

### 3.12 Tribal Trust

Indian trust resources consist of certain real property, natural resources and related rights, held in trust by the federal government for federally recognized Indian Tribes or individual Indians. Trust resources attributed to tribes are called “tribal” trust resources, and trust resources attributed to individual Indians (usually called “allottees”) are called “individual” trust resources. Some tribes have the right to use trust resources that are transitory or migratory in nature and that move beyond the reach of federal or tribal management (e.g., fish and water). In such cases, it is a tribe’s *right* to use the resource that is the trust resource, but does not necessarily exclude other users from access to the resource. In the case of the Klamath Basin Indian Tribes, the federal government has the responsibility to safeguard the fishery to ensure that tribes with fishing rights are able to practice those rights. Water quality is essential for success of a safeguarded fishery, with some Klamath Basin tribes also maintaining federally recognized water rights. Tribes of the Klamath Basin also have traditionally used resources they do not currently have a legally vested right to use/take. For the purposes of this document, these resources are referred to as resources traditionally used by tribes.

Cultural values related to a tribal way of life centered on rivers and lakes are composed of myriad values, styles, practices, resources, and items transmitted and evolving through time that together define the unique identities of the Yurok, Hupa, Karuk, Shasta, Klamath, Modoc, and Yahooskin (a band of Snake) cultures. Cultural values more specifically can be described as the unique manner in which tribal people access, take, prepare, administer, consider and otherwise use natural resources in unique tribal ways. To the extent that such resources and related values are diminished by ecosystem degradation, related cultures are also degraded and cultural transmissions become inhibited, which can contribute to the detriment of the mental, spiritual, and physical health of the Indians of the Klamath Basin.

This section provides a history of the Indian Tribes of the Klamath Basin, their salmon based economy and barter system, their trust resources, other resources traditionally used by the tribes, and traditional cultural practices associated with these resources. This section also documents the effects of the Klamath Hydroelectric Project dams on these resources and values and also reflects the replacement of a salmon based economy (cyclic based upon nature and natural occurring events) with that of an industrial economy (dams). The information presented in this section is primarily drawn from two 2011 United States Department of the Interior (DOI) reports: 1) Current Effects of Implementing the Klamath Hydroelectric Settlement Agreement (KHSAs) and Klamath Basin Restoration Agreement (KBRA) on Indian Trust Resources and Cultural Values (2011a); and 2) Potential Effects of Implementing the KHSAs and KBRA on Trust Resources and Cultural Values<sup>1</sup> (2011b).

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<sup>1</sup> Unless otherwise cited the information in this section is drawn from these reports.

### **3.12.1 Area of Analysis**

The area of analysis for Indian trust resources and other traditional resources includes the entire 263 miles of the Klamath River and the Klamath Basin.

### **3.12.2 Regulatory Framework**

Tribal Trust, within the area of analysis are regulated by several federal laws and policies, which are listed below.

#### **3.12.2.1 Federal Authorities and Regulations**

- American Indian Religious Freedom Act
- Federal Power Act
- Executive Order 13007
- Executive Order 13084

### **3.12.3 Existing Conditions/Affected Environment**

The information presented in this section is primarily drawn from the 2011 DOI reports on Indian trust resources and cultural values in the study area. These reports identify Indian trust resources in the study area and document the effects of the Klamath River dams on those resources. Where no citations appear in Section 3.12.3, the information and discussion presented is based on the 2011 DOI reports. Section 3.13, Cultural and Historical Resources, presents additional information regarding the Indian Tribes in the area of analysis.

This section presents individual histories of the six tribal governments in the study area. The federally recognized tribes in the study area include The Klamath Tribes, Quartz Valley Indian Community, Karuk Tribe, Hoopa Valley Tribe, Yurok Tribe, and Resighini Rancheria. These tribes live along different reaches of the Klamath River and in different areas of the Klamath Basin. Each tribe has a unique history of its long-term occupation and use of the study area and establishment of its tribal government, reservations, rancherias, or other tribal lands. The section is organized by tribe to highlight the tribes' individual histories and to identify the specific Indian trust resources of each tribe and the impacts of the Klamath Hydroelectric Project on those trust resources.

#### **3.12.3.1 The Klamath Tribes**

##### **The Klamath Tribes History**

The Klamath Tribes are composed of three historically separate tribes: the Klamath Tribe, the Modoc Tribe, and the Yahooskin band of Snake Indians. The current membership is about 3,400 and the current total land base is approximately 600 acres<sup>2</sup>.

The Klamath Tribes Treaty of 1864 (16 Stat. 707) (Treaty) was signed in the Wood River subbasin on October 14 near modern-day Fort Klamath. The Klamath, Modoc, and Yahooskin Tribes signed the treaty, ceding more than 22 million acres of their traditional

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<sup>2</sup> As discussed below, the land base of the Klamath Tribes was substantially eliminated as the result of the United States' Termination Policies of the 1950s.

territories to the United States. These ceded lands included much of south-central Oregon as well as portions of north-central California. Based on the language in the Treaty, from the date the Treaty was signed the Klamath, Modoc, and Yahookskin became known as The Klamath Tribes.

Under the Treaty, approximately 1.9 million acres, primarily Klamath ancestral lands, were retained for the Klamath Indian Reservation. As a result, the Klamath Reservation was the largest reservation in the state of Oregon. Under the Treaty, The Klamath Tribes also reserved the rights to hunt, fish, trap, and gather plants throughout the reservation in perpetuity.

In 1887, Congress passed the General Allotment Act, which fundamentally changed the nature of land ownership on the Klamath Reservation. Under the allotment system, approximately 25 percent of the original Klamath Reservation passed from tribal to individual Indian ownership over a number of decades. Subsequently, many of these individual Indian-owned allotments passed into the hands of non-Indians.

The construction of Copco 1 Dam in 1918 and the resulting loss of anadromous fish had disastrous effects on The Klamath Tribes; however, The Klamath Tribes continued to harvest staple fish, game, and plant materials both on and off-reservation.

In 1954, as part of a nationwide effort to assimilate Indian Tribes into the cultural and economic mainstream, the federal government chose The Klamath Tribes for the experiment of “termination,” effected by the Klamath Termination Act (25 USC §564, et seq.). The Klamath Tribes were chosen in part because of their self-sufficiency, which was due, in part, to the resource harvest; however, termination ultimately resulted in separating the Tribes from the factors that had enabled their self-sufficiency.

Throughout the termination process, the United States divided the reservation into large timber tracts, intending to sell them to private timber companies; however, for various reasons, only one such tract was actually sold, and the government found it impossible to dispose of the others. In 1961, the United States itself purchased large forested portions of the former Klamath Reservation. This forestland became part of the Winema National Forest under the jurisdiction of the United States Forest Service. The balance of the reservation was placed in a private trust for the “remaining” tribal members who had opted to retain an interest in the tribal lands. In 1973, these remaining Indian lands were condemned and purchased by the government, and added to the Winema National Forest.

Termination ended The Klamath Tribes’ status as a federally recognized Indian Tribe, dissolved the federally recognized tribal government, and nullified most federal fiduciary responsibilities to the tribal community. It did not, however, dissolve the Tribes’ own government and social organization, and did not convert Indians into non-Indians in any way other than in the most technical and legal terms. The social, economic, and cultural consequences of termination were both significant and complex and are generally viewed as dire by Klamath Tribes’ members.

Reservation employment and benefits disappeared, and access to traditional lands and resources quickly eroded. Control over irrigation water supporting tribal farms diminished as well, as government-owned irrigation infrastructure was privatized and fell into non-Indian control. Under this Termination Act, tribal members were encouraged to give up their interest in tribal property in return for cash. A large majority of the tribe chose to do this. A provision of this Act continued the Indians' right to hunt, fish, trap, and gather on the former reservation land. Cash payments for liquidated tribal assets were distributed irregularly within the tribal community, and those lands retained by tribal members were often lost to taxes and acquired by non-Indians. Once a model of economic self-sufficiency, the former members of The Klamath Tribes now had poverty levels that were three times those of their non-Indian neighbors.

Over the next three decades, tribal members and their families continued to reside principally on former reservation lands. Despite the loss of tribal lands, most continued to practice traditional subsistence harvests of game, plants, and fish, especially within the former reservation boundaries. Today The Klamath Tribes have re-acquired about 600 acres of their former reservation. The United States holds title to approximately 70 percent of the former reservation lands.

On August 26, 1986 The Klamath Tribes officially regained federal recognition under the Klamath Restoration Act (25 USC §566, et seq.). However, the Restoration Act did not restore The Klamath Tribes' former reservation lands and tribal efforts to regain a tribal land base continue.

The Tribes are now acquiring lands in the former reservation as they can and are placing them in federal trust. Significantly, for the present discussion, restoration did not restore to the Tribes the anadromous fisheries lost due to the construction of Copco 1 Dam and the other Klamath River dams. The tribal members continue to practice their cultural traditions, including traditional subsistence practices and related ceremonies. The Tribes maintain active natural and cultural resources departments.

### **The Klamath Tribes' Cultural Practices**

#### **Fishing**

The federal courts have confirmed that The Klamath Tribes' hunting, fishing, gathering, trapping, and water rights survived Termination. These resources, especially fish, have played a central role in the physical, social, and spiritual well-being of the Klamath people for millennia. The Klamath Basin from Link River to the headwaters of the Wood, Williamson, Sprague, and Sycan River subbasins once had an almost continuous geographical distribution of traditional sites and activities including resource harvest areas, ceremonial sites, and burials areas, which surrounded the major population centers.

The Klamath Tribes relied heavily on upland game (e.g., deer, elk, and pronghorn antelope) and plant foods (e.g., yampah, wild plum, and many other fruits and berries), but riverine and especially marsh resources were of equal importance. Salmon and multiple species of sucker, trout, eel, lamprey, mussels, and other fish were dietary staples, while marsh and riparian plants, such as the yellow pond lily (Wocus or Wokus),

tule, cattail, and willow provided staple foods and materials for essential tools and crafts. The Klamath, Modoc, and Yahooskin traditionally recognized all of the plants and animals of their traditional territory as possessing their own spiritual powers; tribal members took active steps from ceremonial activities to active management techniques to maintain respectful relationships with the species on which they most depended to ensure that the species would return abundantly in future years. These ritual activities were an essential part of the ceremonial tradition of the historical Klamath Tribes, and they have continued into the modern day.

The confluence of Spencer Creek and the Klamath River was a particularly important salmon fishing site for the Modoc tribe. The site also afforded fishing opportunities that were rare downstream of the Link River because of natural shallows that obstructed the salmon during low-water years until levels began to rise from springtime snowmelt. Salmon were speared there in large numbers. In the 19th century, Modocs still gathered there and “pulled salmon out with pitchforks” just downstream of this shallows. Captain Jack, leader of the Modocs during the Modoc War, was said to have fished the Klamath Canyon extensively and most commonly fished Spencer Creek. Following the Modoc War, some Modoc families maintained ties to the area. For example, Indian women married to white men stayed in the area, providing a lasting foothold in the Klamath River corridor.

Klamath Canyon, particularly the zone from Spencer Creek downstream, was a major historic center of settlement, salmon procurement, and trade for the Klamath and Modoc Indians. During salmon fishing time, Klamaths, Shastas, and Modocs occupied separate groups of structures within larger, multi-tribal communities. The communities along the Klamath Canyon floor were important centers of social, ceremonial, economic, and political activity timed to coincide with the peak salmon harvest. The presence of fish at sites downriver from the Upper Klamath Basin drew some Modocs and Klamaths downstream into the canyon; but since some fish worked their way into the Upper Basin, Klamaths and Modocs did not have to go to the canyon to fish.

Salmon were numerous throughout much of The Klamath Tribes’ traditional territory, including the Upper Basin. The fish were commonly said to arrive in runs so large that “it looked like you could walk across their backs;” and the fish were packed so tightly in shallow river channels that they could be speared with ease. Klamath men used spears to catch fish, and, during the 19th and early 20th centuries, it was common knowledge that the large numbers of salmon thrashing in the Sprague, Williamson, Link, and Wood River basins would “spook the horses” and people understood not to ride close to the rivers during salmon runs to avoid being thrown. Because salmon were numerous and relatively ubiquitous, the location of fishing stations reflected not wholly the extent of fish distribution, but rather areas convenient for fishing, such as naturally available shallows where fish could be easily speared, natural barriers that caused the fish to become “bunched up,” nearby settlements and secondary resources, springs and spawning grounds, and other factors that influenced the locations of salmon fishing within the Klamath and Modoc territories.

Historically, The Klamath Tribes fished not only for salmon and steelhead, but also for mullet, suckers, trout, sturgeon, eels, and lamprey. Anadromous lampreys were harvested in large numbers during salmon season, often being gilled or speared. Most large-scale fishing within the Upper Klamath Basin was timed to coincide with salmon runs, but all species were taken at these times and places. Salmon and mullet appeared at roughly the same times and at the same places. Trout also appeared with these fish to consume the spawn of both species. Together, these fish provided a tremendous, dependable food resource for the Klamath and Modoc people.

Detailed environmental knowledge once guided tribal member movements to and between salmon fishing sites, and some of this knowledge persists today. They knew which fishing stations and which riffles would provide the right conditions for salmon fishing based on the level of the water in front of their home village. Today, experienced Klamath fishermen still possess the knowledge of how water levels near their home relate to the exposure or submersion of riffles as well as general fishing conditions at trout-fishing sites.

Salmon-fishing sites were usually accompanied by settlements or seasonal encampments. Many of the largest Klamath and Modoc winter villages were close to large salmon fishing stations. The Indians said, “where the fish were, we were.” Springtime salmon fishing marked the end of the lean winter months, and the proximity of winter villages to salmon fishing sites ensured that salmon would be detected and thus available from the onset of each year’s spring migration. Although late spring and summer involved other subsistence activities far from these villages, the fall Chinook salmon run was said to draw people back to many of these villages. The success of fall fishing had major implications for a community’s food supplies when alternative resources were limited, and a poor fall salmon run indicated a potentially difficult winter ahead. Salmon thus occupied a crucial position within the seasonal round, with salmon runs marking both the beginning and the end of annual resource procurement.

