AJUMAWI FISH TRAPS: HARVESTING AND MANAGING SUCKERS IN THE SPRINGS OF THE PIT RIVER DRAINAGE

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ABSTRACT

A series of stone fish traps have been documented along the north shore of Big Lake in Shasta County. This paper will briefly describe the environmental setting and ethnographic context of the Ajumawi fish traps, account for their construction, maintenance and use, and present implications for understanding how Ajumawi subsistence practices involve not just the harvest of a fishery resource, but its propagation and active management as well. The Ajumawi traps are not just for fishing, but managing a fishery.

INTRODUCTION

From ancient times there have always been suckers. In fact, they say there's one born every minute. Well, it doesn't happen by accident. In this case I'm referring to the Sacramento sucker (*Catostomus occidentalis*), which thrives in the clear fresh waters of the Fall River drainage in northeastern California. This fish, typically detested by Anglo settlers and essentially unmanaged as a "trash fish" by the State Fish and Game officials, is of paramount importance to the native Pit River Ajumawi, who developed efficient tools and techniques for its capture. But while Ajumawi fishing has been recognized and documented for many years, the role of these traps in fishery management has yet to be recognized.

ENVIRONMENTAL SETTING

Ahjumawi Lava Springs State Park (ALSSP) is one of the unpolished jewels of the State Park system. It is situated in the western portion of Fall River valley of Shasta County, along the shores of Big Lake and the Tule River, a short distance upstream from its confluence with the Pit River. It is an undeveloped park of magnificent beauty as well as rich cultural history.

The state park is composed of a vast lava field on the north extending many miles beyond the park boundary. This is the result of a geologically recent flow, perhaps 2,000 years in age, resulting in a landscape of sharp-edged rock, craters, pressure ridges and lava tubes. The aqueous setting is as soft as the land is harsh. Big Lake, Eastman Lake and the Tule River form a stark contrast to the lava field. These are shallow bodies of water, reaching a maximum depth of 25 feet (in Big Lake). They contain cool, fresh water for most of the year, but during the summer, Big Lake and Horr Pond become dark green with algae. The southern boundary of the lake is artificial. Prior to reclamation in the early years of this century, it graded into a vast marsh to the south.

Where lava meets lake is a zone of critical importance. The lava flow collects rainfall over a vast area. It percolates through the broken rock, collects in great volume and issues through a series of reliable cold-water springs into the lake. These occur mainly along the shore, although several important flows can be detected in the main body of the Big Lake itself.

Fish documented in ALSSP include the Sacramento sucker (*Catostomus occidentalis*), rainbow trout (*Onchnrychus mykiss.*), and

Sacramento squawfish (*Ptychocheilus grandis*), as well as Tui chub, largemouth bass, and rough sculpin (Dreyer 1988:12; Moyle 1976). Of particular focus here is the sucker. This boney fish, scaly and coarse, can reach a size of 18 inches and weigh five pounds or more. It spawns primarily between late January and early June, with the heaviest activity being in February. The fish move up the Tule River to Big Lake from the Fall River. They collect in large schools, spending much of the daylight hours in large congregations. As evening approaches, they tend to move into the shallows where spawning is done in the flows of cold spring water (Moyle 1976:212).

ARCHAEOLOGICAL BACKGROUND

No excavations have been done within the park, and Fall River Valley prehistory is poorly understood at this point. Therefore, it is necessary to extrapolate from the few serious excavations in the surrounding region. These have been described by Dreyer (1988) and will not be repeated in detail here. The Lorenzen site, located in Little Hot Springs valley some 7 miles distant, revealed an archaeological record of some 3,000 years (Baumhoff and Olmsted 1963). More recent studies by Manuel (1983) on Beaver Creek, about twelve miles away and at Lake Britton, a distance of some ten miles, have doubled the occupational record and demonstrated gradual change in material culture through time (Kelly et al. 1987).

A series of important archaeological sites and features have been documented within the park. Although more complete studies are needed, a full complement of sites is included in the inventory. Three major housepit villages are situated along a thin band of shoreline along Big Lake's northern margin. Interspersed between them are other smaller middens and a large cupule boulder.

