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Title

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Permalink

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Journal

Journal of California and Great Basin Anthropology, 2(1)

ISSN

0191-3557

Author

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Publication Date

1980-07-01

Peer reviewed

Fish Remains from Nahas Cave: Archaeological Evidence of Anadromous Fishes in Southwestern Idaho

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The anadromous fish runs of the Snake and Owyhee rivers and their tributaries have provided an important element of interpretations of native subsistence in southwestern Idaho (see Butler 1978:30-31; Pavesic 1978; Swanson 1965). Prior to the development of major water control systems in the Northwest, anadromous fishes migrated as far east in the Snake River as Shoshone Falls, located adjacent to the present city of Twin Falls, Idaho, and into the Owyhee River (Evermann 1896, 1897; see also Steward 1938:165-168). Further accounts suggest that some anadromous fishes found their way into the Bruneau River west of Shoshone Falls (Gilbert and Evermann 1894) and into the Jarbidge River, a primary tributary of the Bruneau, by which they entered Nevada (La Rivers and Trelease 1952:113) (see Fig. 1). Steward (1938:167-168) reported two major spring salmon runs and a fall salmon run of lesser magnitude. The first salmon run, referred to as *tahma agai* or spring salmon, occurred during March or April and probably consisted of the salmon or Steelhead Trout, *Salmo gairdnerii*. While belonging to the family Salmonidae, these fish are not true salmon (see Casteel 1976: 89). A late spring run occurred in May or June and consisted of the Chinook Salmon *Oncorhynchus tshawytscha*, locally named *taza agai* or summer salmon (Steward 1938:167).

The third salmon run occurred in the fall and may have been an additional run of

salmon or, perhaps, salmon trout called *yu:va agai* or fall salmon (Steward 1938:168). It is, however, more probable that these were Chinook Salmon (Fulton 1968). These salmon runs have been considered a regionally important Shoshonean resource equal to other major regional food sources such as pinyon and camas (Pavesic 1978).

In addition to salmon, other species were common throughout the Snake and Owyhee river drainages (see Evermann 1896, 1897). Especially common were members of the sucker family, Catostomidae. Steward (1938: 168) reported that a sucker, called *mugadu*, and a bony fish with wide mouth and yellow stomach, called *ondiawox*, were procured from the Owyhee River. *Ondiawox* was perhaps *Ptychocheilus oregonensis*, the Northern Squawfish, an important member of the minnow family, Cyprinidae (see Evermann 1897:175).

During the summer of 1979, limited archaeological excavations were conducted at Nahas Cave (Plew n.d.b). This site is a small lava tube located on Pole Creek, a secondary tributary of the Owyhee River approximately 60 km. east of Dirty Shame Rockshelter and 150 km. south of Boise, Idaho, in the Owyhee Uplands. A deposit of approximately 1.6 m. of fill was excavated in arbitrary 10-cm. levels within four stratigraphically distinct zones. An occupation spanning the period 5990 B.P. to 260 B.P. is documented (Plew n.d.a).

Eleven fish vertebrae were recovered from flotation samples and were identified by Kenneth W. Gobalet of the Department of Zoology, University of California, Davis. The remains of six individuals of the sucker family, Catostomidae, possibly *Catostomus columbianus*, Bridgelip Sucker, and one individual of the family Cottidae, possibly *Cottus bairdii*, Mottled Sculpin, were tentatively identified. Of greater interest was the positive identification of the remains of three individuals of *Salmo gairdnerii*, the Steelhead Trout. A

fourth individual tentatively identified as *Salmo gairdnerii* may be *Salmo clarkii*, the Cutthroat Trout. Standard length estimates suggest that all individuals were quite large (see Table 1).

Though evidence of fishing equipment has been recovered from southwestern Idaho (see, e.g., Shellbach 1967), the Nahas Cave data, specifically the recovery of the remains of *Salmo gairdnerii*, constitute the first reported archaeological evidence of this important local resource in southwestern Idaho. Remains from Deer Creek Cave, located near the Jarbidge River in Elko County, Nevada, constitute the only existing regional archaeological evidence of anadromous fishes (Follett 1963). The Deer Creek Cave fish remains belong solely to *Oncorhynchus tshawytscha*, the Chinook Salmon. Twenty-four remains from two or more salmon were recovered (Follett 1963:31).

Though the material evidence from Nahas Cave is insufficient to determine the importance of fish to the aboriginal diet, it corroborates the ethnographic record concerning the distribution of the Steelhead Trout. Radiocarbon determinations suggest the probable use of salmonids and non-migratory fishes in southwestern Idaho from ca. 4990 B.P. into the late prehistoric period.

ACKNOWLEDGEMENT

The assistance of Dr. Max Pavesic in preparation of portions of this paper is gratefully acknowledged.