Multi-village and multi-tribal gatherings centering on the salmon harvest were important social and ceremonial events. The movement of the tribes associated with the salmon runs shaped much of Klamath and Modoc social life: “Early spring finds them leaving for favorable fishing stations where there are successive fish runs,” one local reported. Salmon fishing at certain productive fishing stations, such as those on the Klamath Canyon, Link River, and Beatty Springs, were “where you met the person you were going to marry.” Gambling contests, races, and group dances were facilitated by these large gatherings of families from different villages. Dried salmon was used in trade, particularly with interior populations such as Paiutes and interior Pit River bands, providing the Klamath and Modoc with access to trade goods from these interior locations. Mobility and social diversity of the population participating in the salmon harvest fostered multi-tribal gatherings even at sites quite distant from salmon-fishing stations. For example, Tule Lake villages, including those at the Lava Beds, served as a stopover point for Modocs, Paiutes, and other tribes traveling to and from the Klamath Canyon to catch or barter for salmon.

Salmon was also typically shared within the community. Tribal members typically caught surplus salmon to feed the elderly, children, and those with disabilities who were unable to participate in the salmon harvest. This practice also appears in classic ethnographic studies of The Klamath Tribes and is an ongoing one today. This redistribution of the salmon catch cemented social bonds within and between communities, in addition to ensuring food security in the community as a whole. These practices are still a source of pride among many tribal members today. Young people still share the catch of other fish species, especially trout and mullet, in the traditional manner. “You always give away fish to the elders...you always give away the first deer you kill...our grandparents taught us that and young people still need to listen to that,” a tribal member described. Young men who go on salmon fishing trips outside of the Upper Klamath Basin also redistribute modest quantities of salmon among tribal members, and such salmon is highly prized. Young people “always drop by to drop off fish” after these long-distance fishing trips, said one tribal member. Access to fishing sites and fishing gear is viewed as essential to a family’s security; some tribal members mentioned that they have inherited fishing gear from their elders, which is understood as a sign of one’s obligation to continue fishing for the extended family in the elder’s absence.

Affidavits of tribal members compiled in the early 1940s suggest that between one-half and one-sixth of the aboriginal diet consisted of salmonid fish. Rates of salmon consumption likely varied over time and between individual communities and households, but a review of both written accounts and contemporary oral histories suggests that salmonid fish were consumed in large quantities by most Klamaths and many Modocs as a dietary staple.

Salmon was an essential part of the Klamath Basin ecology, with salmon carcasses in particular providing food for many species of animals and nutrients that facilitate the health of marsh plant communities. Tribal members identified the following effects associated with a reduction in salmon:

“When the salmon leave, everything else falls apart.”

“A lot of other fish started to disappear as soon as the salmon were gone.”

“Trout fed on the salmon spawn...once the salmon were gone, they went after the sucker spawn more...and then there weren’t as many trout and suckers.”

The Klamath Tribes’ members also report that their ancestors used to manage fish populations. Staple fish, such as salmon, trout, mullet, and suckers were harvested according to a rule that “you should never take more than you needed...you take what you need, then quit” and this rule still guides the actions of many tribal members today. Chub and other species were known to eat salmon and trout eggs, and increases in chub populations corresponded with subsequent decreases in salmon and trout populations. For this reason, when fish populations were thought to be out of balance, men sometimes intentionally caught large numbers of chub and tossed them onto the banks to be eaten by birds and other creatures. This practice is said to have continued into the 20th century.

### **Religious Practices**

Salmon played an important ceremonial and religious role in Klamath and Modoc culture. The tribes have creation stories that relate to salmon fishing and salmon fishing sites, and most of the large salmon fishing dams were historically viewed as the handiwork of the Creator, *Gmukampc*. "...the special creation of [*Gmukampc*] was man, and whatsoever stands in direct connection with his existence, welfare, and customs, as fishing places..." noted ethnographer Gatschet (1890). Gatschet further notes that events in Klamath oral tradition were sometimes said to center on *tsiäls-hä'mi*, ("salmon time") that is part of the Klamath seasonal round.

It is understood by The Klamath Tribes that salmon possess a spirit and that this spirit must be respected and honored in order to ensure the return of the fish. Salmon fishing was guided by certain protocols, which acknowledged the belief that the fish possessed a spirit and sentient qualities. For example, unused portions of fish carcasses were put back in the water "so that they will come back" in following years. Tribal members also conducted first salmon ceremonies at the beginning of each year's run to ritually distribute salmon flesh and honor the salmon. These ceremonies could last two or three days, and involved large salmon feasts celebrating the return of the salmon and the end of winter hunger. Currently, traditional ritual activity continues by The Klamath Tribes' members to ritually ensure the return or resuscitation of salmon, mullet, and other important species and to influence water levels and water quality for the benefit of fish.

### **Oral Traditions**

The Klamath Tribes' oral traditions, including the "*Gmukampc* tears down the fish dam" story, are said to impart teachings that still guide tribal members in dealing with moral or ethical dilemmas. These stories are tied to particular landscape features that are prominent in the vicinity of traditional salmon fishing sites. In some cases, certain landscape features of religious significance distant from salmon fishing sites also possess ceremonial associations with salmon fishing. These oral teachings relate to salmon fishing and impart lessons from *Gmukampc*, the Creator, regarding fundamental moral and ethical principles. One principal story reflects The Klamath Tribes' sentiments regarding the Klamath Hydroelectric Project and its effects on fish populations and their ability to acquire fish:

The people who lived there [below the Chiloquin forks] had a big fish dam. They got greedy and kept building it higher, catching all the fish until no fish could get past them...the people upstream couldn't catch anything and were starving. They said the Creator got angry...and he asked the animals to help him tear down the dam....After the dam was gone, the people were all turned into rocks...they got punished. People fishing there could always see those rocks...it reminded them. (Spier 1930)

### **The Klamath Tribes' Potentially Affected Trust Resources**

A government-to-government consultation meeting concerning the effects of current Klamath River dam operations on The Klamath Tribes' trust resources and other



resources traditionally used by The Klamath Tribes was held on October 4, 2010. A variety of trust resources have been affected by current dam operations; however, the meeting focused on The Klamath Tribes’ fish resources and water conditions that relate to the health of the fishery. Table 13.12-1 identifies trust resources and rights associated with The Klamath Tribes.

**Table 13.12-1. Effects of Current Dam Operations on Klamath Tribes Trust Resources and Rights**

Trust Resource/Right	Effects
Water resources	Poor flow management (e.g., peaking regimes, flow pulses, flow homogenization, aquatic ecosystem functionality)
	Altered water temperature regime
	Reduced bedload sediment transfer
	Degraded water quality caused by nutrient input, dissolved oxygen, pH, algal toxins and other contaminants
Aquatic resources	Loss of habitat
	Less suitable water temperature regime
	Reduced bedload transfer
	Increased potential for disease/parasites
Terrestrial resources	Reduced population size
	Reduced food availability
	Loss of riparian habitat

Source: DOI 2011a, 2011b

Among the anadromous fish The Klamath Tribes used as staple foods are fall and spring Chinook salmon, steelhead, Pacific lamprey, and possibly coho and sockeye salmon. These fish entered the Klamath Reservation along the drainages of the Sprague, Williamson, and Wood Rivers and were also found in the open waters of Upper Klamath Lake. Historically, The Klamath Tribes also depended on a variety of other resident fish species, primarily the adfluvial and resident rainbow trout, *c’waam* or Lost River sucker, and *koptu* or shortnose sucker, cutthroat trout, Klamath smallscale sucker, Klamath largescale sucker, Pit-Klamath brook lamprey, blue chub, tui chub, and speckled dace. Although the exact quantity of fish historically consumed by The Klamath Tribes is difficult to establish, anadromous salmonids were staple foods. Anadromous salmonids were the focus of extended multifamily fishing operations often lasting weeks or months, and were an important source of wealth and stability to The Klamath Tribes prior to the construction of Copco 1 Dam in 1918.

The construction of Copco 1 Dam blocked anadromous fish runs into the Upper Klamath Basin and abruptly ended The Klamath Tribes’ access to all anadromous fish. Two other major fisheries, adfluvial and resident salmonids (trout) and Catostomids (suckers), could still be used by The Klamath Tribes after the demise of the anadromous fisheries. The catostomid fishery consisted primarily of *c’waam* (Lost River sucker) and *koptu* (shortnose sucker) until the Tribes closed their fishery in 1986 to protect it in the face of severe population declines. This move by the Tribes in turn prompted the federal government to list these fish as endangered in 1988 under the Endangered Species Act.

As the only surviving tribal fishery, adfluvial and resident salmonids today represent an invaluable resource to tribal members.

Water quality and flows in the Klamath River and its tributaries associated with current dam operations are an important issue to The Klamath Tribes. Water conditions affect the ability of anadromous fish species to survive. The Klamath Tribes retain a right to instream water quantities in on-reservation and off-reservation locations at levels that are sufficient to support fishing and other harvest rights on former reservation lands, as affirmed in 1984 with the 9th Circuit Court of Appeals' decision in *United States v. Adair*, 723 F.2d 1394. A number of ritual traditions of The Klamath Tribes depend on access to clean water from natural sources, which is used in ritual purification of people, places, and objects, as well as in rituals associated with drought abatement and other environmentally restorative activities. However, the water of the Klamath River is widely viewed as inappropriate for these ritual uses because of the effects of the dams on water temperature, algae development, and other variables of water quality.

The current operations of the Klamath River dams have had a range of secondary effects on The Klamath Tribes. Among these effects are the decline of fish and wildlife in addition to the loss of cultural and social practices, diminished economic opportunity, and negative health effects resulting from dietary changes that became necessary with the loss of traditional food sources.

Tribal oral tradition suggests that the timing of catostomid (sucker) and trout population declined following the extirpation of anadromous salmonids, reflecting partial dependence of these resident fish on marine protein from salmonid sources. In recent interviews, numerous tribal members noted that the once-abundant numbers of these other culturally significant species have diminished, attributing this change in part to the absence of anadromous fish within the Upper Klamath Basin. Recent studies have confirmed that no fewer than 137 other wildlife species depend on salmon consumption for some portion of their life cycle, drawing sustenance from smolts, adult salmon, or salmon carcasses. Subsistence fish and wildlife species affected by the absence of salmon include, but are not limited to, black bear, mule deer, and a large number of waterfowl species. Several salmon-dependent wildlife species are of traditional cultural significance to members of The Klamath Tribes beyond their subsistence value, including but not limited to the Bald and Golden eagles, coyote, cougar, American marten, weasel, bobcat, red and gray foxes, northern river otter, various bat species, raven, crow, red-tail hawk, blue jay, and a variety of songbirds.

Many non-salmon species and ecologically linked plants are significant for the cultural and economic well-being of The Klamath Tribes. The Klamath Tribes traditionally used pelts, feathers, and other body parts from some of these animals in ceremonial regalia, traditional crafts, and for other purposes. In a few cases, tribal members relied on the sale of pelts from some of these species for supplemental income. In ethnographic interviews, tribal members referred to a number of culturally preferred riparian and marsh plant species that are said to have declined in population in the last century. Foremost among these is the yellow pond lily (*Wocus*), a source of edible seeds that has served as

one of the most important staple plant foods of The Klamath Tribes. The decline in some riparian plant species may correlate with declines in the fish population of the Upper Klamath Basin and may reflect the reduction in nutrient loading to marsh plant procurement areas.

Prior to the extirpation of anadromous salmonids from the Upper Klamath Basin, salmon were the focus of a complex of cultural traditions, including distinctive fish harvesting and processing technologies; traditional ecological knowledge relating to fish habitats and behavior; and ritual traditions centering significantly on the maintenance of harvestable fish populations through ceremonial displays of respect for the fish, the Creator, and other spiritual forces said to influence the return of the fish. Through such practices, The Klamath Tribes have always played an active role in the stewardship of anadromous fish resources, and many contemporary tribal members perceive this role as a cultural right and responsibility.

The absence of the fish has compromised the ability of members of The Klamath Tribes to pass knowledge from generation to generation relating to the fish and their harvest. The importance of salmon harvest is further reflected in The Klamath Tribes' languages, place names, songs, stories, and the moral teachings provided to children. Large gatherings associated with the fish harvest once served as a venue for economic exchanges, reunion with kin from other communities, and the forging and maintenance of intercommunity ties within the larger tribal population. The demise of the fish populations has interrupted the performance of these important social and cultural functions.

Although The Klamath Tribes have the most direct interest in resources upstream from the four Klamath River hydroelectric dams, the current operations of the Klamath Hydroelectric Project have affected The Klamath Tribes' resource interests in the footprint of the dams and impoundments, and downstream from the dams in lands ceded to The Klamath Tribes. In the Klamath River corridor, for example, harvest activities historically focused on riparian resources. Plants, animals, soil, and rocks are all of concern to Klamath Tribes members, both economically and environmentally. The Indians commonly gathered riparian vegetation, including but not limited to willows for basketry and drying racks; tree species such as cottonwood for firewood; sedges, rushes, cattails, and tule for basketry mats and bedding; and a variety of berries and medicinal plants uniquely concentrated in the riparian corridor. Game in the riparian corridor, such as white- and black-tail deer, rabbit, groundhog, and birds, were also taken.

Various forms of evidence suggest that The Klamath Tribes' gathering activities were concentrated in relatively recent alluvial deposits consisting of gravel bars and fresh deposits of silt, loam, and sand-sized particles. At these sites, culturally prized early successional vegetation was abundant and desirable. For example, roots used in basketry were unusually long, straight, and easy to dig. Additionally, tribal members gathered rocks for use as cooking stones along the riparian corridor, especially basalt cobbles and other dense, nonporous stones.

### **The Klamath Tribes' Health Impacts**

Because salmon was the first dietary staple to be lost to The Klamath Tribes, its depletion was said to have initiated dramatic dietary shifts among tribal members. For a time, this fostered increased consumption of deer, mullet, and sucker, which some tribal members believe resulted in localized overuse of these resources, particularly in the light of game management practices of the State of Oregon. For some, the loss of the salmon was the catalyst for a dietary transition that led to the ultimate dependence of The Klamath Tribes on the purchase of processed foods and the use of supplementary commodity foods.

Tribal members attributed a number of historical health problems to the loss of salmon. A 1920s tuberculosis epidemic was said to have been worsened by the rapid impoverishment of the diet in preceding years. Recent Indian Health Service studies endorsed by The Klamath Tribes concluded that a host of physical ailments plaguing members of The Klamath Tribes have been linked to the demise of the aboriginal diet. Diabetes, hypertension, obesity, and related cardiovascular ailments are particularly widespread, reflecting dramatic changes in food consumption and procurement patterns. A number of tribal members expressed the view that the loss of salmon was among the most significant components of this dietary shift.