The lava field has only partially revealed its ancient past. A series of rock walls, trails, caims, sacred spots and lava tube burials have been identified. The walls may be related to hunting or defense, others to spiritual pursuits. A well developed trail leads across the lava to hot springs on the other side of the valley near Day.

Of particular interest to this study are the stone fish traps. They occur at Ja-She, Lava and Crystal Springs as well as the northernmost point of Big lake in close proximity to the housepit sites. Dreyer (1988) points out that this is somewhat surprising since winter residences containing pit houses were abandoned during the summer in favor of simple windbreaks or ramadas.

AJUMAWI FISHING

The Ajumawi are one of nine bands of the Pit River Indians who occupied a large area of northeastern California. The Pit River Nation stretches from Mt. Shasta and Lassen Peak on the west and south to Goose Lake and Eagle Peak on the north and east (Olmsted and Stewart 1978:Fig.1). Their name translates to "River People," an appellation given them due to their heavy riparian orientation (Olmsted and Stewart 1978:235).

The Ajumawi band recognized the Fall River valley, Tule River and a small section of the Pit River just below the great falls as their home range. At the latter spot, prior to Shasta Dam construction, they had access to salmon and steelhead, but beyond, squawfish, eels, pike, suckers and trout were relied upon. The vast Tule River marsh afforded large quantities of birds, and deer and acorns were important foods, but they were truly river people. As Voeglin recorded:

> The real Achomawi were River Indians; they stayed around the river, fished; every man had a canoe and belonged to the river. They went out (hunting) for a little while, then returned to the river" (1942:58).

Suckers were a primary food and the Ajumawi developed efficient fishing techniques to harvest this resource. These attracted the attention of early ethnographers. Dr. John Hudson, collecting for the Field Museum about 1902, acquired tule blinders, leggings and sandals, nets, basket weirs and a spear fashioned from bone prongs attached to a long

willow pole (Barter 1990). Throughout succeeding decades, new equipment has been added with spear tips, for example, pounded and shaped from pitch forks or hay forks, but traditional methods and social customs have persisted to the present day.

Evans (n.d.) has collected and summarized the recollections of Ajumawi residents concerning sucker fishing. By general agreement, this was a male group activity although women and children would often accompany the party. Several specific techniques are remembered. One consisted of spearing or netting the spawning fish from dugout canoes at night as they congregated in the shallows. A torch was burned from the prow to allow for viewing the fish. Tule blinders shaded the eyes to increase efficiency. Another successful method was to construct a weir across a shallow stream or tributary mouth by driving wooden stakes in the bottom and stacking rocks or logs against them. The ascending fish would seek an opening in the weir and become trapped in basketry traps set for this purpose. Ajumawi weirs on the Pit River employ this technique. Sometimes a net was stretched above the weir to catch leaping salmon. Still another method described by Curtis (1924) and mentioned by Harrington (in Dreyer 1988:32), involved the use of dip nets, drag nets or large seines. One end may be secured to the bank and the other looped by a swimmer or canoe around the congregating trout or suckers. The bottom of these seines was weighted by rocks and the top marked by tule floats. Large numbers would be captured this way.

STONE FISH TRAPS

Within the State Park and on nearby stretches of the Tule River are some of the best examples stone traps made by Ajumawi fishermen. They are ingeniously simple and efficient devices to capture suckers. The traps can also be effective for trout, which will congregate at times with the suckers, but these game fish will occasionally leap the stone walls to freedom while suckers, being bottom dwellers, are not prone to this behavior (Moyle 1976). A total of ten stone traps has been documented within the park -- five at Ja-She Creek, three at Crystal Spring, one at Lava Spring, and a large example at the far northern point of Big Lake near the large midden site.

In all cases the traps utilize the flow of cold water springs emerging from the lava and the propensity of suckers to seek these areas. There is a good deal of variation in trap construction, but some common elements can be pointed out. A massive outer wall in deeper water tends to occur at the larger traps. It typically forms an impoundment, connecting two points of land. Water depth may be 50-150cm and the stone wall is built up to the lake level using three courses of lava stones or more. A central opening measuring 20-50cm is designed to allow suckers to enter. It can be closed with a keystone (which can sometimes be seen underwater) or a log, dip net or canoe prow. The outer wall and opening serve to concentrate the spring outflow as it enters the lake, making a strong attraction flow to the spawning suckers.

