

**B** OREGON STATE  
GAME COMMISSION  
**BULLETIN**

MARCH 1970

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Volume 25, Number 3  
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**The Cover**

One of the fish ladders at Bonneville Dam. As originally designed, the dam did not have these ladders and even today not all fish are able to negotiate the ladders available.  
Photo by Harold Smith

**HUNTER SAFETY  
TRAINING PROGRAM**

<b>Instructors Approved</b>	
Month of January .....	13
Total to Date .....	3,841
<b>Students Trained</b>	
Month of January .....	469
Total to Date .....	150,000
<b>Total Firearms Casualties Reported in 1969</b>	
Fatal .....	6
Nonfatal .....	61
<b>Firearms Casualties Reported in 1970</b>	
Fatal .....	0
Nonfatal .....	1

**Seen any wildlife lately?**



**National Wildlife Week March 15-21**

"Seen Any Wildlife Lately?" at first sounds like a simple-minded question, but in context with today's problems, it's loaded. If you live out in the country (which most Americans don't), chances are you can say, "Sure. Just this morning I saw . . ." and start naming animals. If you live in a model city or one of the better-planned suburbs, you may have seen a variety of birds, some squirrels, and maybe a raccoon or a hawk; or luckier yet, you may have unpolluted water nearby where you caught some fish last weekend.

Unfortunately, if you are like the average American, the place where you live has had too much "progress" for any of this to be possible. Pigeons, sparrows, and rats are wild, after a fashion, but they are about all that's left in the polluted air and in and around the filthy water and miles of concrete most Americans call home. "Seen Any Wildlife Lately?" It's a good question, because wildlife is a measure of the quality of man's environment.

Who needs wildlife? In the sense that many wild creatures are a step ahead of us in their sensitivity to polluted air and water, chemical pesticides, and the absence of naturalness—in essence an indicator of environmental quality—we all need wildlife for our survival. For when these other creatures are gone, what's left is a squalid environment for us.

Americans are belatedly awakening to the dangers of their self-induced

blanket of poisonous gases and garbage heaps, pesticide-infested surroundings, sewage-choked waters and the sterility of paved-over landscapes. We could have recognized the dangers sooner had we paid attention to the warning signals — that fewer birds were around as the air got foul, fewer squirrels as the greenery was paved over, and no trout, bass or shrimp as waters became open sewers. "Seen Any Wildlife Lately?"

Many places are so crowded with people, vehicles, and concrete that it would be silly to think raccoons or squirrels or deer could ever survive there again. But if we act soon enough, it is possible that air and water pollution will eventually be controlled so that birds and fish are once again abundant even in and around the city. Future highways, cities, jetports, and shopping centers can be planned and built without pollution and with a diversity of trees and green spaces. We need all of these things and we need wildlife. The important thing is that we can have them, if we insist on it. Man's true progress will be measured by the ultimate good he has done for future generations. The presence of wildlife is certainly one way of measuring it.

National Wildlife Week, March 15-21, sponsored by the National Wildlife Federation and its 49 state affiliates, asks, "Seen Any Wildlife Lately?" The answers are vitally important, because abundant wildlife is more than America's heritage; it's our key to survival.

# THE DAMMED COLUMBIA

by Robert C. Sayre  
Liaison Staff Biologist, Fishery Division

The Columbia River watershed covers an area of 259,000 square miles. Streams feeding the Columbia come from Oregon, Washington, Idaho, Nevada, Wyoming, Montana, and Canada. This river once supported the largest runs of chinook salmon in the world and large numbers of steelhead trout, chum, sockeye, and coho salmon were also present in the rivers of the basin.

About one-half of the Columbia system is now isolated from salmon and steelhead production because of hydroelectric, flood control, or irrigation dams. There are more than 100 dams built or authorized in the basin now and more are planned.

**Bonneville Dam** was completed in 1938 and did not include fish ladders. A temporary ladder was installed and was eventually replaced with one of a

more workable design. Even today the Bonneville fish ladders, and other ladders over dams on the Columbia, cannot be negotiated by all fish.

**Grand Coulee Dam**, completed in 1942, was the second large dam on the Columbia River. No fish ladders were constructed and as a result the north third of the basin was isolated from natural production of steelhead and salmon.

