarks The stream is closed to all angling up to the sawtooth spur which is approximately 6 miles from the mouth.

Lower 6 miles are stocked heavily with hatchery steelhead.

Stream McGee Creek Tributary to West Fk. Hood R. County Hood River

Stream Location Enters West Fk. at river mile 14.4 Stream Miles 5.0

#### FISH SPECIES DATA

Species	Present	Presence Suspected	Relative Abundance	Present Use of Available Gravel	Degree of Angler Use
Rb	X		Moderate	Unknown	Low-Mod.
Ct		X			
St		X			

Other Fish Present Cot Suspected D

Upper Limit of Anadromous Fish No known barriers. Size of stream would be a limiting factor.

Spawning Potential Unsurveyed

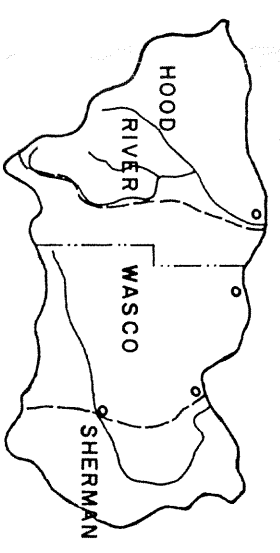
Factors Limiting Fish Production

#### KNOWN HIGH TEMPERATURES AND LOW FLOWS

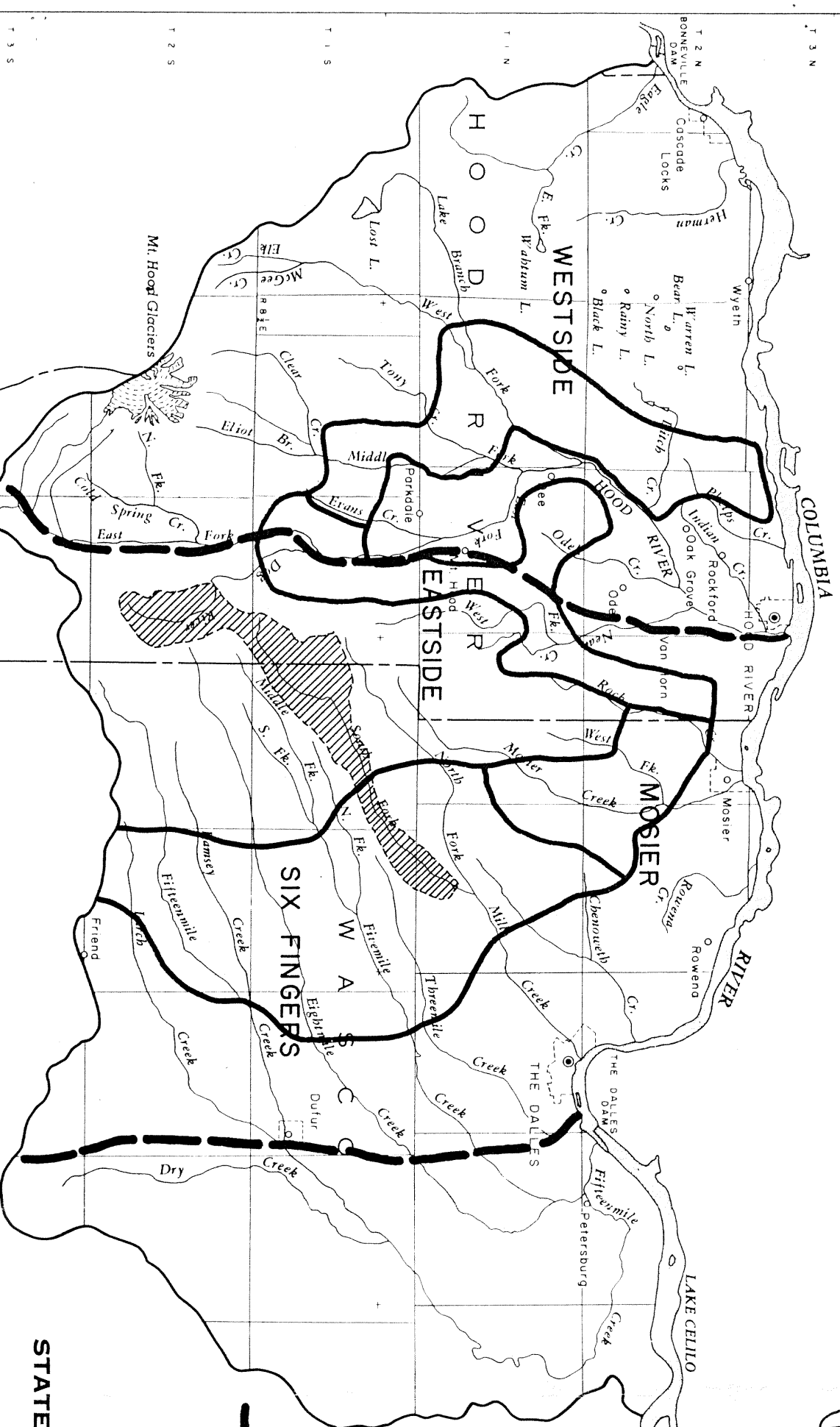
Date	Location	Time	Temp. in °F.		Est. Flow in c.f.s.	Source
			Air	Water		
8-29-63	Mouth	10:00 AM	70	48	11	OSGC

Remarks Small stream with little known potential for anadronous fish. Has a population of native rainbow.