### **Alternative 1: No Action/No Project Alternative - The Klamath Tribes and Damming of the River**

*Continued impoundment of water could affect tribal trust resources.* The current Klamath River dam operations have measurable consequences on the exercise of The Klamath Tribes' Treaty harvest rights on the former Klamath Reservation; consequences which would continue under the No Action/No Project Alternative. In addition, the current Klamath River dam operations would have measureable consequences on the condition of lands held in trust status for The Klamath Tribes; consequences which would continue under the No Action/No Project Alternative. In response to the loss of the Klamath Reservation as a result of the 1954 Klamath Termination Act and the absence of provisions for the reservation's return in the 1986 Klamath Restoration Act, The Klamath Tribes have been actively acquiring lands within the boundaries of the former reservation and placing them in trust status. Existing and pending trust lands include properties that are transected by waters formerly housing populations of anadromous fish. These trust lands are affected by the same environmental variables that apply to the entire Upper Klamath Basin.

Salmon have not been sighted in the areas upstream of the dams in about 100 years. However, in 1907, before the dams went into service, Barrett (1910) reports that "Fish were abundant in the lakes, salmon and salmon trout being especially esteemed by the Indians." Other firsthand observations confirm the presence of salmon before the dams were built. In the 1940s, in preparation for a lawsuit against Copco for blocking the anadromous fish runs, Bureau of Indian Affairs (BIA) Superintendent B. G. Courtright interviewed 50 older members of the Klamath Tribe and non-Indian settlers in the area about salmon in the Klamath Basin. These unpublished affidavits unanimously report there were salmon in fisheries as far upstream of Klamath Lake as the Sprague and

Williamson rivers, Upper Klamath Lake, and Spencer Creek. Spier (1930) reported that salmon in the Klamath Basin “...ascend all the rivers leading from Klamath Lake...going as far up Sprague River as Yainax, but are stopped by the falls downstream of the outlet of Klamath marsh.” A tribal elder in the 1940s also stated that he had observed salmon as far up the Sprague River as Bly.

Salmon continue to be symbolically and culturally important to members of The Klamath Tribes. Moreover, tribal members insist that traditional salmon fishing stations are still being used today, whether for subsistence purposes, ceremonial activities, or instruction of children on tribal history and culture. Resources that were once harvested secondarily to the salmon harvest have now become the focus of subsistence activity at these stations, and tribal members still use certain historic campsites at these stations during subsistence, social, and ceremonial activities. Tribal members continue to participate in ritual activities “to bring back the salmon,” while The Klamath Tribes government continues to explore legal and administrative options to achieve the same goal.

Many historic and current factors, such as mining, timber extraction, agricultural production, and cattle grazing, affect the environmental integrity of the Klamath Basin, as noted above. However, the current operations of the four Klamath River dams adversely affect the trust resources of The Klamath Tribes and other resources traditionally used by the tribes, and, by extension, their cultural values (Table 3.12-1), and their continued operation under the No Action/No Project Alternative would result in no change from existing conditions.

**Alternative 2: Full Facilities Removal of Four Dams Alternative (the Proposed Action)**

*Removal of the Four Facilities could affect tribal trust resources.* Under the Proposed Action, four dams and their associated hydroelectric facilities along the Klamath River would be removed. Keno Dam would be transferred to the DOI, the East and West Side Facilities would be decommissioned, the KBRA would be implemented, and the Yreka water supply pipeline would be installed. Implementation of the Proposed Action, including the KHSA and KBRA, would, in the long-term benefit the water, aquatic, and terrestrial resources issues related to trust resources and rights identified by The Klamath Tribes (Table 3.12-1). Actions addressing these issues are presented in Sections 3.2, 3.3, 3.4, and 3.5 of this Environmental Impact Statement/Environmental Impact Report (EIS/EIR).

**KBRA<sup>3</sup>**

The KBRA has several programs that could result in impacts/effects to trust resources and other traditional resources used by The Klamath Tribes. Specific KBRA programs potentially affecting trust resources and other traditional resources include:

- Tribal Fisheries and Conservation Management Program

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<sup>3</sup> Tribal Trust Resources and other traditionally used resources are also discussed in Sections 3.2, 3.3, 3.4, and 3.5 of this EIS/EIR.

- Klamath Tribes Interim Fishing Site
- Mazama Forest Project

Other KBRA programs would have effects on trust resources of aquatic resources, water quality, and terrestrial resources; these programs' effects are discussed in Sections 3.2, 3.3, and 3.5 of this EIS/EIR.

*Implementation of the Tribal Fisheries and Conservation Management Program could result in impacts/effects to Trust Resources and other traditionally used resources.* As the original stewards of the natural resources of the Klamath Basin, The Klamath Tribes hold special positions in the Basin and have interests in and a traditional relationship to the Basin ecosystem and its fisheries. Implementation of the Tribal Fisheries and Conservation Management Program would provide funding to assist the tribe in developing their capacity to participate in resource management activities within the Basin, particularly relating to tribal fishing and revitalization of tribal subsistence and other economic activities. The timing of and specific locations where these resource management actions could be undertaken is not certain but the improvements they are anticipated to support in trust resources would contribute to the positive effects of hydroelectric facility removal. Implementation of the Tribal Fisheries and Conservation Management Program would generate beneficial effects to trust resources and other traditionally used resources. Implementation of specific plans and projects associated with the Tribal Fisheries and Conservation Management Program will require future environmental compliance as appropriate.

*Establishment of The Klamath Tribes Interim Fishing Site could result in impacts/effects to Trust Resources and other traditionally used resources.* Actions associated with The Klamath Tribes Interim Fishing Site include establishment of an interim fishing site for Klamath Tribal members between Iron Gate Dam and Interstate -5. The improvement in salmon fishery access generated by development of The Klamath Tribes Interim Fishing Site would contribute to the positive effects of hydroelectric facility removal. Establishment of The Klamath Tribes Interim Fishing Site would generate beneficial effects to trust resources by providing tribal members with access to the salmon fishery prior to hydroelectric facility removal.

*Implementation of the Mazama Forest Project could result in impacts/effects to Trust Resources and other traditionally used resources.* Actions associated with the Mazama Forest Project include the purchase and management of 90,000 acres of timberland on former reservation land owned by the Klamath Tribe. The improvement in trust resources and other traditionally used resources generated by the Mazama Forest Project would contribute to the effects of hydroelectric facility removal. Implementation of the Mazama Forest Project would generate beneficial effects to trust resources and other traditionally used resources because of the implementation of appropriate forest management plans. Implementation of specific plans and projects associated with the Mazama Forest Project will require future environmental compliance as appropriate.

### **Alternative 3: Partial Facilities Removal of Four Dams**

*Partial facilities removal could affect tribal trust resources.* Under the Partial Facilities Removal of Four Dams Alternative, four dams and their associated hydroelectric facilities would be partially removed to provide for fish passage. Keno Dam would be transferred to the DOI, The East and West Side Facilities would be decommissioned, the KBRA would be implemented, and the Yreka water supply pipeline would be installed. Implementation of the Partial Facilities Removal of Four Dams Alternative, including the KHSA and KBRA, would, in the long-term benefit water, aquatic, and terrestrial resources issues related to trust resources and rights identified by The Klamath Tribes (Table 3.12-1). Actions addressing these issues are presented in Sections 3.2, 3.3, 3.4, and 3.5 of this EIS/EIR.

### **Alternative 4: Fish Passage at Four Dams**

*Fish passage at four dams could affect tribal trust resources.* Under the Fish Passage at Four Dams Alternative, operation of the existing dams and hydroelectric facilities would continue along the Klamath River and fish passage facilities would be constructed at the four dams. Keno Dam would not be transferred to DOI and the KBRA would not be implemented. Implementation of the Fish Passage at Four Dams Alternative would benefit fish populations. However, implementation of this alternative would not fully resolve the water, aquatic, and terrestrial resources issues related to trust resources and rights identified by The Klamath Tribes (Table 3.12-1). Under the Fish Passage at Four Dams Alternative issues related to water, aquatic, and terrestrial resources related to trust resources and rights would persist.

### **Alternative 5: Fish Passage at Two Dams, Remove Copco 1 and Iron Gate**

*Fish passage at two dams and facilities removal of two dams could affect tribal trust resources.* Under the Fish Passage at Two Dams, Remove Copco 1 and Iron Gate Alternative, two dams, their associated hydroelectric facilities, and fish hatchery facilities along the Klamath River would be removed and fish passage facilities would be constructed at two dams. Under this alternative, Keno Dam would not be transferred to the DOI and the KBRA would not be implemented. Implementation of the Fish Passage at Two Dams, Remove Copco 1 and Iron Gate Alternative would address the water, aquatic, and terrestrial resources issues related to trust resources and rights identified by The Klamath Tribes (Table 3.12-1), but not to the same degree as the Proposed Action or Partial Facilities Removal of Four Dams Alternatives. Actions addressing issues related to water, aquatic, and terrestrial resources are presented in Sections 3.2, 3.3, 3.4, and 3.5 of this EIS/EIR.

#### **3.12.3.2 Quartz Valley Tribe**

##### **Quartz Valley Tribe History**

Most of the Quartz Valley Indian Reservation tribal members are descendants of people of Karuk ancestry, although a few tribal members are also of Shasta ancestry. Therefore, their cultural traditions are similar to those described in the Karuk section of this report.

The Quartz Valley Indian Reservation is a federally recognized tribe representing people of upper Klamath (Karuk) and Shasta Indian ancestry. The Quartz Valley Indian

Reservation is in Siskiyou County near the community of Fort Jones. The population is around 126, with a tribal enrollment of about 150. Total reservation size is 174 acres. Some tribal members are descendants of the same tribal leaders that signed the unratified 1851 Treaty R negotiated between Indian Agent Redick McKee and Indian inhabitants of Scott Valley and the upper Trinity and Klamath Rivers. The original Quartz Valley Reservation, once near the present-day reservation, was abolished in the 1960s.

The current Tribal mission is stated as:

While on earth we must practice stewardship, protection, and enhancement of the air we breathe, the water we drink, the soil that supports us, and the lives we cherish. It is our duty to protect and enhance these resources for the continued prosperity of the Quartz Valley Indian Tribe and our fellow brothers and sisters we share this earth with.

In partial fulfillment of the mission statement, the tribe employs several full-time and part-time positions to operate the Tribal Environmental Protection Agency. Current achievements are creek restoration projects, salmon surveys, establishment of a native garden, and the recent opening of a microbiology lab for testing the Tribe's groundwater.

#### **Quartz Valley Tribe Cultural Practices**

##### **Fishing, Trade and Barter, Religious Practices, and Oral Traditions**

The Indians of the Quartz Valley Reservation are related to Karuk people and thus share their cultural practices and values with the general culture described for the Karuk Tribe.

#### **Quartz Valley Tribe Potentially Affected Trust Resources**

Government-to-government consultation was held with the Quartz Valley Indian Community on September 30, 2010. The tribe refrained from making any comments.

The Quartz Valley Reservation does not have a reserved Klamath River fishery. The Tribe is not reliant on Klamath River water, nor does the Tribe retain Klamath River reserved water rights. The Tribe's land base is not along the Klamath River. Therefore, there are no primary effects on Quartz Valley trust resources and other resources traditionally used by the Tribe. While there may be secondary effects on tribal health and cultural well being, these were not asserted in the government-to-government consultation.

#### **Quartz Valley Tribe Health Impacts**

The members of the Quartz Valley Reservation refrained from making any comments.

#### **Alternative 1: No Action/No Project - Quartz Valley Tribe and Damming of the River**

The members of the Quartz Valley Reservation refrained from making any comments. The current operations of the four Klamath River dams under the No Action/No Project Alternative would result in no change from existing conditions.



### **Quartz Valley Tribe Consequences of Action Alternatives**

The Quartz Valley Reservation is not along the Klamath River and the Tribe does not have a reserved Klamath River fishery or reserved water rights. Therefore, implementation of the Proposed Action or alternatives would not affect Quartz Valley Reservation trust resources or other resources traditionally used by the Tribe.

#### **3.12.3.3 Karuk**

##### **Karuk History**

The Karuk Tribe has been federally recognized since 1979 and occupies territory along the middle section of the Klamath River. The 2000 United States Census reported tribal membership to be 2,702 individuals. In 2004, the California Department of Housing and Community Development reported tribal membership to be 3,164 individuals. Currently, Karuk are one of the largest tribes in California with approximately 4,800 members. The Karuk maintain offices in Orleans, Humboldt County; Happy Camp, Siskiyou County; and Yreka, Siskiyou County, all in California.

The tribe's ancestral territory was about 1.4 million acres. Currently, the Karuk own 652 acres in trust status. The Karuk Tribe is a Self-Governance Tribe under Indian Self-Determination Act of 1975 (California Department of Housing and Community Development, California Indian Assistance Program 2004, as cited in DOI 2011a and b). The tribe has a constitution that was initiated in April 1985 and the Karuk maintain a robust Natural Resources Department.

##### **Karuk Cultural Practices**

The Karuk Tribe has effectively maintained its cultural identity and traditional practices. Tribal members still engage in traditional hunting, gathering, and resource management activities. This includes preservation and use of the Karuk language, basket-making, fabrication of regalia, practice of traditional religious ceremonies, and stewardship of natural resources through use of fire and harvest management techniques.

##### **Fishing**

The Klamath and Salmon River fishery and other resources supported more than 100 ancestral Karuk villages along the Klamath and Salmon Rivers. Karuk established villages on beaches, river bends, benches, and near fishing sites to exploit riverine resources. Indeed, Karuk incorporate ritual, spiritual, and technical elements of their culture to facilitate management and enrichment of local ecosystems. These culturally based natural resource management practices are articulated in the Karuk Tribe's Eco-cultural Resources Management Plan.

The Karuk diet traditionally consisted mostly of salmon, deer, and acorns. Fish, especially salmon, have always been a major food resource and the focus of ceremonies for the tribe. Karuk use several methods, both traditional and contemporary, to catch fish. Fish important to the Karuk include spring-run Chinook or king salmon, fall-run Chinook, out-migrating Chinook smolt, coho or silver salmon (also called dog salmon), steelhead, trout, sucker, bullhead, sturgeon, and Pacific lamprey. Freshwater mussels

also have cultural significance for the Karuk not only as food, but also as important tools. For example, a mussel tool, an *ishuvar*, is used in traditional basket-making.

### **Religious Practices**

Ceremonies provide insight into the cultural life and underlying values of the Karuk. These ritualistic celebrations also demonstrate the interrelationship of Karuk and other tribes along the Klamath River. In one respect, the ceremonies are reenactments of stories involving the *ikxareeyavsa*, or immortal ones. However, these ceremonies go beyond symbolism to teach important practical lessons about careful management of resources, hard work, and the importance of observing rituals.