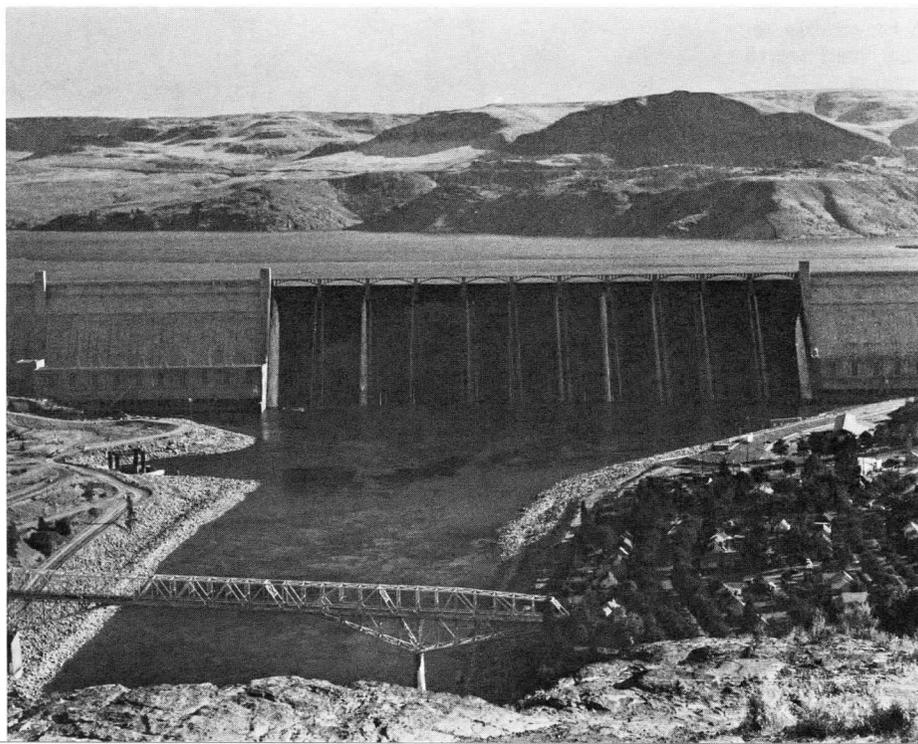
Dam construction throughout the basin continued at a rapid pace and many upriver irrigation projects provided no fish ladders. In 1958 the construction of **Brownlee Dam** permanently blocked the natural migration of salmon and steelhead to parts of Oregon and Idaho. Before fish biologists could correct one problem, several other problems were presented or compounded with more dams.

The quiet water "lakes" formed by dams are not desirable habitat for migrating salmon and steelhead. Adult fish swimming upstream to their spawning grounds and young fish swimming downstream to the ocean to mature must pass through these impoundments. In these "lakes" without water current, many of the fish are lost or die before reaching their destination.

The dams cause the river to spread out. As a result, more water area is exposed to the sun and the water is warmer than in the past. The "lake" water traps the nutrients from watershed erosion and from agricultural, municipal, and industrial pollution. These nutrients fertilize the water and increase production of algae, thus reducing water quality. Excessive water

(continued next page)

About half of the Columbia River system is now isolated from salmon and steelhead production by dams. Grand Coulee created a complete fish block on the main stem of the river.



# THE DAMMED COLUMBIA

(continued)

spill at dams has created a supersaturation of dissolved nitrogen. This causes a condition in fish similar to the bends in man and some fish die from nitrogen bubbles in their bodies. Many **downstream** migrants are destroyed in the turbines of hydroelectric dams. No successful means of eliminating this loss have been found.

Downstream from Grand Coulee Dam there are about 70 miles of free-flowing Columbia River remaining. Downstream from Hells Canyon Dam there are only 100 miles of the Snake River in a free-flowing condition. The river can no longer purify its water by tumbling rapids and filtering through gravel beds.

Columbia River steelhead and salmon are rugged animals. They must be to survive all the problems man has created. We may soon reach the point when these fish can no longer surmount all of the obstacles presented by man and his civilization.

Good runs of steelhead and salmon do continue to enter the Columbia River. These fish are mainly from lower and middle tributaries. There are also 22 fish hatcheries in the Columbia River Basin now devoted to the production of fall chinook, coho, spring chinook, and steelhead trout.

Early estimates of fish harvest from Columbia River stocks in 1969 indicate an excess of 27,000,000 pounds or over 2,000,000 salmon and over 1,000,000 pounds or about 126,000 steelhead. These were harvested from both the ocean and the river. The figures are gross and will be changed when all catch data are in. This renewable resource is a valuable asset well worth saving for future generations.