Cool summer temperatures.



Big Game Management Units



**LEGEND**  
 Dales City Watershed  
 (Closed to all public access)

Game Management Unit Boundary

Figure 9.

STATE WATER RESOURCES BOARD

HOOD BASIN

DEER WINTER RANGES  
 BIG GAME MANAGEMENT UNITS  
 MAP NO. 4.4

- LEGEND**
- Known steelhead distribution
  - ..... Suspected steelhead distribution
  - Diversion
  - x Active screen installation

**SCREEN NAMES**

1. Powderdale
2. Farmers Irrigation Dist.
3. Upper Neal Cr.
4. Dee Flat
5. East Fk. Irrigation Dist.
6. Mt. Hood Irrigation Dist.
7. Evans Cr. #2
8. Evans Cr. #3
9. Evans Cr. #1
10. Ingel's #1
11. Sigman's
12. Brown's Lower
13. Brown's Upper
14. Galligan
15. Lindhorst
16. Abnet

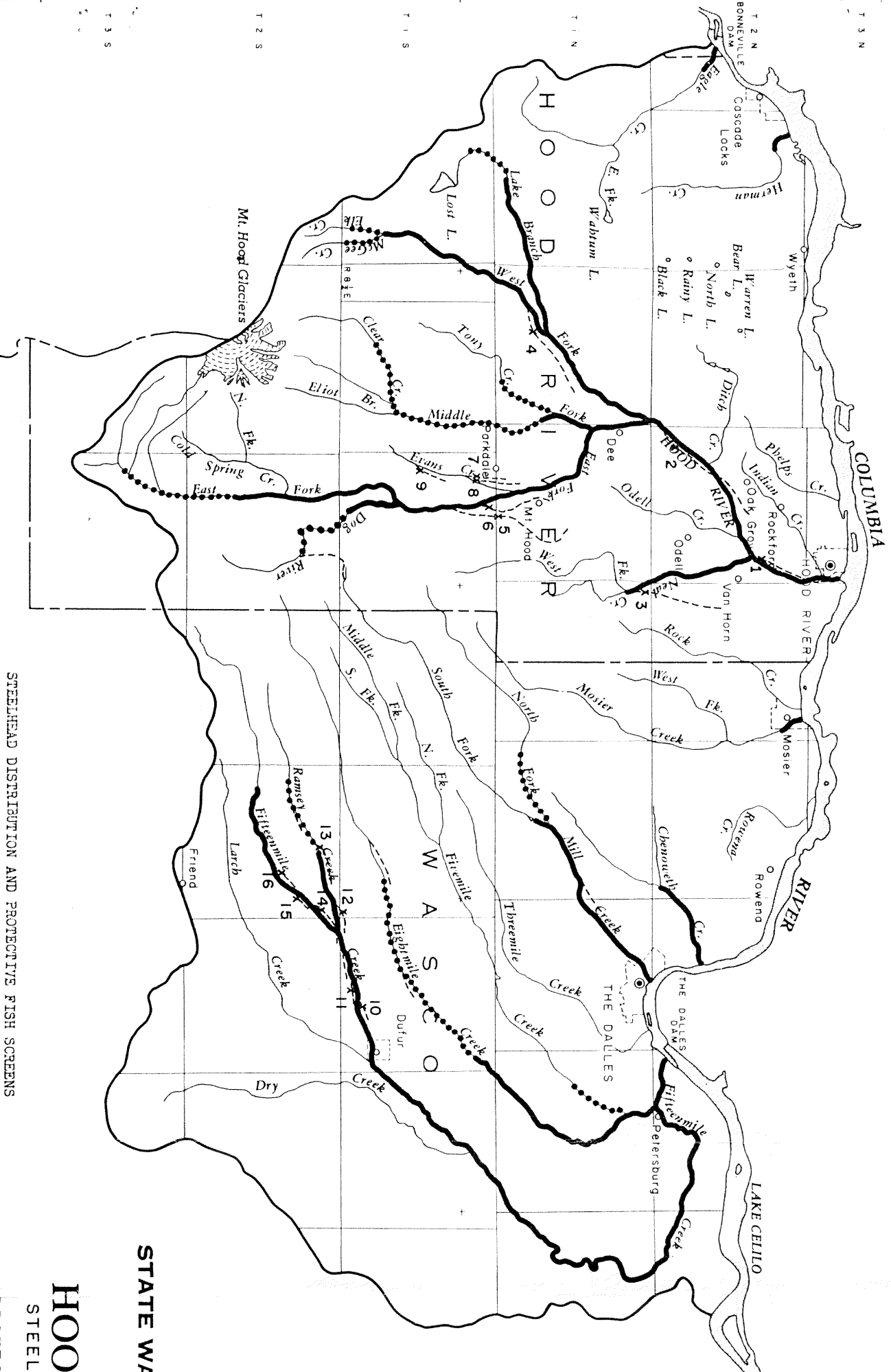


FIGURE 1.

**STATE WATER RESOURCES BOARD**

**HOOD BASIN**

STEELHEAD DISTRIBUTION AND PROTECTIVE FISH SCREENS  
and  
PROTECTIVE FISH SCREENS  
MAP NO. 4.4