Within the stone enclosure there is sometimes found a series of rock alignments forming an inner chamber. These invariablylead to a strong spring flow. They are constructed from lava rock near the spring itself. This exposes a layer of smaller vesicular gravels over which the spring waters issue. The most complex trap within the park is constructed at Crystal Spring (CA-SHA-85). Here an elaborate maze of interior channels, chambers, rock piles and outer wall direct the spawning fish into very shallow water. During the peak spawning season, the preoccupied fish can be touched from the bank as they deposit eggs on the gravels.

Some years ago the author was allowed to observe traditional sucker fishing as practiced by Mr. Floyd Buckskin at Ja-She Creek. It follows the pattern described by early ethnographers and summarized by Evans'(n.d.; 1990) treatment of this subject.

As evening approaches, preparations are made for sucker fishing. Nets and spears are readied, and arrangements for transportation to the traps were made. In earlier times this would not have been a problem since Ajumawi families would be living near the stone traps. By 9 or 10 pm, the sucker fishing would begin. There was a general prohibition against loud or drunken

behavior when harvesting suckers. This was serious business and proper care was advisable lest high winds or rough water be encountered. Loud noises were thought to scare the fish and produce bad results (Evans n.d.:19).

The men would approach cautiously with an elder who owned rights to a particular trap directing the harvest. The first order of business was to close the outside enclosure opening. A special board or stone might serve this function. If canoes were used, one might be placed in the opening to block escape of the fish to deeper water. At this point torches would be lit to reveal the fish. A large trap might contain several hundred. (When we were there in 1987, the light revealed hundreds of fish.) The leader might strike the first fish, then other men would carefully wade in and spear them, tossing selected specimens up on the bank. Young boys aged ten or twelve might be allowed to spear suckers with their own equipment (Evans n.d.:18). Others would gather them in baskets. Women might also join in, scooping out fish with their hands or using spears or basket scoops. The catch was loaded into baskets or gunny sacks in the boats (or cars).

When an adequate supply was taken, the trap was reopened and fish were allowed to resume their spawn. Occasionally, it would be left closed until the following day, but great care was taken to allow the spawn to be successful.

According to Evans' informants, it was not unusual for an expedition to take one hundred fish or more from a given trap. Individual specimens might weigh 4 to 7 pounds - quite a haul. As many as three or even six trips might occur during the spawning season, depending on the availability of fish and water conditions. The fish were cleaned by gutting and scaling with the heads attached. They were then sun-dried or smoked over a wooden frame. The catch would be shared with relatives and sometimes traded to neighboring groups for venison or acorns. Once dried, the fish would last for several months or "the beginning of summer" in a typical year (Evans n.d.:25).

The significance of sucker fishing in Ajumawi culture can hardly be overstated. As Evans was told, "When you had suckers and acorn, you didn't even need bread." Another woman summed up their importance by saying, "What rabbits are for the Big Valley people (Atwamsini), suckers re for the Ajumawi. It is our special food (Evans n.d.:25).

Several informants state a preference for sucker over trout or salmon. (Also a stated preference for the Miwok of Yosemite Valley). In general, Ajumawi find the fish delicious and nutritious (Evans n.d.:25).

By way of contrast, Anglo residents generally show dislike for suckers as a food. In Big Lake they were sometimes fished with light tackle for sport, but rarely eaten. The early ethnologist, Stephen Powers, expressed revulsion at the sight of suckers being consumed in 1877: "I dismounted and stood fifteen minutes watching a group of them (Ajumawi) eating one of those execrable Pit River suckers; and never have I seen so saddening and piteous spectacle..." (1976:268).

A century later there continues a general disdain in the dominant culture for bottom feeders -- including fish (Moyle 1976)!!