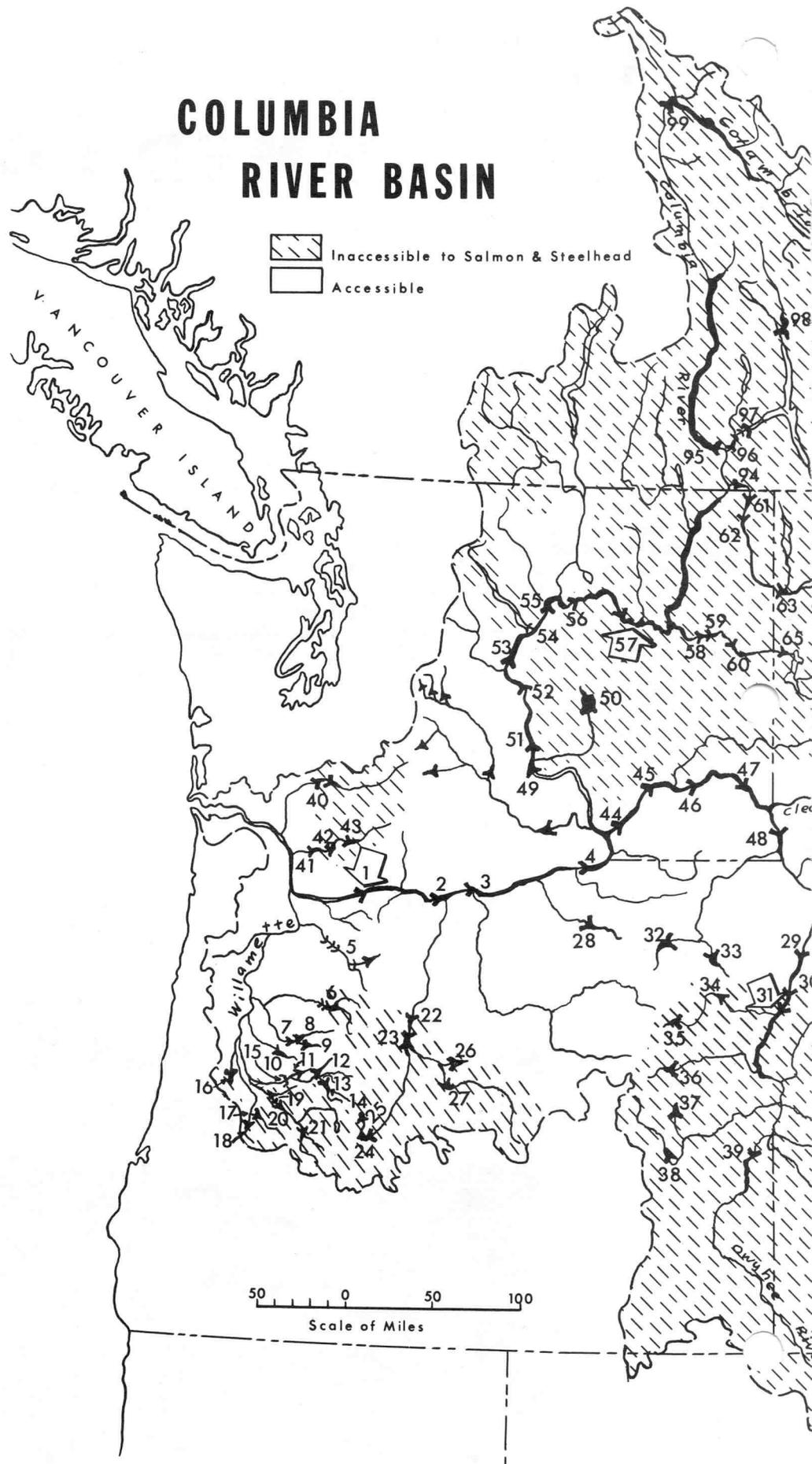
Commercial and sport interests are working on the various salmon races in the ocean from northern California to Alaska. The ocean salmon catch ratio is usually about 80 percent commercial and 20 percent sport when all races of fish are considered.

In the Columbia River proper the 1969 commercial catch was 297,500 chinook salmon, 194,000 coho salmon, and 46,400 steelhead. Sport harvest for this year was about 60,000 chinook, around 10,000 coho salmon, and the steelhead catch may approach 80,000 fish when all catch data are available from Oregon, Washington, and Idaho.

