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Unusual Occurrence of Pink Salmon (Oncorhynchus gorbuscha) in the Snake River of Southeastern Washington

Abstract

The first positively identified adult pink salmon *(Oncorhynchus gorbuscha)* is reported for the Snake River of Southeastern Washington State. The sightings were in the Tucannon River and at Little Goose and Lower Granite Dams, approximately 625 to 694 km from the Pacific Ocean. Spent female pink salmon carcasses indicated that these fish can migrate long distances and arrive in time to spawn.

Pink salmon *(Oncorhynchus gorbuscha)* of northwestern North America commonly spawn in relatively short coastal streams. In large rivers, they seldom penetrate more than 160 km upstream to spawn (Aro and Shepard, 1967; Atkinson, Rose, and Duncan, 1967; and McPhail and Lindsey, 1970). Neave (1966), however, reported that a substantial segment of the Fraser River pink salmon run travels at least as far upstream as the South Thompson River, about 560 km from the sea.

During the fall of 1975 we observed pink salmon at several locations on the Snake River (a major tributary of the Columbia River) in southeastern Washington State. The most upstream observation was made at river kilometer 694 (Lower Granite Dam), measured from the mouth of the Columbia River.

Although we believe these to be the first sightings of pink salmon in the Snake River drainage, pinks have been counted in the fish ladder at Bonneville Dam on the lower Columbia River as early as 1941 (personal communication with Mr. Ray Oliger, U.S. Army Corps of Engineers, Walla Walla, Washington). At most dams on the Columbia and Snake Rivers, counting stations are operated at some point on the fishway. Salmonids pass over a "counting board" and the counter identifies and tallies a fish instantaneously. Since pink salmon are rare upstream from Bonneville Dam, fish counters are not expected to recognize an incidental run. Therefore, when a pink escapement larger than expected occurred in 1975, some dam counts showed pinks, whereas others did not. Probably the total run was greater than recorded. At any rate, counts in 1975 were: Bonneville Dam—309; The Dalles Dam—0; John Day Dam—45; McNary Dam —0; Ice Harbor Dam—0; Lower Monumental Dam—0; Little Goose Dam—12; and Lower Granite Dam—0. We made an independent observation at Lower Granite Dam (one fish).

The National Marine Fisheries Service (NMFS) operates trapping facilities for adult salmon and steelhead trout *(Salmo gairdneri)* at Little Goose and Lower Granite

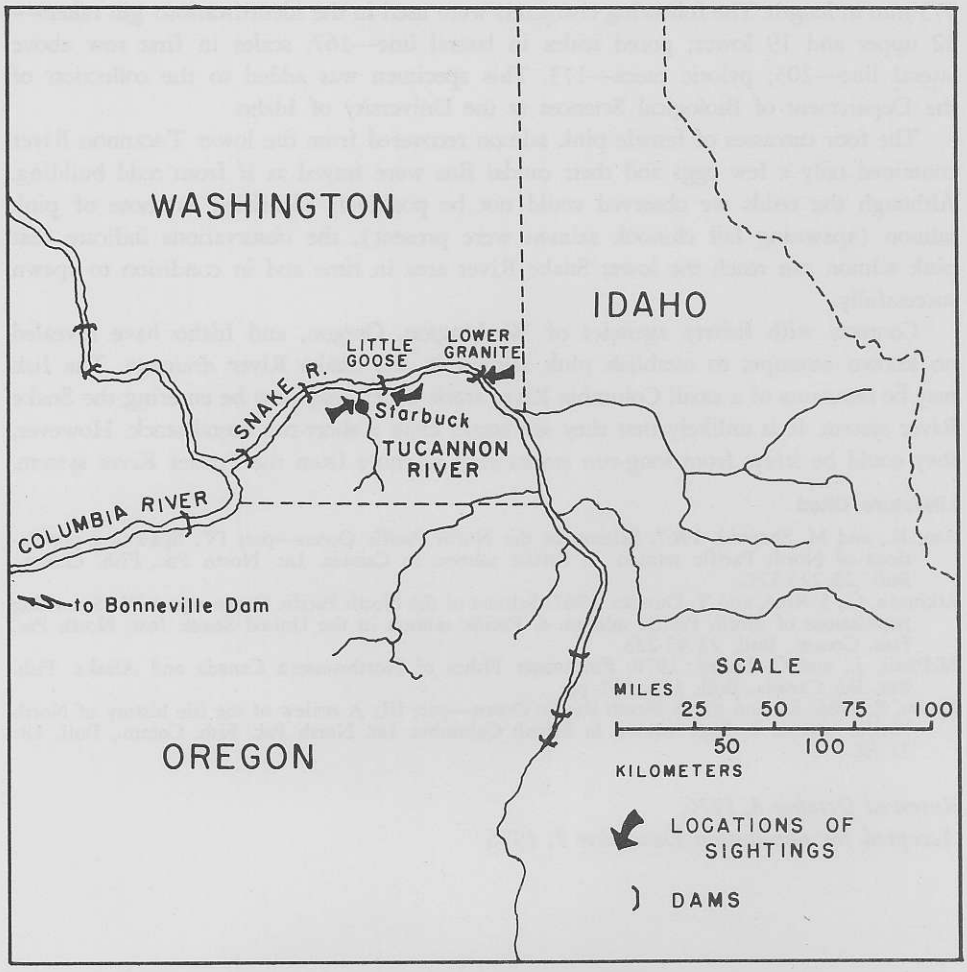

Figure 1. The lower Snake River and locations where pink salmon were observed.

Dams on the lower Snake River (Fig. 1). On September 24, 1975, a male pink salmon 559 mm long weighing 1.6 kg was captured at Little Goose Dam. The external characteristics we used for identification included: a large hump with a very thin keel; extremely small scales; spots on both lobes of the caudal fin, spots larger than the pupil of the eye; yellow and pink coloration below the lateral line. In early October, a female pink salmon was captured at Little Goose Dam and a male pink salmon was captured at Lower Granite Dam 60 km upstream of Little Goose Dam.

During the fall of 1975, routine spawning ground surveys were made for fall chinook salmon *(Oncorhynchus tshawytscha)* spawning in the lower Tucannon River, a small tributary of the Snake River near Starbuck, Washington (about 625 km from the Pacific Ocean). Five pink salmon carcasses were recovered on these surveys: one on October 18, three on October 25, and one on November 1. One of the carcasses was sent to Dr. Richard L. Wallace, Associate Professor of Zoology at the University of Idaho, for species verification. He determined that it was a spent female pink salmon

573 mm in length. The following characters were used in the identification: gill rakers—12 upper and 19 lower; pored scales in lateral line—167; scales in first row above lateral line—203; pyloric caeca—173. This specimen was added to the collection of the Department of Biological Sciences at the University of Idaho.

The four carcasses of female pink salmon recovered from the lower Tucannon River contained only a few eggs and their caudal fins were frayed as if from redd building. Although the redds we observed could not be positively identified as those of pink salmon (spawning fall chinook salmon were present), the observations indicate that pink salmon can reach the lower Snake River area in time and in condition to spawn successfully.

Contacts with fishery agencies of Washington, Oregon, and Idaho have revealed no known attempts to establish pink salmon in the Snake River drainage. The fish may be remnants of a small Columbia River stock which may now be entering the Snake River system. It is unlikely that they are strays from a short-run costal stock. However, they could be strays from long-run stocks such as those from the Frazier River system.

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