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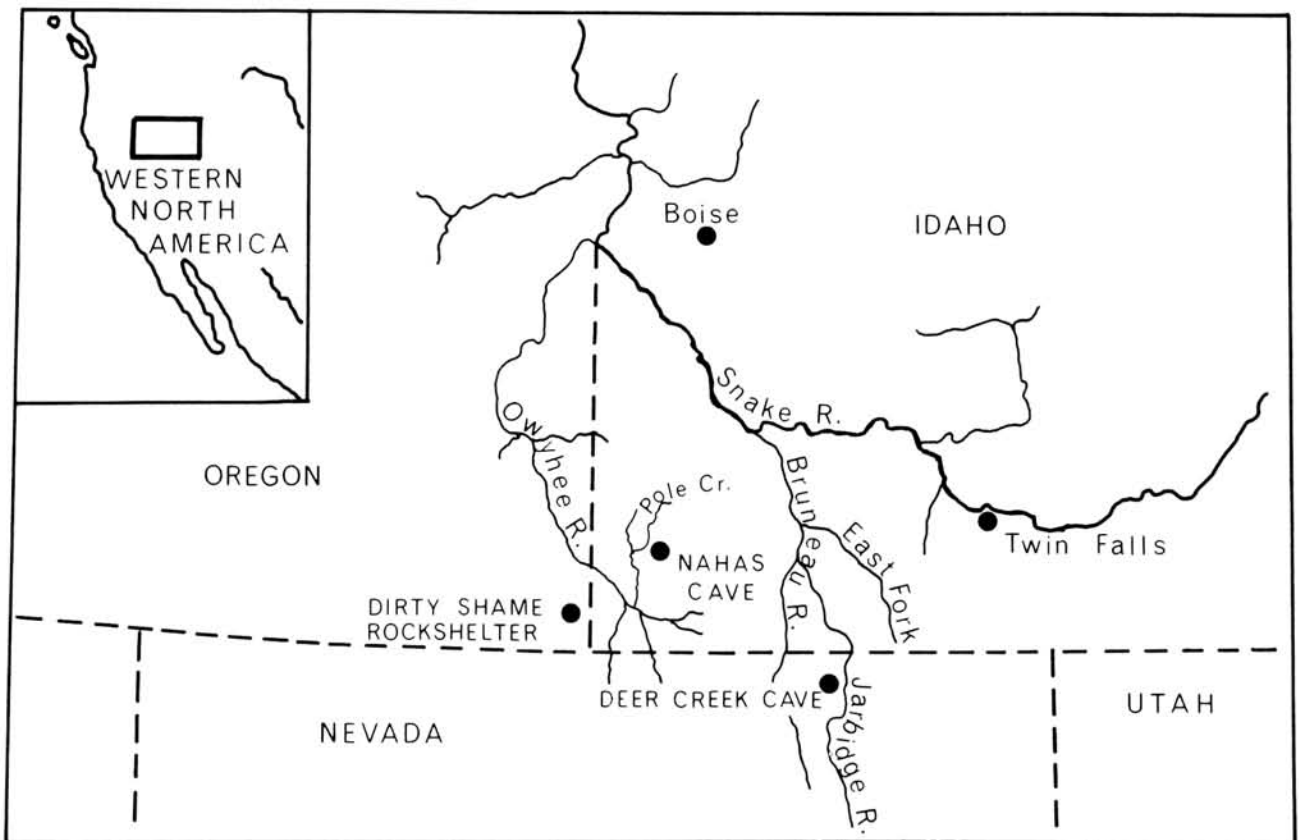


Fig. 1. Map showing the location of Nahas Cave.

Table 1
FISH REMAINS FROM NAHAS CAVE

Species	Standard Length Estimates	Excavation Level	Radiocarbon Dates
<i>Catostomus columbianus</i>	100 mm.	0-10 cm.	
<i>Catostomus columbianus</i>	50 mm.	40-50 cm.	1100 ± 80 B.P. (Tx-3642)**
<i>Catostomus columbianus</i>	120 mm.	60-70 cm.	2990 ± 70 B.P. (Tx-3636)
<i>Catostomus columbianus</i>	50 mm.	70-80 cm.	
<i>Catostomus columbianus</i>	80 mm.	90-100 cm.	
<i>Catostomus columbianus</i>	100 mm.	140-150 cm.*	
<i>Cottus biardii</i>	75 mm.	60-70 cm.	2990 ± 70 B.P. (Tx-3636)
<i>Salmo gairdnerii</i>	900 mm.	20-30 cm.	350 ± 70 B.P. (Tx-3635)
<i>Salmo gairdnerii</i>	800 mm.	20-30 cm.	350 ± 70 B.P. (Tx-3635)
<i>Salmo gairdnerii</i>	100 mm.	50-60 cm.	1410 ± 200 B.P. (Tx-3643)
<i>Salmo gairdnerii</i>	800 mm.	60-70 cm.	2990 ± 70 B.P. (Tx-3636)

*A radiocarbon date of 5990 ± 170 B.P. (Tx-3644) was obtained from the 160-170 cm. level establishing an estimate of ca. 4990 B.P. for the 140-150 cm. level (Plew n.d.b).

**Radiocarbon determinations by Radiocarbon Laboratory, University of Texas at Austin.

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A Reassessment of the Nutritional Value of *Pinus monophylla*

GLENN J. FARRIS

Researchers in the ethnology and archaeology of the Great Basin and the Transverse Ranges of California have dealt at length with the importance of single-leaf piñon (*Pinus monophylla*) nuts¹ in the diet of the Native Americans residing in these areas (cf. Barrows 1900; Bettinger 1976; Dutcher 1893; Steward 1934; Stewart 1942; Thomas 1973; Voegelin 1938; Zigmond 1941). Although this food item is most often dealt with quantitatively (volumetric portion of the diet; amount of nuts obtainable), some have discussed its quality as a nutritional item.

Maurice Zigmond, in his ethnobotanical study of the Great Basin and California Shoshoneans, states:

The outstanding feature of the analysis [of pine nuts] is the indication of the high fat content which, in turn, accounts for the high food value. In the body, both fats and carbohydrates supply energy, but the former constitutes a much more concentrated form of fuel than the latter [Zigmond 1941:30-31].

In this comment he is specifically referring to the standard and most often quoted analysis of *P. monophylla* published by Woods and Merrill in 1899. It indeed shows a remarkably high fat percentage (see Table 1) and so seems comparable to other pine nuts, particularly the New Mexico piñon (*P. edulis*) (see Table 2). The Woods and Merrill error has been perpetuated in recent literature (e.g., Bean 1972:40; Bean and Saubel 1972:104).

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