These figures may appear to indicate the Columbia River fish runs

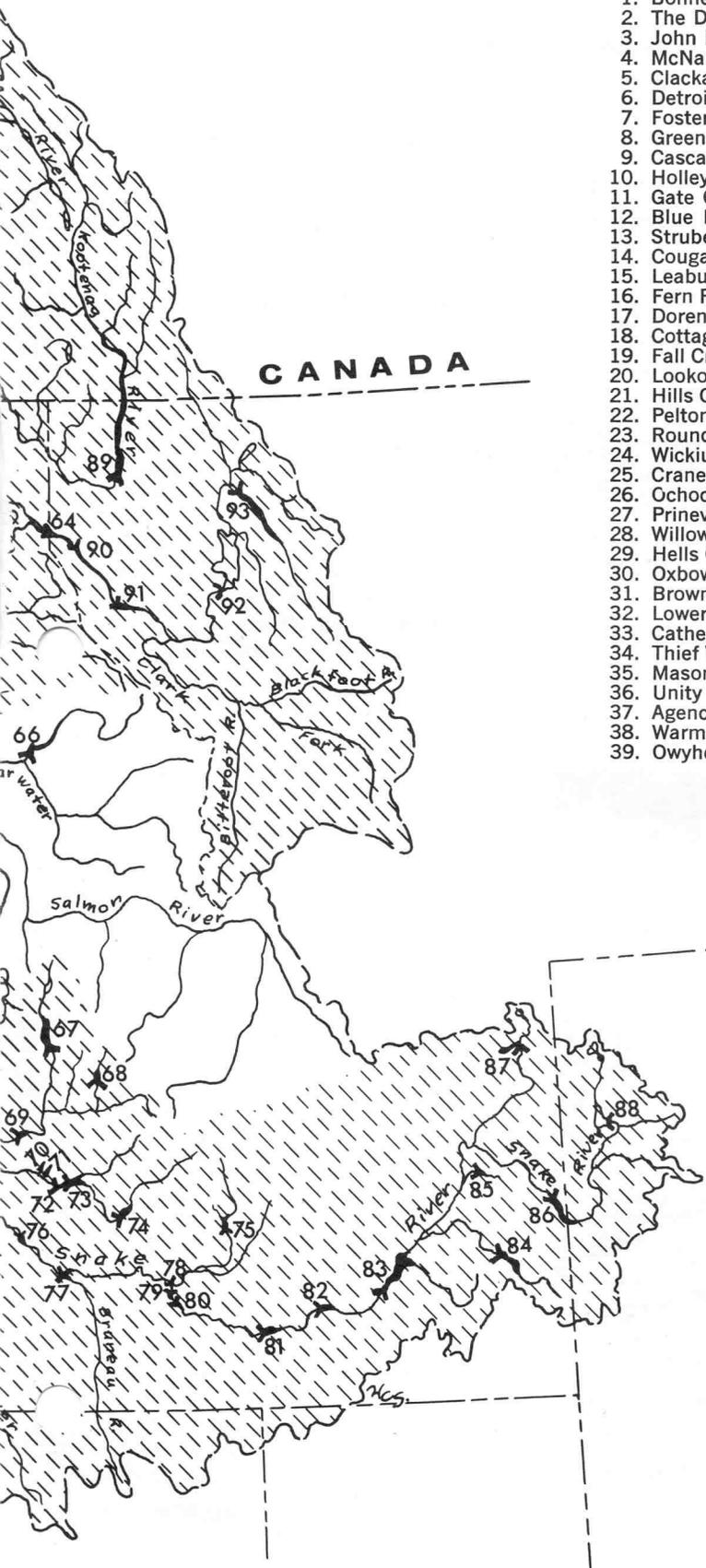
(continued page 6)

## COLUMBIA RIVER BASIN



# COLUMBIA SYSTEM DAMS

(\* indicates authorized or licensed)



## Oregon

1. Bonneville — 1938
2. The Dalles
3. John Day
4. McNary
5. Clackamas Projects
6. Detroit
7. Foster
8. Green Peter
9. Cascadia \*
10. Holley \*
11. Gate Creek \*
12. Blue River
13. Strube \*
14. Cougar
15. Leaburg
16. Fern Ridge
17. Dorena
18. Cottage Grove
19. Fall Creek
20. Lookout Point
21. Hills Creek
22. Pelton
23. Round Butte
24. Wickiup
25. Crane Prairie
26. Ochoco
27. Prineville
28. Willow Creek \*
29. Hells Canyon
30. Oxbow
31. Brownlee — 1958
32. Lower Grand Ronde \*
33. Catherine Creek \*
34. Thief Valley
35. Mason
36. Unity
37. Agency
38. Warm Springs
39. Owyhee

## Washington

40. Mossyrock - Mayfield
41. Merwin
42. Yale
43. Swift
44. Ice Harbor
45. Lower Monumental
46. Little Goose
47. Lower Granite
48. Asotin \*
49. Priest Rapids
50. O'Sullivan
51. Wanapum
52. Rock Island
53. Rocky Reach
54. Chelan
55. Wells
56. Chief Joseph
57. Grand Coulee — 1942
58. Little Falls
59. Long Lake
60. Nine Mile Development
61. Boundary
62. Box Canyon

## Idaho

63. Albeni Falls
64. Cabinet Gorge
65. Post Falls
66. Dworshak
67. Cascade
68. Deadwood
69. Black Canyon
70. Stuart Gulch \*
71. Cottonwood \*
72. Lucky Peak
73. Arrowrock
74. Anderson
75. Magic
76. Swan Falls
77. C. J. Strike
78. Bliss
79. Lower Salmon
80. Upper Salmon
81. Milner
82. Minidoka
83. American Falls
84. Blackfoot Marsh
85. Ririe
86. Palisades
87. Island Park