The Karuk are known among tribes in the Klamath Basin as “The Fix-the-World People” because of their role in the annual *Piky’avish*, or World Renewal Ceremonies. *Piky’avish* starts with the First Salmon Ceremony in early spring and continues throughout late summer into early fall. The scheduling of the dance cycle is determined each year by a ceremonial leader, who also appoints a *fataveenaan* (medicine man or priest) each year. This appointment is both a source of honor and a great deal of work because the *fataveenaan* is required to undergo a lengthy ordeal of fasting, praying, and walking the medicine trails.

The First Salmon Ceremony marks the passing of the first spring Chinook salmon up the Klamath River. This migrating salmon was allowed to pass all the way up the Klamath River to its spawning ground. Indians believed that the first spring Chinook migrating upstream would leave its scales at each spawning location for the rest of the salmon run to follow. Eating this first migrating salmon of the year was considered taboo; if eaten, it was believed to cause convulsions and death. Permitting this fish to pass safely upstream lifted the taboo and allowed the people to fish for salmon in the river. The dramatic decline in the spring Chinook run has made it impossible for the Klamath Basin tribes to conduct the First Salmon Ceremony.

The Karuk and Yurok Tribes coordinate the performance of their First Salmon Ceremonies based on the appearance of fish in the Klamath River. Chinook historically spawned as far north as the Williamson River, an area that was available as spawning grounds prior to the damming of the Klamath River and the reconstruction of Klamath Lake in its present form. The First Salmon Ceremony is typically conducted around April when the fish first breach the sandbar at the mouth of the river, marking their transition from the Pacific Ocean back to the fresh water of the Klamath River.

The most important of Karuk ceremonies is *Piky’avish*, or literally “fix the world.” Called by different names in by different tribes, many tribes of the Klamath as well as the Pacific Northwest practice a similar ceremony. In Kroeber and Gifford’s *Karok Myths* (1980), tribal member Georgia Orcutt captured the emotional nature of the *Piky’avish* as follows: “At the beginning of the *Piky’avish*, it looks like everything down, nobody happy. *Piky’avish* means ‘making the world right.’ *Fatawanun* [*fataveenan*] fixed it so everything is coming up nice.”

According to Kroeber and Gifford (1980), the Karuk ceremony has three major aspects:

The first is a period of usually not more than ten days during which the priest remains much in the sweathouse, fasts, and prays for abundance of food, the elimination of sickness and the stability of the world. He also visits sacred spots; and young men engage in archery contests. The second part is the climax of the ceremony, when the priest keeps an all-night vigil by a sand pile called *yuxpit*. This vigil is accompanied and followed the next day, by the Deerskin Dance, or its surrogate, an imitation affair employing branches instead of deerskins; at *Inam* [*Inaam*] and *Katamin* [*ka'tim'iin*] the War Dance is part of the dance ritual. The third part is the anticlimactic retreat of the priest and other officials.

The ceremonies feature a variety of ritual dances. The Jumping Dance (or Jump Dance) is held in the spring during the first salmon run. The Deerskin Dance is held in the fall in association with the acorn harvest and the second salmon run. It is performed in alternating years with the Medicine Dance, during which other decorated skins including martin and otter are displayed rather than the famous white deerskins. Both dances feature displays of wealth, along with dancing and singing.

According to Karuk creation stories, fishing weirs were created by one of the immortals. The fishing harpoon also appears in one of a series of creation stories that present accounts of the origins of humans, institutions, and tools. In the story, the Blue Heron develops the two-pointed harpoon so that even people without rights or nets could still catch fish. According to the story, *Chukchuk* took a long stick and fastened two smaller sticks to the end of it. He thought, “I will spear salmon. Let me make that kind. Let me make it so that if a man has no fishing place and he sees salmon he can catch them. If he has no net he will kill them in this way” (Kroeber 1925a).

### **Karuk Potentially Affected Trust Resources**

In a government-to-government consultation meeting concerning Karuk Tribe trust resources affected by current dam operations held on September 30, 2010, the Karuk Tribe asserted the following as tribal trust resources: water, fish, mollusks, riparian plants, wetlands, and all other plants and wildlife dependent on a healthy river and playing a role in Karuk ceremonies. This assertion was coupled with the assertion that the United States has a trust responsibility to protect such resources and ensure that such resources are managed for the beneficial use of the Tribe and its membership. In addition, the Karuk assert that federal government has responsibilities to the Tribe in the areas of social welfare, education, and health and a responsibility to uphold certain federal laws, such as the National Historic Preservation Act and the American Indian Religious Freedom Act. The United States does not necessarily agree that all of the above resources are in trust (and therefore form the basis of a trust relationship), but the resources are important to the Karuk (and thus to the United States) for their traditional ceremonial use. Table 3.12-2 identifies Karuk traditionally used resources that are affected by the four Klamath River dams.

**Table 3.12-2. Effects of Current Dam Operations on Resources Traditionally Used by the Karuk Tribe**

Other Resources Traditionally Used By The Tribe	Effects
Water resources	Altered flows
	Altered water temperature regime
	Reduced bedload sediment transfer
	Degraded water quality caused by nutrient input, dissolved oxygen, pH, algal toxins and other contaminants
	Diminished aesthetics
	Human exposure to toxic water while conducting cultural activities
	Diminished opportunity for traditional bathing
Aquatic resources	Loss of habitat
	Less suitable water temperature regime
	Reduced bedload transfer
	Increased potential for disease/parasites
	Reduced population size
	Loss of traditional salmon diet and increased risk of heart disease, strokes, diabetes, and obesity
	Depression, alienation, and possible suicide
	Tribal members leaving ancestral territory
Lost opportunities for transmitting traditional knowledge	
Terrestrial resources	Reduced food availability
	Loss of riparian habitat
	Diminished plant availability for cultural practices and related benefits
	Loss of opportunity for inter-generational traditional knowledge transmission

Source: DOI 2011a, 2011b

Unlike the other Federally-recognized tribes in the Basin, Congress never formally ratified the treaty negotiated between the United States and the Karuk Tribe in 1851, and no statute or executive order otherwise set aside reservation lands for the Tribe.

However, the United States has more recently taken lands into trust for the benefit of the Karuk Tribe, including over 810 acres in Siskiyou County and approximately 40 acres in Humboldt County. Most of the Tribe's aboriginal lands along the Klamath River, above the Klamath Trinity Confluence, now form part of the Klamath National Forest. Any fishing and concomitant water rights to which the Karuk Tribe may be entitled have not yet been determined. Regardless, the Karuk assert that an inability to use traditional resources affects their general health and well being and cultural values.

In the consultation meeting, only effects on fish and water were discussed in detail. Nonetheless, the lack of fish in the local economy has secondary effects on general tribal health and cultural well being. The Karuk Tribe, when asked if such resources were affected by the current dam operations, emphatically responded, "Yes." Tribal representatives at the meeting stated that water quality and fish returns have diminished,

and, being a tribe that lives along the river, their aesthetic quality of life has also diminished. They rarely bathe in the river, as they did historically, and in an area with fewer available fish, tribal members are likely to consume less of the traditional food base and pay less attention to the culturally inherited management traditions of a “Salmon People.” This situation has exacerbated related impacts on tribal health, such as higher rates of obesity, diabetes, heart disease, stroke, and mental diseases such as depression.

Since the construction of the dams on the Klamath River, the numbers of a variety of river species have plummeted. Some of these fish had traditionally been a source of food and cultural ceremonies and practices for the Karuk Tribe, as well as a means of trade and income. Not only salmon, but also steelhead, sturgeon, suckers, lampreys, clams, mussels and other aquatic species appear to have declining populations as a result of the dams effects on water flow, temperature, and on the river environment.

Karuk believe one of the most significant impacts of the Klamath River dams is the way that the natural process of seasonal warming and cooling trends in the river is altered by the presence of reservoirs. In effect, the reservoirs appear to create a “thermal lag” in both the spring and the fall. This means that the river warms more slowly in the spring and cools more slowly in the fall than it would without the dams. The result of these thermal effects is a delay in timing of runs for the migration of fall Chinook salmon. For Karuk, this translates into a shorter fishing season in the fall. Before construction of Iron Gate Dam, Karuk fishermen report that fishing at Katimiin started in late July. Since construction of Iron Gate Dam, fish do not typically arrive at Ishi Pishi Falls until early September. In addition to limiting the number of fishing days available in the fall, the opportunity to harvest spring Chinook salmon has been completely lost to the Karuk since construction of Iron Gate Dam.

Water quality plays a very significant role in Karuk tribal culture because of its effect on culturally relevant aquatic species. Water quality also affects the ability of *Fataveenan*, or World Renewal priests, to conduct ceremonies. *Pikiavish* starts with the Spring Salmon Ceremony in early spring and continues throughout late summer into early fall. Key ceremonial participants bathe multiple times a day in the Klamath River for 10 days in a row. This is the time of year when the blooms of the toxic algae, *Microcystis aeruginosa*, are at their peak.

To avoid interfering with cultural and religious ceremonies and practices, the water conditions in the Klamath River must allow for specific species to be present in adequate supplies. This includes species that are consumed by participants, such as salmon and lamprey as well as species used in ceremonies, such as crayfish and willows. Water conditions must also be safe for what is usually termed “recreational contact” as well as human consumption.

Degraded water quality in the Klamath Basin, including the seasonal presence of algal toxins in the Klamath River and reservoirs, has impaired the ability of Karuk to use the water for cultural purposes. Known and/or perceived health risks associated with degraded water quality have resulted in the alteration of cultural ceremonies to exclude or limit ingestion of river water. Additionally, known or perceived risk of exposure to degraded water quality conditions during ceremonial bathing and traditional cultural activities, such as gathering and preparing basket materials and plants for other purposes, has resulted in an impairment of cultural use.

According to Karuk cultural biologist Ron Reed, the World Renewal Ceremony is held on the Klamath River at Clear Creek, Somes Bar, and Orleans during July, August, and September of each year. The medicine man, who leads the ceremony, walks 14 miles through the ridges and hills along the Klamath River and is joined halfway through his journey by children and adults of the tribe who follow him the rest of the way for good luck. Traditionally, when the medicine man reached the Klamath River at the end of this walk, he drank water from the river to complete the ceremony. Currently, this does not occur very often because blooms of *Microcystis aeruginosa* have led to health warnings along the river. However, children are still known to jump in the river and drink the water.

Bathing in the river is an important part of most Karuk ceremonies. For example, bathing in the Klamath River and its tributaries is a requirement for participants in the Brush Dance Ceremony. Bathing is also associated with funeral services, subsistence practices, recreational swimming, courtship, and individual hygiene. Bathing associated with funeral rituals occurs year around and includes preparation for burial and purification after burial.

Karuk tribal member collect willow roots, wild grape, cottonwood, and willow in the riparian zone along the Klamath River and use these materials to make baskets. Traditional collection of these basketry materials often involved wading in the water, and washing and cleaning the materials in the river. Willows are peeled by mouth following cleaning with river water, and plants are also collected for food, medicine, and other cultural functions. Given current degraded water quality conditions, ingestion of water as a result of traditional cultural activities or use of materials harvested from the river may pose a potential health risk.

Prior to construction of dams on the Klamath River, steelhead spawned freely not only in the Klamath River and its tributaries, but in Upper Klamath Lake and beyond. An estimated 650 miles of salmon habitat were lost with the construction of four dams in the Klamath River (unpublished report prepared for The Klamath Tribes and Yurok Tribe). This is a significant amount of habitat no longer available for spawning and rearing. In interviews with Karuk tribal members, they refer to loss of steelhead runs that were once vigorous, supplying fish even at times of the year when salmon runs were no longer taking place. Furthermore, steelhead eat juvenile salmon; therefore, without a healthy salmon run, there will not be a healthy steelhead run.

Steelhead can be a resident fish or they can be anadromous. One prevalent theory about the loss of migratory steelhead is that steelhead produced in the hatchery at Iron Gate Dam comprises a resident population. They are released from the hatchery into a nutrient-rich system immediately downstream of Iron Gate Dam, where there are no triggers to force them to migrate. They have enough food to keep them there; and no other steelhead are coming from downriver to compete with them, increase the densities, and compel them to move. The result is a resident population of non-migratory steelhead.

This lack of migratory steelhead affects the local economy and the well-being of the Karuk. Steelhead fishermen from outside the area used to pay for the privilege of fishing for the Klamath steelhead, bringing money into the local economy to the benefit of the Karuk. In the late 1960s and early 1970s, steelhead fishermen lined the banks of the Klamath River. Today, the numbers of steelhead are so low that the sport is no longer viable.

Karuk tribal members who harvest lamprey eels report an extreme decline in their numbers. Lamprey has traditionally been an important food source for the Karuk and has augmented salmon in their diet, particularly as salmon have become scarce.

Freshwater mussels have also been both an important food source for the Karuk and other groups and an essential part of tribal ceremonies. During the early 20th century, mussels were gathered for food and for use in rituals late in the season when the river flows were low. These low flow periods are unfortunately the time of year when the mussels are most contaminated. Even though there are few to be found, people continue to use freshwater mussels as a food source, but their use in ceremonies has been greatly reduced. Historically, women also used the mussel shells for spoons, tools, and jewelry.

### **Karuk Health Impacts**

The Karuk have been denied traditional food sources such as salmon over the last 150 years, and have increasingly adopted western foods. The decrease in the availability of traditional foods, including salmon, trout, eel (various species of lamprey), mussels, and sturgeon, is responsible for many diet-related illnesses among Indians, including diabetes, obesity, heart disease, tuberculosis, hypertension, kidney problems, and strokes (Karuk Department of Natural Resources 2007). These conditions result from the lack of proper nutrient content in foods consumed in place of the traditional foods, as well as from the decrease in exercise associated with fishing and gathering food.

The health of many people, including the Karuk, is closely linked to the health of the river. The three largest tribes in California eat fish from the Klamath River, and the declining river system is directly related to the inability of tribal members to continue eating traditional diets. Although early anthropologists described the Klamath River tribes as some of the wealthiest people in California, since European contact, they have become some of the poorest. One result is that the Klamath corridor has some of the lowest incomes and the highest rates of hunger in California. Local populations have traditionally had much of their food supplied by the Klamath River. This continues to be

the case, but with the decline in river health this becomes increasingly difficult. Given the economic impoverishment of the region, there is no general access to healthy alternative foods without subsistence fishing and gathering (See also Section 3.16, Environmental Justice). As a result, hunger is significantly related to the presence and effects of the dams, and these effects are directly connected to the traditional subsistence economy.