AJUMAWI FISHING AND RESOURCE MANAGEMENT

Now typically fishing is seen as a subsistence activity among aboriginal groups. It is that, of course, but in this instance I'm arguing that it is more. What is represented by the stone fish traps at ALSSP is a form of resource manipulation that involves managing the sucker population as a fishery; that is to say, improving spawning conditions for the resident suckers as well as enabling their selective harvest. This is a reasonable conclusion given the following points:

(1) If the stone traps were simply designed to catch fish, they would only need the outer wall, because when that is plugged, there is no escape for the spawning suckers. Constructing the inner chamber walls involves stacking large basalt rocks to form a channel. This effort serves to expose ideal spawning gravels beneath the removed larger stones. The spring

outflow is directed by the constructed channel over the exposed spawning gravels. When the sucker eggs are deposited there, they settle into the exposed crevasses and are nurtured by the spring flow.

(2) The Ajumawi place a strong emphasis on maintaining the traps, keeping them clear of debris. According to Floyd Buckskin, this was among the most important responsibilities in traditional life. The stone traps need regular care and rebuilding. The walls tend to collapse, and this covers the essential spawning gravels. The emphasis on maintaining these gravels strongly implies that more than fishing is involved.

(3) The resident rainbow trout in Big Lake also benefit from this management activity. They are fall spawners, and by February, are in a weak post-spawn metabolic state with very little food available (T. Taylor n.d.). Our study demonstrated that the trout feed on sucker eggs during this period. And therefore, by enhancing this spawn, the Ahjumawi are also having a positive effect on the trout. More research needs to be done on the nature of sucker-trout ecology, but the institutional view that suckers compete with trout for food, should be called into question. It's just possible that Ajumawi knowledge concerning this relationship, at least at Big Lake, surpasses that of the Department of Fish and Game.

But wait, you might say, our dominant culture invented "resource management." We trace it back to John Muir and the conservation movement. Its part of our history. After all, it's the name of my organizational unit in State Parks. How could it have been applied by an aboriginal group? Well perhaps it's a problem with our understanding of Ahjumawi subsistence. Maybe our hunter/forager models do not recognize this complexity among Native California cultures. In many other areas across California, the omission is now being recognized. As Kat Anderson has written:

> It has been widely assumed that California Indians were casual inhabitants who drifted from place to place, their former range left vacated until another group accidentally wandered in. Therefore the effects of human occupance were soon erased, like the marks of a light storm, or the tracks of birds and squirrels. Early anthropologists assumed that though natives adjusted to their environment, they did not change the physical world sufficiently to warrant careful investigation. The dominant view has been that people living at band and tribal levels of social organization do not influence or produce resources, and therefore, of human groups, have the least influence on natural phenomena (1993a:64).

This anthropological view is changing rapidly. The imprint of native cultures on the vegetation of California, from the Sierra and foothills (Anderson 1993a, 1993b) to the Santa Barbara channel (Timbrook 1995) is now being recognized. Through regular burning, pruning, tillage and planting, native California groups actively manipulated their environment to make it more productive. They adapted to, but also managed, their plant resources and landscapes.

This paper argues that Ajumawi fish traps preserved at Ahjumawi Lava Springs State Park are an example of active resource management. The native inhabitants are concerned with propogating as well as harvesting these important fish. When one considers the timing of the sucker harvest (and spawn), during the deep winter, its caloric value and the deeply held traditions which surround it, it is perfectly understandable why suckers form such a significant subsistence element. After thousands of years, is it unreasonable to think the Ajumawi – the River People – were managing this vital fish population to insure their own survival?

NOTES

These observations rely on previous work carried out at Ahjumawi Lava Springs State Park by Bill Dreyer of CSU Chico and Nancy Evans of the Department of Parks and Recreation. Much of it was funded through the Department's Statewide Resource Management Program. I am also indebted to Tom Taylor, former Fishery Biologist with DPR, who served as my dive

partner and collaborator in an underwater view of suckers and stone fish traps. He graciously read and commented on an earlier version of this paper. Steve Moore, State Park Ranger at Ahjumawi, freely shared his knowledge with us. Eloise Barter's summary of fishing equipment adds important historical perspective. Finally, the insights conveyed by Floyd Buckskin, a native Ajumawi resident, on fishing and the place of this activity in traditional culture have been crucial to any interpretations made herein. The errors, of course, are my own.