## Wyoming

88. Jackson Lake

## Montana

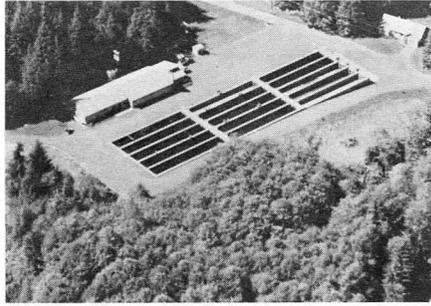
89. Libby
90. Noxon Rapids
91. Thompson Falls
92. Kerr
93. Hungry Horse

## Canada

94. Waneta
95. Arrow Lakes
96. Brilliant
97. Corra Linn
98. Duncan Lake
99. Mica

# THE DAMMED COLUMBIA

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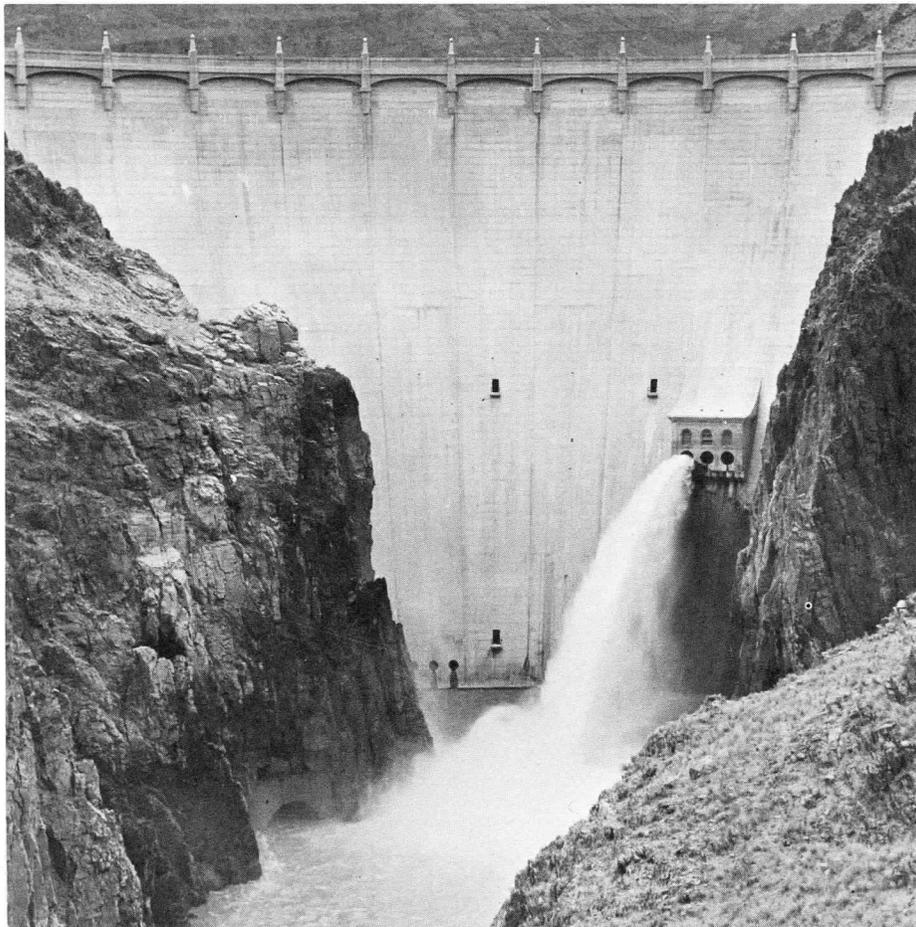


22 hatcheries in the Columbia Basin are devoted to production of salmon and steelhead.



Commercial and sport fishermen work on the Columbia salmon and steelhead runs in the ocean from northern California to Alaska and in the river proper.

High dams such as Owyhee are not laddered and stop all fish passage upstream.



(continued from page 4)

have no problems. **This is not true.** Because of habitat damage we are near the point of losing the remaining upriver production of steelhead and salmon in Oregon, Washington, and Idaho. There are approximately 100,000 salmon and 60,000 or more steelhead in the upriver runs. The present value of the fish upstream from McNary Dam is estimated to be 18 million dollars annually. Upriver production is contributing to the ocean and the lower river harvest of salmon and steelhead. The lower river fish populations are threatened also but not to the extent that the upriver runs are.