The estimated diabetes rate for the Karuk Tribe is 21 percent, nearly four times the U.S. average, and the estimated rate of heart disease for the Karuk is 39.6 percent, three times the U.S. average. Spring Chinook salmon represented a large volume of healthy food for the Karuk people until the 1960s and 1970s. Diabetes is a recent occurrence in the Karuk population. In the 2005 Karuk Health and Fish Consumption Survey, Karuk families were asked when diabetes first appeared in their family and when spring salmon stopped playing a significant role in their family diet. Over 90 percent of reporting families say that before 1950 spring salmon played a significant role in the family diet and less than 15 percent reported occurrence of diabetes. By 2005, no families claimed that spring salmon played a significant role in the family diet and nearly 100 percent reported occurrence of diabetes (Norgaard 2005).

Historically, consumption of fish by the Karuk Tribe was estimated at 450 pounds per person per year, whereas in 2003, the Karuk people consumed fewer than 5 pounds of salmon per person. In 2005, more than 80 percent of Karuk households surveyed reported that they were unable to harvest adequate amounts of eel, salmon, or sturgeon to fulfill their family needs. Furthermore, 40 percent of Karuk households reported that there are fish species that their family historically caught that are no longer harvested.

Difficulty in meeting basic needs can result in overwhelming physical and psychological stress. Traditionally, fishing is done by Karuk men. With the loss of the salmon comes a loss of a man's sense of pride in being able to provide food for his family and tribe. For a tribe that has called itself The People of the Fish, there is an indisputable loss of identity when there are no fish. For a people whose belief system includes their specific role on earth, that they have a predefined relationship with nature that needs to be honored, there is a sense of failure when they are unable to fulfill that role.

The changes that have caused wildlife to becoming scarce and the rivers polluted, may make it hard for young people to understand the ways of their parents and grandparents. They wonder why the tribe focuses on ceremonies that revolve around periodic fish runs and ritual eating of salmon when the availability of fish is so erratic. Never having seen it themselves, they do not understand that in the past there could be eight yearly runs of salmon in the Klamath when all they see is one-half of a fall run. Without tradition as an anchor, young people are sometimes drawn to gangs to establish a feeling of belonging, and leave Karuk territory for cities (DOI 2011a, 2011b).

The act of eating salmon from the Klamath River affirms sense of place, identity, connection, and community. This orientation draws individuals into relationships of responsibility to care for the fish. Such a world view and set of relationships are in stark



contrast to the separate, individualistic modality of the dominant culture in which plants and animals are “resources” and people are expected to watch out for their individual interests. Relationships between Karuk people and plants and animals fulfill profound mental, emotional, and spiritual functions. In the absence of these food species, traditional activities such as dip net-fishing, eeling, or berry picking have come to an end.

The destruction of the Klamath River fishery has led to both poverty and hunger. As described above, prior to contact with Europeans and the destruction of the fisheries, the Karuk, Hoopa, and Yurok Tribes were the wealthiest people in what is now known as California, and now they are amongst the poorest. The devastation of the resources, especially the fisheries, is directly linked to the disproportionate unemployment and low socioeconomic status of Karuk people today. This dramatic reversal is directly linked to the destruction of the fisheries resource base. Poverty and hunger rates for the Karuk Tribe are among the highest in the state and nation. Median income for Karuk families is \$13,000. The poverty rate for Karuk tribal members in Siskiyou County is 88.4 to 91.9 percent. Section 3.16, Environmental Justice, offers more information regarding poverty and employment levels among populations in the area of analysis.

### **Effects Determinations**

#### **Alternative 1: No Action/No Project - Karuk and Damming of the River**

*Continued impoundment of water could affect tribal trust resources.* The dams are responsible for a drastic reduction in spawning habitat and many other changes in the river system, such as water quality, water temperature, and flow regimes. All of these changes have created an environment in which it is difficult or impossible for many species to flourish. In addition to environmental effects, the changes in the river caused by the dams secondarily have resulted in diminished physical, mental and social health. For thousands of years the Indians who depend on the river have been part of a functioning social, economic, and cultural health system that is currently dying.

Many historic and current factors, such as mining, timber extraction, agricultural production, and cattle grazing, affect the environmental integrity of the Klamath Basin. Mining activities in the Klamath Basin have significantly decreased over the last several decades, and timber extraction in the basin has slowly become controlled by better regulations at the federal and state levels.

However, the current operations of the four Klamath River dams adversely affect the resources traditionally used by the Karuk and, by extension, their cultural values, and their continued operation under the No Action/No Project Alternative would result in no change from existing conditions.

#### **Alternative 2: Full Facilities Removal of Four Dams Alternative (the Proposed Action)**

*Removal of the Four Facilities could affect tribal trust resources.* Under the Proposed Action, four dams and their associated hydroelectric facilities along the Klamath River would be removed. Keno Dam would be transferred to the DOI, the East and West Side Facilities would be decommissioned, the KBRA would be implemented, and the Yreka water supply pipeline would be installed. Implementation of the Proposed Action,

including the KHSA and KBRA, would, in the long-term benefit the water, aquatic, and terrestrial resources traditionally used by the Karuk (Table 3.12-2). Actions addressing these issues are presented in Sections 3.2, 3.3, 3.4, and 3.5 of this EIS/EIR.

### **KBRA**

The KBRA has several programs that could result in impacts/effects to traditional resources used by the Karuk. Specific KBRA programs potentially affecting traditional resources include the Tribal Fisheries and Conservation Management Program. Other KBRA programs would have effects on trust resources of aquatic resources, water quality, and terrestrial resources; these programs' effects are discussed in Sections 3.2, 3.3, and 3.5 of this EIS/EIR.

*Implementation of the Tribal Fisheries and Conservation Management Program could result in impacts/effects to traditionally used resources.* As the original stewards of the natural resources of the Klamath Basin the Karuk hold a special position in the Basin and have interests in and a traditional relationship to the Basin ecosystem and its fisheries. Implementation of the Tribal Fisheries and Conservation Management Program would provide funding to assist the tribe in developing their capacity to participate in resource management activities within the Basin, particularly relating to tribal fishing and revitalization of tribal subsistence and other economic activities. The timing of and specific locations where these resource management actions could be undertaken is not certain but the improvements they are anticipated to support in trust resources would contribute to the effects of hydroelectric facility removal. Implementation of the Tribal Fisheries and Conservation Management Program would generate beneficial effects to traditionally used resources. Implementation of specific plans and projects associated with the Tribal Fisheries and Conservation Management Program will require future environmental compliance as appropriate.

### **Alternative 3: Partial Facilities Removal of Four Dams Alternative**

*Partial facilities removal could affect tribal trust resources.* Under the Partial Facilities Removal of Four Dams Alternative, four dams and their associated hydroelectric facilities would be partially removed to provide for volitional fish passage. Keno Dam would be transferred to the DOI, the East and West Side Facilities would be decommissioned, the KBRA would be implemented, and the Yreka water supply pipeline would be installed. Implementation of the Partial Facilities Removal of Four Dams Alternative, including the KHSA and KBRA, would, in the long-term benefit the water, aquatic, and terrestrial resources traditionally used by the Karuk (Table 3.12-2). Actions addressing these issues are presented in Sections 3.2, 3.3, 3.4, and 3.5 of this EIS/EIR.

### **Alternative 4: Fish Passage at Four Dams**

*Fish passage at four dams could affect tribal trust resources.* Under the Fish Passage at Four Dams Alternative operation of the existing dams and hydroelectric facilities would continue along the Klamath River and fish passage facilities would be constructed at the four dams. Keno Dam would not be transferred to DOI and the KBRA would not be implemented. Implementation of the Fish Passage at Four Dams Alternative would benefit fish populations. However, implementation of this alternative would not fully

resolve the water, aquatic, and terrestrial resources issues related to traditionally used resources identified by the Karuk Tribe (Table 3.12-2). Under the Fish Passage at Four Dams Alternative issues related to water, aquatic, and terrestrial resources related to traditionally use resources would persist.

**Alternative 5: Fish Passage at Two Dams, Remove Copco 1 and Iron Gate**

*Fish passage at two dams and facilities removal of two dams could affect tribal trust resources.* Under the Fish Passage at Two Dams, Remove Copco 1 and Iron Gate Alternative, two dams, their associated hydroelectric facilities, and fish hatchery facilities along the Klamath River would be removed and fish passage facilities would be constructed at two dams. Under this alternative, Keno Dam would not be transferred to the DOI and the KBRA would not be implemented. Implementation of the Fish Passage at Two Dams, Remove Copco 1 and Iron Gate Alternative would address issues associated with the water, aquatic, and terrestrial resources traditionally used by the Karuk (Table 3.12-2), but not to the same degree as the Proposed Action or Partial Facilities Removal of Four Dams Alternatives. Actions addressing issues related to water, aquatic, and terrestrial resources are presented in Sections 3.2, 3.3, 3.4, and 3.5 of this EIS/EIR.

***Hoopa Valley Indian Tribe***

**Hoopa Valley Indian Tribe History**

The Hoopa Valley Indian Reservation is in the northeastern corner of Humboldt County in northern California, approximately 50 miles inland from the Pacific Ocean, and encompasses roughly 20 percent of Hupa aboriginal territory. The reservation, known as “the 12-mile square,” is laid out geometrically with sides approximately 12 miles in length for a total of a little less than 144 square miles. At close to 90,000 acres, the reservation is the largest in California.

The northern portion of the reservation is in Yurok ancestral territory. The Trinity River bisects the reservation. A small length of the northern border of the reservation includes about a quarter mile reach of the Klamath River called Saints Rest Bar several miles upriver from Weitchpec, California. The 2000 U.S. Census counted 2,633 people on the reservation, and the tribe listed an enrollment of 2,130 in 2004.

The word Hupa is from the Yurok name for the Hoopa Valley. Hoopa is used when referring to the name of the tribe, and Hupa is used when referring to the people, place, or culture. The Hupa called themselves *Natinook-wa*, meaning “people of the place where the trails return.” The Hupa are culturally related to the Yurok and also the Karuk.

Currently, the Hoopa Valley Tribe employs hundreds of people and has established a wide array of industries that support numerous business enterprises. Timber extraction, gravel extraction, modular house manufacturing, a hotel, a restaurant, and a small casino are the major economic enterprises of the Hoopa Valley Tribe. The Hoopa Valley Tribe also maintains a modest fishery program.

## **Hoopa Valley Indian Tribe Cultural Practices**

### **Fishing**

The Trinity River is of prime importance to the Hoopa Valley Tribe because it is the river that runs through the Hoopa Valley Indian Reservation. Fish destined for the Trinity River must pass through the lower Klamath River and are therefore affected by Klamath River conditions. Poor conditions in the Klamath River could affect fish populations available to the Hoopa Valley Tribe.

The Trinity River is of unique and irreplaceable value to the Hupa. It is a vital natural resource that is the foundation of their social and cultural way of life. At its most basic level, the river has always been a source for food and other necessities of daily Hupa life. The river also provides basket materials, fish net materials, and a means of transportation. Even rocks from the river are used by Hupa people in their traditional cultural practices. Uses of the Trinity River by the Hupa people are highlighted by maintenance of fisheries and religious ceremonies (e.g., ceremonies that involve prayers offered by people trained to make medicine).

Many natural foods were available to the Hupa, with salmon and acorns providing the bulk of the native diet. When the salmon entered the Trinity River each spring and fall, the year's supply of fish was taken by Hupa using a variety of efficient devices. Other important fish include steelhead, sturgeon, and lamprey eels. Surplus stocks of fish were preserved for future consumption by drying in the smoke of fires.

### **Religious Practices**

Religious beliefs and practices played an important role in everyday life for the Hupa people. An almost endless series of taboos had to be scrupulously observed, daily supplications were made for health and wealth, and acts were performed to ensure luck. In addition, each person was supposed to maintain a devout frame of mind throughout the day, particularly during important group rituals when reverent thoughts by participants and onlookers were considered essential for their success.

The religion of the Hupa is based on individual effort through ritual cleanliness as well as ceremonies that bring the entire tribe together. The tribes of the region, including the Hoopa, practice the annual World Renewal Ceremonies, which involve songs and dances that have been preserved for generations. The Hoopa and Yurok tribes also practice the White Deerskin Dance. These rituals are associated with the river as well as with medicine to cure sickness, but also roots, herbs, and bark used to promote spiritual health. The Brush Dance, for example, is a social event as well as a healing ceremony in which certain tribal members dance, sing, make medicine, and pray to bless a particular sick child or infant.

The Hoopa Valley Indians continue to conduct many of their traditional religious ceremonies, and the cultural significance of the Trinity River is captured in many of these ceremonies. Ancient religious sites on the river were believed to be designated by spiritual deities at a time beyond living memory are still used in current tribal rituals.

Prayers conducted at the dances are directed toward the well-being of everyone, and food, particularly fish, is shared with all who attend the ceremonies.

The greatest divinity for the Hupa people is *Yimantuwingyai*, “the one lost (to us) across (the ocean),” also known as *Yimankyuwinghoiyan*, “old man over across,” who establishes the order and condition of the world and is the leader of the *kihunai*, or ancestors. *Yimantuwingyai* seems to be a combination of the tricky and erotic *Wohpekumeu* and the more heroic *Pulekukwerek* of the Yurok, who is also similar to the Hupa *Yidetuwinyai*, “the one lost downstream” (Kroeber 1925b:134). A traditional story concerning *Yidetuywingyai* tells of the time when the sun and earth alone existed. From the sun and earth were born twins, *Yidetuywingyai* and the ground on which men live. This particular cosmogony has not been found among the Yurok or Karuk and may have reached the Hupa through the influence of more southerly tribes (Kroeber 1925b:134).

The White Deerskin and Jump Dances, the Flower Dance, and the Brush Dance all demonstrate the importance of the river flows to the Hupa people and how vital the rivers are to Hupa familial and tribal material well-being and self-esteem. Unfortunately, the Hupa report that, although these dances and other religious ceremonies have continued in modern times, the decline of the Trinity River’s health has made their practice increasingly difficult for Hupa medicine people, dancers, and others. Thus, the adverse impacts of an unhealthy river extend beyond the fisheries to religious ceremonies.

The Hupa honor the Earth and the Creator for providing sustenance and for allowing the continuance of the tribe in two major ceremonies celebrating world renewal, the White Deerskin Dance and the Jump Dance. Both ceremonies are closely tied to the river. A Hupa name for the White Deerskin dance is *hun’q’ehch’idilye*, “along the river religious dance.” This important ceremony is conducted at village sites and resting places near the Trinity River and involves travel on the river. The exact timing of the dances depends on the river and its waters. The White Deerskin Dance is held from late August into September. The Jump Dance follows 10 days after the conclusion of the White Deerskin Dance. Both dances are elaborate ceremonies that take place over a period of 10 days. As part of the rituals, the Hupa offer salmon they have caught at their fishing sites for the ceremony and to share with the participants and attendees.