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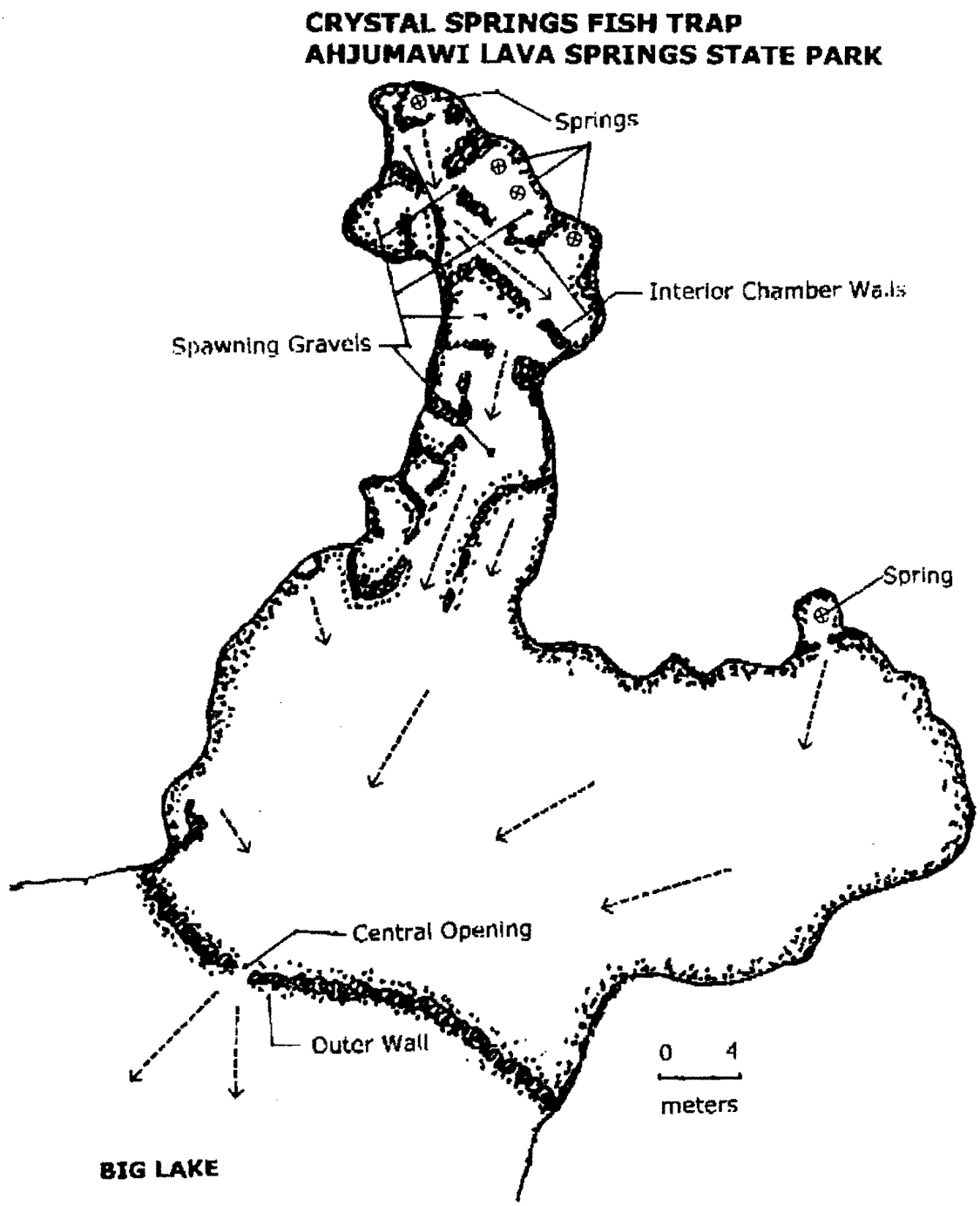

Figure 1. Typical construction of Ahjumawi fishtrap. The inner wall construction exposes spawning gravels that would otherwise be covered by larger basket rocks. After Dreyer 1988: Map 12.