Why are the Columbia River salmon and steelhead threatened with annihilation? They are threatened because passage at dams remains a problem — because consumptive use of water is becoming more critical — and because pollution of the waters and damage to the watersheds continue.

Added to these spoilers of the environment is the potential of 18 thermal power plants in the Columbia River Basin. The Fish and Wildlife Service has calculated that uncontrolled release of hot water from these power plants could raise the Columbia River summer water temperature to 100 degrees at St. Helens.

All forms of pollution, including thermal pollution, can be controlled. If we are to retain a suitable environment for fish, as well as for man, damage to the habitat must be controlled. This control must be from the top of the mountains to the ocean. Time is of essence. The public must act to prevent further damage to the habitat if we are to perpetuate and improve this renewable fishery resource for future generations.

Valuable knowledge has been gained from mistakes of the past. **WITH CONTROLS EXERCISED IN THE FUTURE TO PROTECT THE ENVIRONMENT,** fishery managers are on the threshold of a tremendous improvement in the size of the fishery resource.

It may not be possible to re-establish steelhead and salmon in all portions of the basin. It will be possible, however, to increase production in the remaining lower half of the basin through intensive management. Fishery managers have the knowledge necessary to produce top quality steelhead and salmon in hatcheries and in natural streams and to exceed natural fish production of the past. Perpetuation of greater numbers of steelhead and salmon for the enjoyment of future generations is within our reach.

## COMMISSION BUYS JOHNSON TRACT

Waterfowl hunters should have a new hunting area on Sauvie Island next fall as the result of Game Commission action at its February meeting in approving the purchase of the George A. Johnson estate located on the east side of the island between Sturgeon Lake and Reeder Road.

Purchase price of the 332-acre tract is \$249,885. Funds will be provided by the Port of Portland as partial replacement for Government Island which was recently released to the Port by the Commission.

Mrs. Alice Kampfer, executrix for the Johnson estate, provided the purchase option. The Johnsons will retain Johnson Beach east of Reeder Road and a homesite of about 3½ acres.

The purchase will block up the public shooting grounds on the east side of Sauvie Island except for two parcels, one lying adjacent to the Johnson tract on the south and the second farther to the north in the vicinity of Walton Beach.

The Game Commission's Sauvie Island Game Management Area is one of the most popular recreational areas in the state, not only for hunting and fishing but for other uses such as bird watching, picnicking, boating, water skiing, and other forms of outdoor use. A recent survey showed that more than 215,000 man-days of recreation were recorded on the management area in a single year.

## Research Pays Off

Fishery management techniques based on findings of the Game Commission Research Division are giving anglers more for their money.

The researchers have found that the release of hatchery coastal cutthroat trout at the right size and correct time will provide a 60 percent return of these fish to the angler's creel. A percentage of the released fish are caught in the spring shortly after their release. The remaining fish enter into the ocean during the summer.

In late summer and fall the cutthroat return to the stream from the ocean and a rather large number of them are then caught by anglers.

In years past, catchable-sized rainbow trout were released in the coastal streams. Few of these fish were caught. The desire to improve the coastal stream success and to bring down the cost of the hatchery fish prompted the research project.

## Big Game Hearings

Public hearings to discuss the 1970 big game regulations will be held at the Portland office of the Game Commission on May 23 and June 6. The tentative rules will be set following the first hearing and then finalized after the June meet.

Opening dates were set earlier this year. General deer season will open October 3; Rocky Mountain elk season, October 31; and the Roosevelt elk season, November 14. At the upcoming hearings the season lengths, number of permits to be issued, and other details will be discussed.

The Saturday hearings will begin at 10 a.m. at the Commission offices at Southwest 17th and Alder in Portland.

## CRAPPIE GROW BIG AT OWYHEE

Unless some unforeseen catastrophe occurs between now and spring, Oregon anglers are expected to enjoy a fine season this coming summer at Owyhee Reservoir for some of the largest black crappie this impoundment has produced for some time.

Larry Bisbee, Game Commission fishery biologist for the Malheur district, made this report following his annual fish population inventory at Owyhee.

Bisbee advised that the reservoir contains an outstanding population of black crappie which will be five-plus years of age this coming summer. At the time of his mid-winter survey these crappie measured from 8 to 9½ inches fork length and should be somewhat larger by summer. Because of their age, this group of fish is expected to die out and gradually disappear during the summer season. However, Bisbee said that they should provide an excellent sport fishery during April through June, the peak of the spring angling period.

The Malheur biologist said that very few four-year-old crappie are present in the impoundment but anglers are in for a pleasant surprise at the numbers and growth of crappie three years of age. At mid-winter this age group ranged from 6 inches to over 8 inches fork length. Bisbee expects them to be almost as large as the five-year-olds this coming summer. He also noted that if the carryover of three-year-olds is good next winter, they should be of exceptional size as four-year-old fish in the spring of 1971.