The Jump Dance takes place along the river and has its own dance steps, songs, and regalia, and is dedicated to the good of the world. The completion of the Jump Dance signals a blessing for the year to come, with the hope that all people may be satisfied with small quantities and have their needs met. Both the White Deerskin Dance and the Jump Dance depend on a healthy river for fish, basket materials, bathing, and ambiance. The flows of the river are also a central element of these dances as they influence the dancers’ ability to travel the river in the manner of their ancestors. The Hupa claim that as the river’s flows have declined, so has the Hupa’s ability to practice these ceremonies.

The Boat Dance is a spectacular segment of the White Deerskin Dance involving dancing and singing while crossing the Trinity River. As the Boat Dance proceeds, the camps

follow the dancers from the east side of the river to the west side. In this way, the dance echoes the river's flows and their connotation of river health. The next day, as the dance continues, the camps move to different sites until the dance concludes.

The Brush Dance is held for the purpose of curing a sick baby or child. Hupa people traditionally bathe in the Trinity River each morning of the dance, and they use baskets made with willows growing along the river in the ceremony. The dance is called the Brush Dance because part of the ceremony requires the participants to fill their quivers with willow brush. Operations along the Trinity River are thought to have reduced the abundance of willow brush and other basket-making materials vital to this dance.

The Flower Dance is held at various Hupa towns along the river. The purpose of this dance is to train a girl who has just reached adolescence to lead a good life as an adult woman. The girl for whom the dance is held traditionally bathes at seven sacred places in the river during training in the Flower Dance ceremony.

**Hoopa Valley Indian Tribe Potentially Affected Trust Resources**

A government-to-government consultation meeting concerning the effects of current dam operations on Hoopa Valley Indian Tribe trust resources was held on November 8, 2010. Although current operations of the four Klamath dams are more likely to affect resources of the Klamath River, Klamath water quality affects resources traditionally used by the Hoopa and their fishing rights by adversely affecting fish destined for the Trinity River, which must pass through approximately 42 miles of the Klamath River before turning up the Trinity River and through the Hoopa Valley, where Hoopa Tribal members participate in a tribal subsistence fishery. Table 13.12-3 identifies Trust Resources and rights associated with the Hoopa Valley Indian Tribe.

**Table 13.12-3. Effects of Current Dam Operations on Hoopa Valley Indian Tribe Trust Resources and Rights**

Trust Resource/Right	Effects
Water resources	Altered flows
	Altered water temperature regime
	Reduced bedload sediment transfer
	Degraded water quality caused by nutrient input, dissolved oxygen, pH, algal toxins and other contaminants
Aquatic resources	Loss of habitat
	Less suitable water temperature regime
	Reduced bedload transfer
	Increased potential for disease/parasites
Terrestrial resources	Reduced food availability
	Loss of riparian habitat

Source: DOI 2011a, 2011b

The Hoopa Valley Tribe also provided information suggesting that no mitigation was historically required for the reduction of miles of salmonid fishery habitat upriver of Copco 1 and Copco 2 Dams because such mitigation was not required when the dams were completed. When other dams were constructed, mitigation was required for the loss of fish habitat, but only for the several miles between Iron Gate Dam and Copco No. 2 Dam, (i.e., the Iron Gate Fish Hatchery was not built to mitigate for the loss of all upriver habitat). The hatchery does not manage spring Chinook salmon because these fish were primarily affected by previous dam construction, and to a lesser extent than Iron Gate Dam.

### **Hoopa Valley Indian Tribe Health Impacts**

The secondary effects of the Klamath River dams on the people of the Hoopa Valley Tribe include emotional and physical health effects such as increased obesity, diabetes, heart disease due to loss of the traditional salmon diet, and depression, alienation, and suicide. Additionally, the tribal members experience a loss of opportunity for intergenerational transmission of traditional knowledge. These conditions result in tribal members, especially young people, leaving the reservation for opportunity elsewhere (DOI 2011a, 2011b).

### **Effects Determinations**

#### **Alternative 1: No Action/No Project - Hoopa Valley Indian Tribe and Damming of the River**

*Continued impoundment of water could affect tribal trust resources.* Members of the Hoopa Valley Tribe have offered firsthand accounts of the decline of the river and its effects on the people. Tribal member Jill Sherman stated:

Even when there are salmon in the rivers, tribal nets fill with moss because flows aren't adequate to keep the water cool, a depressing reminder that the rivers are no longer healthy. Watching the rivers deteriorate each year, unable to protect those resources they so cherish, has had a tremendous adverse psychological effect on the region's native peoples.

Byron Nelson, a Hupa elder, stated:

Though many Hupa and Yurok still hold to traditional beliefs and engage in certain time-honored practices such as shamanism and basketry, the decline of the rivers' health, the center of their culture and spirituality, has led to a loss of self-esteem, an increase in cynicism, and has greatly hurt the cohesiveness and health of these tribal communities. The rivers are the focalizing element of the society; with their loss, it seems much of the hope has also been lost.

According to Nelson, cultural stress related to an unhealthy river has resulted in a broad spectrum of social and educational problems, including the disruption of traditional occupations and the loss of opportunities for religious practice and community participation in tribal culture. Limitations in the tribes' access to resources has restricted the practice of some of their most important traditions, including freely fishing the once

prolific seasonal salmon runs and participating in the concurrent cycle of ceremonies. It appears that the access to resources may also be a cause of younger tribal members leaving the area.

The damming of the river has wide-ranging effects on the culture of the Hoopa Valley people. Despite significant degradation of the river ecosystem of the Klamath/Trinity region through the end of the 19th century and the first half of the 20th century, the Hupa persisted in their traditional reliance on the rivers and their resources. Although they found it increasingly difficult, the tribes continued to practice their ceremonies and religions; gathered vegetation for baskets, food, medicines, and other purposes; and met and ate together along the riverbanks. Fish caught by the tribes, as much as possible, continued to be an important component of their diets. Many of the current tribal members grew up with a strong physical connection to the rivers and great appreciation for the traditions and ways of life of their ancestors.

A reason for the ability of the tribes to maintain some of their traditional relationship to the rivers was that the rivers' flows remained relatively unimpeded. This all changed with the building of the dams. The dams, along with other diversions and impoundments in the Klamath/Trinity Basin, have dramatically altered the region's rivers. Fishing and traditional-use sites have become clogged with debris, and declines in fish population persist.

In the past, federal regulations governing fishing on the Hoopa Valley Indian Reservation have permitted the taking of fish for ceremonial purposes even when the fisheries were closed to harvest. This fact is evidence that the federal government recognizes that fishing and fish are an integral and indispensable part of the religious and ceremonial life of the tribe. Unfortunately, the poor condition of the fishery in recent times has in some instances forced the Hupa to purchase fish from sources off their reservations to provide for all who attend their ceremonies. Tribal elder Byron Nelson stated:

A lack of fish has resulted in the scaling down or even cancellation of ceremonies. The continual practice of ceremonies represents an important means for keeping tribal members who live off the reservations connected to their culture and families. However, without enough salmon, many do not come back; and the planning of ceremonies, once a time to appreciate nature's abundance and of spiritual celebration, often brings significant anxiety to the region's native peoples.

According to a report by the California Department of Fish and Game, the fish kill of 2002 affected all of the tribes along the Klamath River; however, the Trinity River in the Hoopa territory was also affected. Although a larger number of Klamath River fall-run Chinook died, a greater proportion of the Trinity River run was affected by the fish kill. This is because the Trinity run is substantially smaller than the Klamath run on an annual basis, and the Trinity run was at its peak during the height of the fish kill. The effects were more pronounced in the Trinity River than the Klamath River because the fish kill



occurred downstream of the confluence of the Trinity and the Klamath, and thus eliminated much of the fishing opportunity on the Trinity River.

Many historic and current factors, such as mining, timber extraction, agricultural production, and cattle grazing, affect the environmental integrity of the Klamath Basin, as noted above. However, the current operations of the four Klamath River dams significantly affect the trust resources of the Hoopa Valley Tribe and other resources traditionally used by the Hoopa, by extension, their cultural values, and their continued operation under the No Action/No Project Alternative would result in no change from existing conditions.

**Alternative 2: Full Facilities Removal of Four Dams Alternative (the Proposed Action)**

*Removal of the Four Facilities could affect tribal trust resources.* Under the Proposed Action, four dams and their associated hydroelectric facilities along the Klamath River would be removed. Keno Dam would be transferred to the DOI, The East and West Side Facilities would be decommissioned, the KBRA would be implemented, and the Yreka water supply pipeline would be installed. Implementation of the Proposed Action, including the KHSAs and KBRA, would, in the long-term benefit the water, aquatic, and terrestrial resources issues related to trust resources and rights identified by the Hoopa Valley Indian Tribe (Table 3.12-3). Actions addressing these issues are presented in Sections 3.2, 3.3, 3.4, and 3.5 of this EIS/EIR.

**KBRA**

Upon becoming a Party to the KBRA in accordance with Section 38, the Hoopa Valley Tribe will be eligible for funding to implement programs under the KBRA. The KBRA has several programs that could result in impacts/effects to Trust Resources and other traditional resources used by the Hoopa Valley Tribe. Specific KBRA programs potentially affecting Trust Resources and other traditional resources include the Tribal Fisheries and Conservation Management Program. Other KBRA programs would have effects on trust resources of aquatic resources, water quality, and terrestrial resources; these programs' effects are discussed in Sections 3.2, 3.3, and 3.5 of this EIS/EIR.

*Implementation of the Tribal Fisheries and Conservation Management Program could result in impacts/effects to Trust Resources and other traditionally used resources.* As the original stewards of the natural resources of the Klamath Basin the Hoopa Valley Tribe holds a special position in the Basin and has interests in and a traditional relationship to the Basin ecosystem and its fisheries. Implementation of the Tribal Fisheries and Conservation Management Program would provide funding to assist the tribe in developing their capacity to participate in resource management activities within the Basin, particularly relating to tribal fishing and revitalization of tribal subsistence and other economic activities. The timing of and specific locations where these resource management actions could be undertaken is not certain but the improvements they are anticipated to support in trust resources would contribute to the effects of hydroelectric facility removal analyzed above. Implementation of the Tribal Fisheries and Conservation Management Program would generate beneficial effects to Trust Resources

and other traditionally used resources. Implementation of specific plans and projects associated with the Tribal Fisheries and Conservation Management Program will require future environmental compliance as appropriate.

**Alternative 3: Partial Facilities Removal of Four Dams**

*Partial facilities removal could affect tribal trust resources.* Under the Partial Facilities Removal of Four Dams Alternative, four dams and their associated hydroelectric facilities would be partially removed to provide for volitional fish passage. Keno Dam would be transferred to the DOI, the East and West Side Facilities would be decommissioned, the KBRA would be implemented, and the Yreka water supply pipeline would be installed. Implementation of the Partial Facilities Removal of Four Dams Alternative, including the KHSa and KBRA, would, in the long-term benefit the water, aquatic, and terrestrial resources issues related to trust resources and rights identified by the Hoopa Valley Indian Tribe (Table 3.12-3). Actions addressing these issues are presented in Sections 3.2, 3.3, 3.4, and 3.5 of this EIS/EIR.

**Alternative 4: Fish Passage at Four Dams**

*Fish passage at four dams could affect tribal trust resources.* Under the Fish Passage at Four Dams Alternative operation of the existing dams and hydroelectric facilities would continue along the Klamath River and fish passage facilities would be constructed at the four dams. Keno Dam would not be transferred to DOI and the KBRA would not be implemented. Implementation of the Fish Passage at Four Dams Alternative would benefit fish populations. However, implementation of this alternative would not fully resolve the water, aquatic, and terrestrial resources issues related to trust resources and rights identified by the Hoopa Valley Indian Tribe (Table 3.12-3). Under the Fish Passage at Four Dams Alternative issues related to water, aquatic, and terrestrial resources related to trust resources and rights would persist.

**Alternative 5: Fish Passage at Two Dams, Remove Copco 1 and Iron Gate**

*Fish passage at two dams and facilities removal of two dams could affect tribal trust resources.* Under the Fish Passage at Two Dams, Remove Copco 1 and Iron Gate Alternative, two dams, their associated hydroelectric facilities, and fish hatchery facilities along the Klamath River would be removed and fish passage facilities would be constructed at two dams. Under this alternative, Keno Dam would not be transferred to the DOI and the KBRA would not be implemented. Implementation of the Fish Passage at Two Dams, Remove Copco 1 and Iron Gate Alternative would address the water, aquatic, and terrestrial resources issues related to trust resources and rights identified by the Hoopa Valley Indian Tribe (Table 3.12-3), but not to the same degree as the Proposed Action or Partial Facilities Removal of Four Dams Alternatives. Actions addressing issues related to water, aquatic, and terrestrial resources are presented in Sections 3.2, 3.3, 3.4, and 3.5 of this EIS/EIR.

## **Yurok**

### **Yurok History**<sup>4</sup>

With more than 5,000 members, the Yurok Tribe is the largest tribe in California. The tribe's ancestral territory covers approximately 350,000 acres and includes approximately 50 miles of Pacific coastline. Today, the tribe's reservation, located in Del Norte and Humboldt Counties, California, encompasses approximately 57,000 acres, and consists of a strip of land extending a mile along each side of the Klamath River from just upstream of the confluence of the Klamath and Trinity rivers about 50 miles inland. This reservation configuration came about through a complex series of federal reports and legislative acts.

Today the Yurok Tribe, headquartered in Klamath, California, with an upriver office located in Weitchpec, California, employs more than 200 people, boasts one of the most substantial fishery programs on the entire Klamath River, and self-regulates its subsistence and commercial fishery. The tribe actively participates in the in-river and upslope restoration of its ancestral lands and has signed a collaborative management agreement with the DOI that memorializes the prime role that the Yurok Tribe maintains in managing its resource base (DOI 2011a, 2011b).

In summary, Sloan (2011:55) states:

The inseparable relationship of the Yurok people with the environment and resources provided by the rivers of the Klamath-Trinity Basin cannot be overemphasized. The Klamath River is a vital natural resource which is the foundation of Yurok social and cultural way of life. At its most basic level, the River has always been a source for food and other necessities of daily life...Even rocks from the river are used by Yurok people to practice their cultural ways. The Yurok River is traveled during religious ceremonies and in recreational activities, it is integral to the Yurok language and its oral tradition and truly represents the binding force of their community. Yurok use of the River developed over a long period of time as evidenced by the complexity of their religious ceremonies and practices. In aboriginal times, religious practices were integrated with fisheries management.