Bisbee's population inventory shows the best carryover of large crappie — both age groups — that the reservoir has produced in the past five years.

## Waterfowl Census Complete

More ducks and geese wintered in Oregon this year than have been observed since 1966, according to the tally of waterfowl made in January at all major marshland areas of the state by Game Commission and U. S. Fish and Wildlife Service personnel.

Chet Kebbe, chief of waterfowl management who coordinated Commission operations, said that the head count of ducks and geese was conducted by 22 biologists of the Commission and seven biologists of the Fish and Wildlife Service, who traveled about 4,900 miles by aircraft, vehicle, boat, and foot to make the survey.

The final report shows that just over 442,800 waterfowl of all species wintered in the state, well above the 301,500 birds recorded in January 1969. The tally shows 311,000 ducks, almost 72,300 geese, 56,500 coots, and the remainder swans and miscellaneous species.

Also of interest this year was the large number of eagles, both bald and golden, observed by the wildlife scientists. The eagle census is part of the annual bird inventory and is taken simultaneously with the waterfowl census.

Eagles wintering in the state totaled 167 of which 102 were bald eagles and 65 golden. Last year 95 eagles were observed — 61 bald and 34 golden. The eagle count is not conducted statewide but only on waterfowl inventory routes.

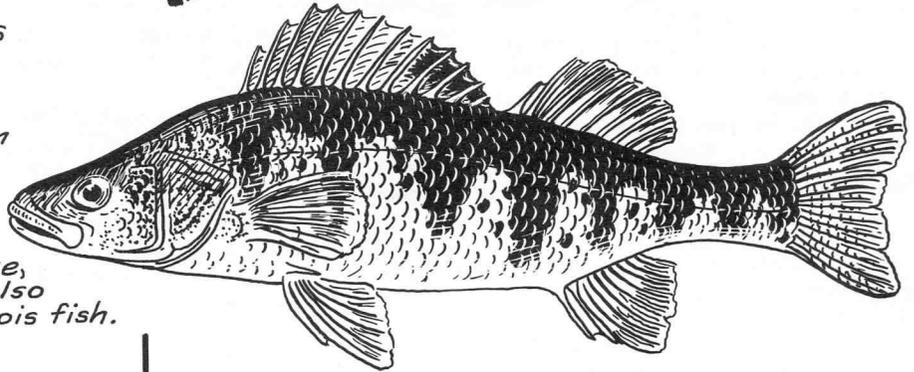
A substantial increase was noted in the dabbling duck group such as mallards, pintails, widgeon, and teal. Wood ducks also showed a sharp increase in numbers, with most of these colorful birds found wintering along waterways of the Willamette Valley. Canada goose numbers also increased substantially. Snow geese and white-fronts winter mainly in California and are not expected to be found in any numbers in Oregon at the time of the inventory.

Seven harlequin ducks and two old squaw ducks were tallied in the inventory, birds which normally are not found wintering in the state. These birds of the sea coast were observed along the coast in Clatsop County. A few harlequins nest in Oregon as does an occasional old squaw.