The Yurok have many traditional dances and ceremonies which they have long practiced along the banks of the Klamath and Trinity Rivers. The Yurok's ceremonial way-of-life has greatly suffered with the deterioration of the region's rivers. The Yurok have always depended on the Klamath and Trinity Rivers and the sustenance that their flows provide, they name themselves after the rivers and much of their universe is defined in terms of their physical relation to rivers. Residency, natural and cultural resource sites, ceremonial practices, oral history, transportation routes, economic and sociological resources, indeed the Yurok identity, are all

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<sup>4</sup> A detailed report documenting the history and culture of the Yurok prepared by Sloan (2011) is included in Appendix B of the DOI (2011a) report

intricately woven into the ecosystems of the Klamath and Trinity Rivers. Yurok continue to live upon some of the forty-four village sites that line the Klamath and lower Trinity Rivers. These are places where Yurok have lived, fished, gathered, prayed and have been buried for countless centuries.

### **Yurok Cultural Practices**

#### **Fishing**

The Yurok have long practiced their traditional dances and ceremonies along the banks of the Klamath River. Consequently, deterioration of the Klamath River affects Yurok ceremonial and traditional practices. The lives of the Yurok people have always been intricately tied to the river. Historically, they depended on the river for sustenance, and much of their world was defined in terms of their physical relation to the river. Natural and cultural sites, daily and seasonal ceremonial practices, oral traditions, transportation routes, economic resources, social relationships, and the Yurok identity were all drawn from the river.

The Yurok base time and direction on the flows of the Klamath River as much as on the rising and setting of the sun, which can be obscured by the steep terrain, deep forests, and rainy conditions of the Klamath Basin. As one Yurok elder said, “Without this river we would not know who we are, where we’re from, or where we’re going.” Under natural conditions, the rates and sounds of the river’s flow tell the Yurok both the season and the time of day. The skill of the Yurok fisherman has always been measured by his ability to navigate the Klamath River in the dark, not by the stars or landmarks, but by correlating the location and swiftness of the current and back eddies of the river with the sounds that are unique to each bend and riffle. Moreover, the Yurok people are so attuned to the river that they have a name for each characteristic of the water’s movement. Even when Yuroks are away from the river, they remain acutely aware of their location in relation to it, always measuring direction by the river’s flow. For example, it is not uncommon to refer to the burners on a kitchen stove as upriver or downriver, depending on their position. One Yurok elder said, “The river flows like our blood. It is our veins and arteries.”

Many of the Yurok cultural sites on the Klamath and lower Trinity Rivers are traditional fishing spots owned by families. Fishing spots are locations where there are deep holes, significant back eddies, and ideal spots to set a net or erect a platform out over the river. Fishing spots can be given, inherited, loaned, leased, and bought and sold, and are central to the Yurok economy. Over time, as the rivers’ flows have changed, so have the locations of these cultural sites. To this day the Yurok continue to live in some of the village sites that line the Klamath and lower Trinity Rivers, where they still practice many of their traditions in places where the Yurok have lived, fished, gathered, prayed, and buried their dead for centuries.

The Yurok Tribe conducted subsistence fishing in 1987 through 1989. Since 1990, tribal commercial harvests have been marginal and have not provided a comfortable standard of livelihood as originally envisioned for the Yurok in the Hoopa Yurok Settlement Act. At

the same time, subsistence fishing has been severely limited. The decreased harvests have had a significant adverse impact on the tribe's economies and health, as described below.

### **Trade and Barter**

Fish are the Yurok Tribe's most valuable asset and a mainstay of their economy. Abundant fish allow Yurok to feed themselves and their families and to acquire products from outside their territory through trade. Fish was a trading commodity available to any enterprising man. A young man who diligently fished and successfully traded fish for other items could amass sufficient wealth to buy a boat, travel to collect all of the necessary items to fashion intricate ceremonial regalia, and to allow him to marry. Fish were the baseline resource that facilitated the acquisition of wealth and upward social mobility in Yurok culture.

### **Religious Practices**

First Salmon Ceremonies were initiated around April when fish first breeched the sandbar at the mouth of the Klamath River. The ceremony was conducted to celebrate the harvesting of fish and to pray for continuing prosperity and access to subsistence resources. Written and oral tradition indicates that prior to impacts on the fishery beginning with miners who arrived during the Gold Rush, salmon were entering the river in distinguishable waves throughout the year. The major run was traditionally that of the spring salmon. George R. Field, supervisor of the cannery of the Klamath Packers Association at the mouth of the Klamath, described the runs in 1930:

As the run of winter steelheads ceases, about March 30, spring Salmon begin to come. A few enter the Klamath in the later part of February, but the run really starts in March and slackens or almost entirely passes by the last of May. These fish average about 11 pounds in weight and are indistinguishable from those which come later, except that the eggs are always immature. These spring salmon may be caught in the smaller streams fed by melting snow at the headwaters of Salmon River during the month of May.

In early spring the first salmon to enter the Klamath River was traditionally speared and ritually eaten by Yurok medicine men, which signified the beginning of the fishing season. The beginning of fishing season also marked the construction of the fish dam at Cappell, located 33 miles from the mouth of the Klamath River. The fish dam that has not been constructed since 1913 was built by Yurok men under the supervision of a Yurok medicine man. Dam construction sanctified the taking, distribution, and consumption of salmon. All other ceremonies were scheduled only after the fish dam ceremony took place.

Salmon are ritually managed to ensure that Yurok are provided with fish and that enough fish spawn to maintain the fishery. Yurok maintain a general reverence for salmon; however, a strong belief prevails that without proper ceremony the salmon will not return in sufficient numbers. Regardless, the river is central to most Yurok ceremonies. There

are several rocks along the river etched with petroglyphs that provide instructions from the Creator to the Yurok people. One message is a warning that when the rivers stop flowing that will mark the end of the Yurok world. Accordingly, some elders have prophesied that the manipulation of flows by damming represents the beginning of the end for the Yurok.

The Brush Dance, intended as a communal focus around an ailing child, is held in many of the traditional village sites along the Klamath River. The ceremony requires the proper river setting and the availability of river resources. As a Brush Dance unfolds over a four-day period, the participants celebrate the wealth that the riverine environment provides. Baskets made of plant materials collected at the water's edge are used to hold food and ceremonial medicine. Acorns are cooked in the baskets and converted into a nourishing mush using hot rocks gathered from specific river bars. Regalia used by dancers is constructed from various plant and animal products that the riverine environment provides. Ceremonial hosts are expected to feed visitors salmon, and to fail in providing such traditional food to guests is considered an insult.

Beginning with the California Gold Rush and the appearance of large numbers of Euroamericans in traditional Karuk territory, Yurok traditional cultural practices began to decline; however, during the 1970s and 1980s Yurok cultural practices were revitalized. Tribal elders began to teach young people traditional Yurok practices and ceremonies. The Jump Dance was conducted in Pecwan in 1984, a War Dance was held in the late 1980s, communities came together to support the revival of Brush Dances, and in 2000 the White Deerskin Dance was held for the first time in many years at Weitchpec (DOI 2011a, 2011b).

### **Oral Traditions**

The anthropologist Alfred Kroeber traveled throughout Yurok territory in the early 1900s interviewing Yurok people and documenting the tribe's riverine way of life. Kroeber (1976) presents 169 Yurok stories, of which 77 make direct reference to the Klamath River. Among the stories are tales and information regarding construction of fish dams, locations and origins of ceremonies held along the river, bad places in the river, locations where the first salmon was created, what one must do with salmon caught at certain locations, how the river came to flow the way it does, and death passage on the river. It is evident from transcriptions of Yurok stories that the Klamath River is an integral part of their way of life and a basis of their tradition and culture. These stories highlight a healthy and vibrant river ecosystem.

The use of the Yurok language dramatically decreased when non-Indians settled in the Yurok territory, and by the early 1980s it was near extinction. When the Yurok Tribe began to operate as a formal tribal government in 1988, the Yurok created a language revitalization program. The use of old records helped new language learners, but hearing fluent speakers was the most effective way for young people to acquire the language (DOI 2011a, 2011b).

### **Yurok Potentially Affected Trust Resources**

In a government-to-government consultation meeting concerning Yurok trust resources affected by current dam operations held on September 28, 2010, the Yurok Tribe asserted the following as Yurok trust resources: water, fish, land, wildlife, minerals, and timber. The Yurok Tribe asserted that the United States has a trust responsibility to protect such resources and ensure that such resources are managed for the beneficial use of the Tribe and its membership. The Yurok further assert that the federal government has other trust responsibilities to the Yurok in the areas of social welfare, education, and health. For example, Yurok believe that limited access to water, aquatic, and terrestrial resources has restricted the ability of Yurok to practice of some of their most important traditions. This includes freely fishing the once-prolific semi-annual salmon runs and participating in the cycle of ceremonies initiated concurrently. In the past, the Yurok were not inclined to leave their territory; currently, several factors, including an inability to meet subsistence needs from the fishery and a perception that the rivers are dirty, prompt younger tribal members to leave the area to find work (DOI 2011a, 2011b).

The Yurok tribal chairperson, when asked if such trust resources were affected by the current dam operations, responded “Yes” and went on to relate that the Yurok understand that their resources are intricately interconnected to multiple ecosystems. The Yurok World Renewal Ceremonies, recently completed at the time of the meeting, were provided as an example of how Yurok understand and pray for the integrity of such ecosystems. Table 13.12-4 identifies trust resources and rights associated with the Yurok Tribe. The United States does not necessarily agree that all of the above resources are in trust (and therefore form the basis of a trust relationship), but the resources are important to the Yurok (and thus to the United States) for their traditional and ceremonial use.

### **Yurok Health Impacts**

Secondary effects of the Klamath River dams on the Yurok Tribe include emotional and physical conditions such as increased obesity, diabetes, and heart disease due to loss of traditional salmon diet, and depression and alienation that can result in suicide (DOI 2011a, 2011b).

**Table 13.12-4. Effects of Current Dam Operations on Yurok Tribe Trust Resources and Rights**

Trust Resource/Right	Effects
Water resources	Altered flows
	Altered water temperature regime
	Reduced bedload sediment transfer
	Degraded water quality caused by nutrient input, dissolved oxygen, pH, algal toxins and other contaminants
	Diminished aesthetics
	Algae clogged fishing nets
	Human exposure to toxic water while conducting cultural activities
	Diminished opportunity for traditional bathing
Aquatic resources	Loss of habitat
	Less suitable water temperature regime
	Reduced bedload transfer
	Increased potential for disease/parasites
	Reduced population size
	Diminished livelihood
	Loss of traditional salmon diet and increased risk of heart disease, strokes, diabetes, and obesity among tribal members
	Depression, alienation, and possible suicide
	Tribal members leaving ancestral territory
	Lost opportunities for transmitting traditional knowledge
Terrestrial resources	Reduced food availability
	Loss of riparian habitat
	Diminished plant availability for cultural practices and related benefits
	Loss of opportunity for inter-generational traditional knowledge transmission

Source: DOI 2011a, 2011b

**Effects Determinations**

**Alternative 1: No Action/No Project - Yurok and Damming of the River**

*Continued impoundment of water could affect tribal trust resources.* The damming of the river has resulted in changes in the flows of the water and the resources it offers to the tribe, along with myriad losses to tradition and culture (USFWS et. al. 1999). Despite significant degradation of the river ecosystem of the Klamath region through the latter 19th and first half of the 20th centuries, the Yurok persisted in their traditional reliance on the river and its resources. Although it became increasingly difficult, the tribe continued to practice its ceremonies and religions and gathered vegetation for baskets, food, medicines, and other purposes. As much as possible, Klamath River fish caught by the Yurok tribal membership continued to be an important component of the tribe’s diets. Indeed, many of today’s older Yurok grew up with a strong physical connection to the river and a great appreciation for the traditions and ways of life of their ancestors.

The presence of the dams on the upper reaches of the Klamath River has brought about changes in Yurok culture. Sites for fishing and traditional use have become clogged with debris and algae, and fish populations have declined. Observers report that when tribal members try to use their traditional fishing nets, they fill with algae, which is a sign of an unhealthy river.



Many historic and current factors, such as mining, timber extraction, agricultural production, and cattle grazing, affect the environmental integrity of the Klamath Basin. Mining activities in the Klamath basin have significantly decreased over the last several decades. Timber extraction in the basin has slowly become controlled by better regulations at the federal and state levels to the point where timber extraction is now better characterized as forest management.

However, the current operations of the four Klamath River dams significantly affect the trust resources of, and other resources traditionally used by the Yurok Tribe and, by extension, their cultural values, and their continued operation under the No Action/No Project Alternative would result in no change from existing conditions.

**Alternative 2: Full Facilities Removal of Four Dams Alternative (the Proposed Action)**

*Removal of the Four Facilities could affect tribal trust resources.* Under the Proposed Action, four dams and their associated hydroelectric facilities along the Klamath River would be removed. Keno Dam would be transferred to the DOI, the KBRA would be implemented, the East and West Side Facilities would be decommissioned, and the Yreka water supply pipeline would be installed. Implementation of the Proposed Action, including the KHSAs and KBRA, would, in the long-term benefit the water, aquatic, and terrestrial resources issues related to trust resources and rights identified by the Yurok Tribe (Table 3.12-4). Actions addressing these issues are presented in Sections 3.2, 3.3, 3.4, and 3.5 of this EIS/EIR.

**KBRA**

The KBRA has several programs that could result in impacts/effects to trust resources and other traditional resources used by the Yurok. Specific KBRA programs potentially affecting trust resources and other traditional resources include the Tribal Fisheries and Conservation Management Program. Other KBRA programs would have effects on trust resources of aquatic resources, water quality, and terrestrial resources; these programs' effects are discussed in Sections 3.2, 3.3, and 3.5 of this EIS/EIR.

*Implementation of the Tribal Fisheries and Conservation Management Program could result in impacts/effects to Trust Resources and other traditionally used resources.* As the original stewards of the natural resources of the Klamath Basin the Yurok hold a special position in the Basin and have interests in and a traditional relationship to the Basin ecosystem and its fisheries. Implementation of the Tribal Fisheries and Conservation Management Program would provide funding to assist the tribe in developing their capacity to participate in resource management activities within the Basin, particularly relating to tribal fishing and revitalization of tribal subsistence and other economic activities. The timing of and specific locations where these resource management actions could be undertaken is not certain but the improvements they are anticipated to support in trust resources would contribute to the effects of hydroelectric facility removal. Implementation of the Tribal Fisheries and Conservation Management Program would generate beneficial effects to trust resources and other traditionally used resources. Implementation of specific plans and projects associated with the Tribal Fisheries and

Conservation Management Program will require future environmental compliance as appropriate.