# Yellow Perch

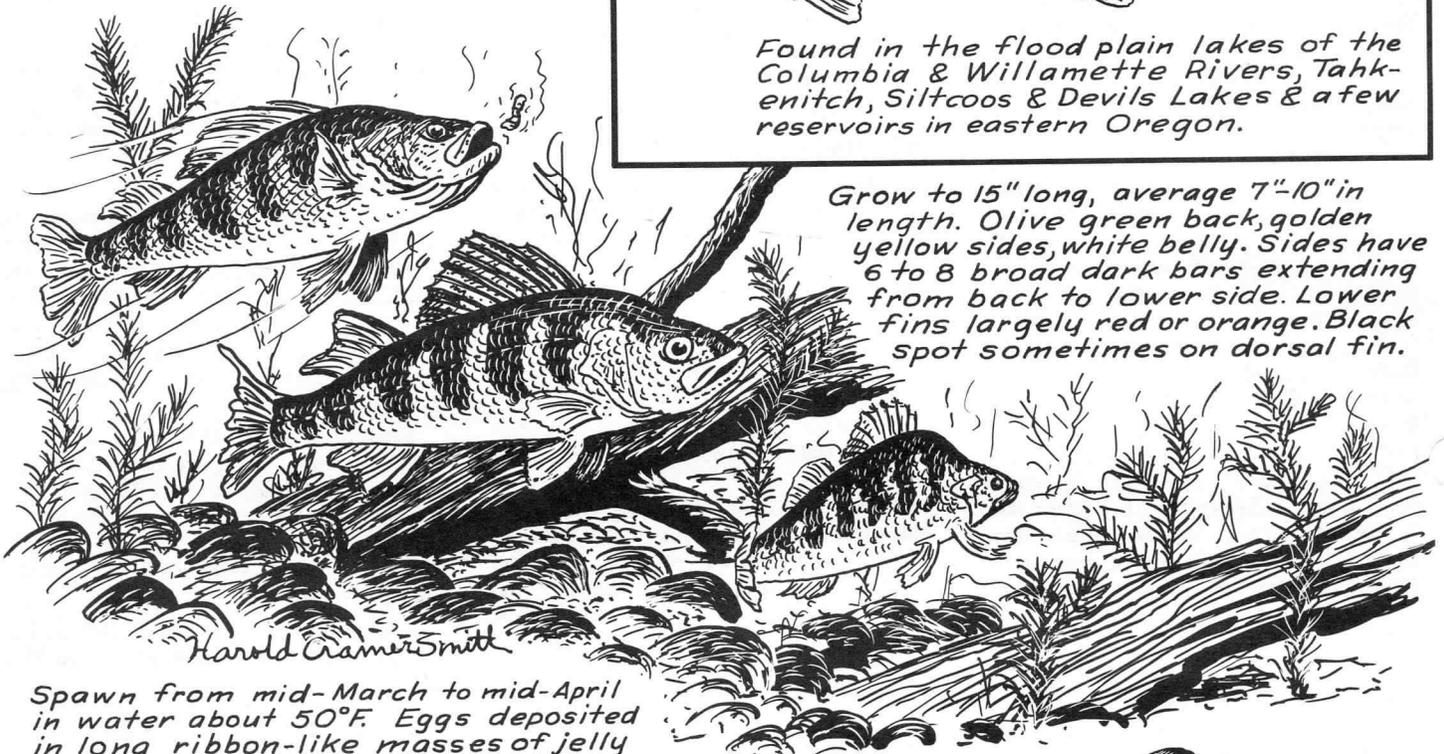
*Perca flavescens*

Introduced into Oregon in 1894, first planted near Salem in the Willamette system. Another introduction came to the Columbia River by way of Silver Lake, Wash. & the Toutle River also in 1894. These were Illinois fish.

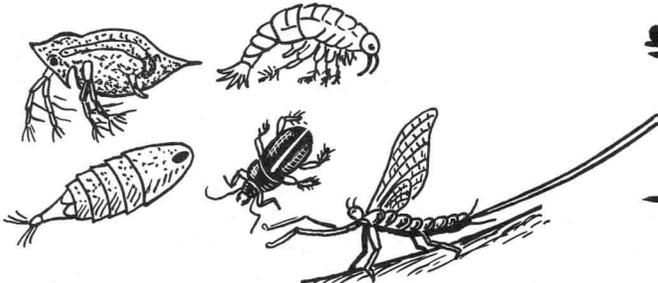


Found in the flood plain lakes of the Columbia & Willamette Rivers, Tahkenitch, Siltcoos & Devils Lakes & a few reservoirs in eastern Oregon.

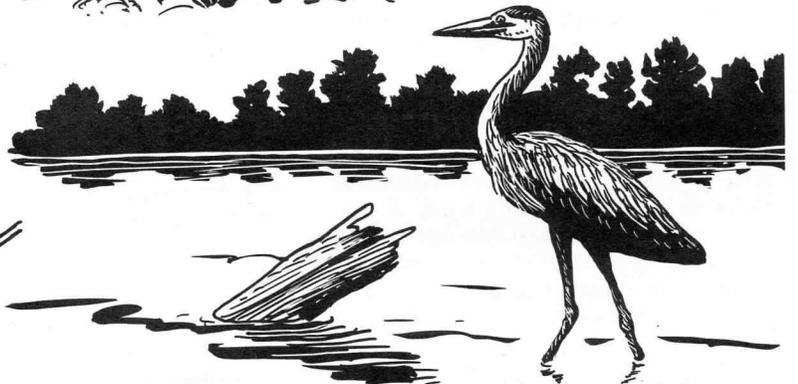
Grow to 15" long, average 7"-10" in length. Olive green back, golden yellow sides, white belly. Sides have 6 to 8 broad dark bars extending from back to lower side. Lower fins largely red or orange. Black spot sometimes on dorsal fin.



Spawn from mid-March to mid-April in water about 50°F. Eggs deposited in long ribbon-like masses of jelly on submerged vegetation, brush, or other material. Eggs 1/3" in diameter, from 10,000 to 40,000 may be laid.



Food consists of aquatic insects, crustaceans & small fish



Fish eating birds and larger fish prey on the perch.



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