**Alternative 3: Partial Facilities Removal of Four Dams**

*Partial facilities removal could affect tribal trust resources.* Under the Partial Facilities Removal of Four Dams Alternative, four dams and their associated hydroelectric facilities would be partially removed to provide for volitional fish passage. Keno Dam would be transferred to the DOI, the East and West Side Facilities would be decommissioned, the KBRA would be implemented, and the Yreka water supply pipeline would be installed. Implementation of the Partial Facilities Removal of Four Dams Alternative, including the KHSAs and KBRA, would, in the long-term benefit the water, aquatic, and terrestrial resources issues related to trust resources and rights identified by the Yurok Tribe (Table 3.12-4). Actions addressing these issues are presented in Sections 3.2, 3.3, 3.4, and 3.5 of this EIS/EIR.

**Alternative 4: Fish Passage at Four Dams**

*Fish passage at four dams could affect tribal trust resources.* Under the Fish Passage at Four Dams Alternative operation of the existing dams and hydroelectric facilities would continue along the Klamath River and fish passage facilities would be constructed at the four dams. Keno Dam would not be transferred to DOI and the KBRA would not be implemented. Implementation of the Fish Passage at Four Dams Alternative would benefit fish populations. However, implementation of this alternative would not fully resolve the water, aquatic, and terrestrial resources issues related to trust resources and rights identified by the Yurok Tribe (Table 3.12-4). Under the Fish Passage at Four Dams Alternative issues related to water, aquatic, and terrestrial resources related to trust resources and rights would persist.

**Alternative 5: Fish Passage at Two Dams, Remove Copco 1 and Iron Gate**

*Fish passage at two dams and facilities removal of two dams could affect tribal trust resources.* Under the Fish Passage at Two Dams, Remove Copco 1 and Iron Gate Alternative, two dams, their associated hydroelectric facilities, and fish hatchery facilities along the Klamath River would be removed and fish passage facilities would be constructed at two dams. Under this alternative, Keno Dam would not be transferred to the DOI and the KBRA would not be implemented. Implementation of the Fish Passage at Two Dams, Remove Copco 1 and Iron Gate Alternative would address the water, aquatic, and terrestrial resources issues related to trust resources and rights identified by the Yurok Tribe (Table 3.12-4), but not to the same degree as the Proposed Action or Partial Facilities Removal of Four Dams Alternatives. Actions addressing issues related to water, aquatic, and terrestrial resources are presented in Sections 3.2, 3.3, 3.4, and 3.5 of this EIS/EIR.

**3.12.3.4 Resighini Rancheria**

**Resighini Rancheria History**

The Resighini Rancheria is in Del Norte County, California, and encompasses 239 acres. The Resighini Rancheria is several miles inland from the mouth of the Klamath River and rests on the southern banks of the river, completely surrounded by the Yurok Reservation. It is primarily settled by Yurok Indians affiliated with the Yurok Coast

Indian Community. A population of 36 was reported on rancheria lands in the 2000 U.S. Census.

Today the Resighini Rancheria employs a dozen people and operates a campground. A former casino and cafe received flood damage in the 1990s and are no longer operational. The tribe also operates a gravel-extraction enterprise along the course of a secondary channel to the Klamath River that runs through rancheria boundaries. Groundwater wells have been assessed and are slated for improvements that will lead to better water distribution throughout the rancheria in support of several residences and the campground and for irrigating agricultural lands. The tribe recently purchased off-rancheria and adjacent fee lands totaling 196 acres. This additional acreage is mostly riparian habitat along the mainstem of the Klamath River and includes the old Waukel Flat Indian Agent site.

### **Resighini Rancheria Cultural Practices**

#### **Fishing, Trade and Barter, Religious Practices, and Oral Traditions**

The Indians of the Resighini Rancheria are Yurok people; consequently they share their cultural practices and values with the general culture described for the Yurok Tribe. Resighini tribal members recently participated in the Weitchpec Jump and Deerskin ceremonies.

The original “Merin” proposal to create the Resighini Rancheria described the tract of land as “agricultural” with conditions that are “ideal for farming or dairying.” However, the value of the land as agricultural was directly connected to the loss of the traditional fisheries. In past years, commercial and subsistence fishing was a primary means of economic and subsistence support for the Yurok along the Klamath River. However, with the closure and restrictions on tribal fishing, the Yurok lost this means of support. While the “fish wars” and accompanying litigation of the 1970s and 1980s reinstated Yurok fishing rights and the Hoopa-Yurok Settlement Act further confirmed that the Yurok Tribe had fishing rights, Rancheria members were left out of that settlement.

### **Resighini Rancheria Potentially Affected Trust Resources**

In a government-to-government consultation meeting concerning Resighini Rancheria trust resources affected by current dam operations held on September 29, 2010, the Resighini Rancheria asserted the following as Rancheria trust resources: gravel (minerals); water as it relates to groundwater for domestic, agricultural, and recreational (campground) uses; riparian plants; wetlands; fish; land; and wildlife. The Resighini Rancheria asserted that the United States has a trust responsibility to protect such resources and ensure that such resources are managed for the beneficial use of the Rancheria and its membership. The Rancheria further asserted that the federal government has trust responsibilities to the Rancheria in the areas of social welfare, education, and health. The United States does not necessarily agree that all of the above resources are trust resources (and therefore form the basis of a trust relationship) but the resources are important to the Rancheria (and thus to the United States) for their traditional ceremonial use. Table 3.12-5 identifies Resighini Rancheria Trust Resources and rights and resources traditionally used by Rancheria members.

**Table 3.12-5. Effects of Current Dam Operations on Trust Resources and Rights and Resources Traditionally Used by the Resighini Rancheria**

Trust Resource/Right	Other Resources Traditionally Used By The Tribes	Effects
Water resources (groundwater)		Indeterminate groundwater quality
	Water resources (instream)	Altered flows Altered water temperature regime Reduced bedload sediment transfer Degraded water quality caused by nutrient input, dissolved oxygen, pH, algal toxins and other contaminants Diminished aesthetics Algae clogged fishnets Human exposure to toxic water while conducting cultural activities Diminished opportunity for traditional bathing
	Aquatic resources	Loss of habitat Less suitable water temperature regime Reduced bedload transfer Increased potential for disease/parasites Reduced population size Less traditional salmon diet and increased risk of heart disease, strokes, diabetes, and obesity Tribal members leaving reservation Fewer opportunities for transmitting traditional knowledge Increase in invasive species (Asian clams)
Terrestrial Resources		Real property: erosion and flooding Mineral: less gravel replacement
	Terrestrial resources	Reduced food availability Reduced riparian habitat Diminished plant availability for cultural practices and related benefits Loss of opportunity for inter-generational traditional knowledge transmission

Source: DOI 2011a, 2011b

Any Klamath River salmonid fishing rights and concomitant water rights to which the Resighini Rancheria may be entitled have not yet been determined. The United States does not currently recognize a Rancheria right to a fishery and the Rancheria does not currently have an instream water right. Regardless, the general health and well being and cultural values of the members of the Rancheria are affected by a lack of fish in the local economy and overall water quality. The lack of fish in the local economy also has secondary effects on general tribal health and cultural well being. The Rancheria tribal council person, when asked during consultation if such resources were affected by the current dam operations, responded, “Yes” and went on to relate that water quality has

declined, erosion of lands occurs at a higher rate, replenishment of gravel extraction beds has diminished, and fish returns are low. In addition, as a tribe that lives alongside the river, their aesthetic quality of life has diminished. The Rancheria people are at risk when they bathe in the river, tourists are less interested in visiting the Klamath River and staying in the campground, and in an area with fewer available fish, tribal members are likely to consume fewer traditional food resources. This has led to related impacts on tribal health such as higher rates of obesity, diabetes, heart disease, and stroke (DOI 2011a, 2011b).

The Yurok of the Resighini Rancheria bathe in the river and use its water for daily and ritualistic purposes. Because of their reliance on the river for so many aspects of their lives, they are concerned about the quality of its water. The Klamath Hydroelectric Project has effects on water quality and related environmental issues, such as watershed health, riparian habitats, erosion, sediment, turbidity, sources of pollution and temperature changes, algae blooms, low dissolved oxygen, high pH, and un-ionized ammonia. The cumulative effects may result in health problems, not just for the people who live on the Rancheria, but also for the tourists who come and camp in the area every year, and for people who use the water for business purposes or who work for those businesses.

A 1975 Resighini Rancheria Water Resources Investigation Report states that samples were not taken of the water in the abandoned well. It also states that coliform was found in a sample taken from a stream running through the Rancheria. A second report completed by the Bureau of Reclamation (Reclamation) in 2010 to document an Environmental Assessment of the Resighini Rancheria's Water Resources states: "The Rancheria is in need of an additional source of dependable drinking water to reduce potential health risks associated with their current operation." Later, the same document states: "Hydrogeologic information is currently not available for water-bearing formation, groundwater level trends, and groundwater storage for the Lower Klamath River Valley groundwater basin."

### **Resighini Rancheria Health Impacts**

Secondary effects of the Klamath River dams on the people of the Resighini Rancheria include emotional and physical health effects such as increased obesity, diabetes, heart disease due to loss of the traditional salmon diet, and depression, alienation, and suicide. Additionally, the tribal members experience a loss of opportunity for inter-generational transmission of traditional knowledge. These conditions result in tribal members, especially young people, leaving the reservation for opportunities elsewhere (DOI 2011a, 2011b).

### **Effects Determinations**

#### **Alternative 1: No Action/No Project - Resighini Rancheria and Damming of the River**

*Continued impoundment of water could affect tribal trust resources.* The Klamath River dams have significantly reduced the ability of tribal members to engage in traditional and contemporary subsistence and religious practices. The availability and rights to

traditional foods and basket-making materials have been affected by the presence of the dams. The dams have altered the natural flows of the river, which has affected the formation of the sand spit in terms of sand buildup and the ability of the river to clear a path through the spit to the ocean. As a result of altered functions, including increased sand build up coupled with seasonal low flows, the Rancheria has experienced more fall flooding of its lands.

The Rancheria members have noticed an invasion of clams (identified generally as “Asian clams”) and wonder how that might alter the ecosystem. The tribe is not sure whether invasive species can be directly attributed to the dams, but does know that the clams have migrated from upriver to downriver. Although new species are introduced into the ecosystem with unknown consequences to Rancheria members, the Rancheria has also witnessed the demise of traditional species such as the spring run of Chinook and the near extinction of the Klamath population of eulachon. The demise of these populations is generally attributed to poor Klamath River water quality (DOI 2011a, 2011b).

Many historic and current factors, such as mining, timber extraction, agricultural production, and cattle grazing, affect the environmental integrity of the Klamath Basin. Mining activities in the Klamath basin have significantly decreased over the last several decades. Timber extraction in the basin has slowly become controlled by better regulations at the federal and state levels to the point where timber extraction is now better characterized as forest management, as noted above.

However, the current operations of the four Klamath River dams significantly affect the trust resources of the Resighini Rancheria and, by extension, their cultural values, and their continued operation under the No Action/No Project Alternative would result in no change from existing conditions.

**Alternative 2: Full Facilities Removal of Four Dams Alternative (the Proposed Action)**

*Removal of the Four Facilities could affect tribal trust resources.* Under the Proposed Action, four dams and their associated hydroelectric facilities along the Klamath River would be removed. Keno Dam would be transferred to the DOI, the East and West Side Facilities would be decommissioned, the Yreka water supply pipeline would be installed, and the KBRA would be implemented. KBRA programs would have effects on trust resources of aquatic resources, water quality, and terrestrial resources, which are discussed Sections 3.2, 3.3, and 3.5 of this EIS/EIR. Implementation of the Proposed Action, including the KHSR and KBRA, would, in the long-term benefit the water, aquatic, and terrestrial resources issues related to trust resources and rights identified by the Resighini Rancheria (Table 3.12-5).

**Alternative 3: Partial Facilities Removal of Four Dams**

*Partial facilities removal could affect tribal trust resources.* Under the Partial Facilities Removal of Four Dams Alternative, four dams and their associated hydroelectric facilities would be partially removed to provide for volitional fish passage. Keno Dam

would be transferred to the DOI, the East and West Side Facilities would be decommissioned, the KBRA would be implemented, and the Yreka water supply pipeline would be installed. Implementation of the Partial Facilities Removal of Four Dams Alternative, including the KHSR and KBRA, would, in the long-term benefit the water, aquatic, and terrestrial resources issues related to trust resources and rights identified by the Resighini Rancheria (Table 3.12-5). Actions addressing these issues are presented in Sections 3.2, 3.3, 3.4, and 3.5 of this EIS/EIR.

**Alternative 4: Fish Passage at Four Dams**

*Fish passage at four dams could affect tribal trust resources.* Under the Fish Passage at Four Dams Alternative operation of the existing dams and hydroelectric facilities would continue along the Klamath River and fish passage facilities would be constructed at the four dams. Keno Dam would not be transferred to DOI and the KBRA would not be implemented. Implementation of the Fish Passage at Four Dams Alternative would benefit fish populations. However, implementation of this alternative would not resolve the water, aquatic, and terrestrial resources issues related to trust resources and rights identified by the Resighini Rancheria (Table 3.12-5). Under the Fish Passage at Four Dams Alternative issues related to water, aquatic, and terrestrial resources related to trust resources and rights would persist.

**Alternative 5: Fish Passage at Two Dams, Remove Copco 1 and Iron Gate**

*Fish passage at two dams and facilities removal of two dams could affect tribal trust resources.* Under the Fish Passage at Two Dams, Remove Copco 1 and Iron Gate Alternative, two dams, their associated hydroelectric facilities, and fish hatchery facilities along the Klamath River would be removed and fish passage facilities would be constructed at two dams. Under this alternative, Keno Dam would not be transferred to the DOI and the KBRA would not be implemented. Implementation of the Fish Passage at Two Dams, Remove Copco 1 and Iron Gate Alternative would address the water, aquatic, and terrestrial resources issues related to trust resources and rights identified by the Resighini Rancheria (Table 3.12-5), but not to the same degree as the Proposed Action or Partial Facilities Removal of Four Dams Alternatives. Actions addressing issues related to water, aquatic, and terrestrial resources are presented in Sections 3.2, 3.3, 3.4, and 3.5 of this EIS/EIR.

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