Karuk Tribe
Department of Natural Resources
Eco-Cultural Resources Management Plan

An integrated approach to adaptive problem solving, in the interest of managing the restoration of balanced ecological processes utilizing Traditional Ecological Knowledge supported by Western Science.

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Integrated Resource Management Plan
Karuk Tribe of California
September 2009

Background:

The Karuk Tribe of California (Karuk Tribe) is a federally recognized Indian Tribe (Federal Register, Vol. 5 1, No. 132, July 10, 1986) occupying aboriginal land along the middle course of the Klamath and Salmon Rivers in Northern California. The Tribe's Aboriginal Territory has been previously mapped and includes an estimated 1.38 million acres, within the Klamath River Basin. This Territory is the land base that was utilized in the process of receiving a determination of Tribal recognition. Nearly all of The Karuk Aboriginal Territory is located concurrent to lands administered by the USDA Forest Service's Klamath and Six Rivers National Forests.

The Karuk trust lands are composed of individual and Tribal Trust properties scattered along the Klamath River between Yreka and Orleans, California, with Tribal centers and administrative facilities located in Happy Camp, Orleans, Somes Bar, and Yreka.

Karuk Tribe:

The Karuk Tribe envisions the Eco-Cultural Resource Management Plan to serve as a long term implementation strategy to move toward fulfillment of our mission. It is intended to integrate the strategic direction of Karuk Department of Natural Resources Programs and affiliates into one overarching document in the interest of establishing a unified approach to managing the human, cultural/natural resources and interests of the Karuk Tribe.

Values:

The Karuk Tribe values the interests and wellbeing of the Karuk People. The values associated with this wellbeing are primarily health, justice, economic security, education, housing, self governance, as well as the management and utilization of cultural/natural resources within and adjacent to the Karuk Aboriginal Territory now and forever.

The Tribe also values the interests and wellbeing of the general public. Applicable Tribal services and management principals are extended to the general public as a secondary benefit to the overall good within our service area.

Principles:

It is the belief of the Karuk Tribe that the values stated above must be managed in a manner consistent with Karuk tradition, custom, culture and ceremonial principals in order to ensure cultural perseverance for our members and descendants.

Mission:

The mission of the Karuk Tribe of California is to promote the general welfare of all Karuk People, to establish equality and justice for our Tribe, to restore and preserve Tribal traditions, customs, language and ancestral rights, and to secure to ourselves and our descendants the power to exercise the inherent rights of self governance.

Draft
Eco-Cultural Resource Management Plan
Karuk Tribe Department of Natural Resources
July 2006

Background:

The Department of Natural Resources (Department) was established in 1989 after congressional appropriations were allocated to pursue fisheries management and restoration interests. What started out to be primarily Fisheries expanded into Water Quality, Fire and Fuels management, Native American Graves Protection and Repatriation (NAGPRA), Cultural Resources, Air Quality, Watershed Restoration, Environmental Education, and Recycling Program. Currently, the Department is developing a media/publicity and Environmental Justice program. Future direction will likely include development of Wildlife, Forestry, Enforcement, and Soils/Minerals.

The families from the villages in the Karuk Aboriginal Territory, as well as numerous other Tribal members continue to utilize the cultural/natural resources throughout the territory. There are numerous undisclosed sacred sites, gathering areas, hunting camps and fishing spots and other prehistoric, historic, and contemporary use areas scattered across the entire landscape. Tribal People continue to maintain a unique relationship with the land and value many resources as sacred. This area has been occupied and traditional uses have continued since time immemorial.

The Karuk use of fire as a land management tool was complex and multi-faceted. As with other ceremonial and religious aspects of Karuk culture, the role of fire was one to be contemplated and learned from at the deepest levels. Born in 1904, Johnny Bennett was a Karuk Indian and a lifelong resident of the Salmon River country. In the following statement recorded in 1977, Mr. Bennett discusses his sense of an appropriate relationship of humans to the process of natural succession. He considers the evolution of the forest as a complex process, not entirely comprehensible, but nevertheless subject to penetrating study, one aim being to bring cultural processes into agreement with those of nature. This non-dominating but purposeful relationship to nature is enriched and raised to the level of philosophy by the contemplative quality of his observations. These considerations of the relationship between lightning, biological evolution and cultural practices reflect a uniquely Karuk perspective which is simultaneously sacred and utilitarian.

> *"I'd like to know what the fires for. I'd just like to know what was the fire for in a lightning, why did it have to burn? It's for some cause now. It could storm without that, y'know, but it had to burn. I think about it many times. The old Indians say the Creator made it that way to clean out the forest. In places where*

it hit there would be a burn out, y'know, and they never put it out. They'd push it back up the mountain and it would burn, let it go. They wouldn't bother it because they claim it was put there for some cause, and they said it was good because they could sneak up on their game, pick up their acorns, and it generally never damaged much, because you could go to a forest, great big old trees, like redwoods, been burnt once, the bark is black. One time there was fire there and the same way in this country, when the lightning hit they never put it out, push them back, make a fire line, let them go back up the mountain. Take sticks out there, burn up against it."

Johnny's discussion moves fluidly from metaphysics to warm personal memories, from the utilization of fire in his own boyhood back to the level of generalization with recognition of the elemental qualities of nature as an implacable total system. His defense of natural processes and relationships is coupled with a mistrust of events and perspectives that tend to alter or slice through this complex system of relationships. From long observation of the self-corrective process of the forest, a series of verities has been deduced which may be formulated as follows: all relationships, in human society as well as in the natural ecology, exist within a range of limits analogous to the cyclical limits observable within nature, and are subject to the same processes of nurturement or destruction as are ecological systems; understanding and harmony with these enduring principles exist at levels which include the conscious and verbal as well as the unconscious and non-verbal. Human life and society are affirmed as aspects of a more inclusive system of natural processes by these conceptions of the forest and of the place of the community in relation to the forest.

(Karuk Ethnographic Report 12-14, quoting from Salter 1981)

Karuk Traditional Ecological Knowledge spans across many different ecological processes and includes numerous habitats and the species contained within those environments. Processes like fire, floods, droughts, and large scale wind events as well as the interrelation between life cycles and the human influence help form self regulated habitat variability. For example, Karuk People see the role of fire touching upon many aspects of their life. Fire caused by natural and human ignitions affects the distribution, abundance, composition, structure and morphology of trees, shrubs, forbs, and grasses which in turn can be beneficial or detrimental depending on habitat or resource needs and condition prior to disturbance.

Certain trees and shrubs utilize water more than others, fire affects this relationship. The distribution of forests, shrubs, and grasslands, affects the process of infiltration from precipitation and resultant levels of evaporation with how those plants utilized water (DeBano et. al. 1998). The balance of water in and water out, leading to the amount of moisture in the soil and the quantity and quality of springs is influenced by fire. (Biswell 1999:157).

In looking at areas that remain relatively untouched by fundamental changes in management philosophy, one can notice group populations of old growth conifer species combined with grasses being suppressed by many even aged tree species at the head of

year round springs. These springs form and contribute to stream, creek, and river flow, which in turn provide habitat for numerous aquatic species. Similarly referenced by (Vannote et al., 1980) (Ziemer and (Naiman etLisle 2001, Benda, et. al. 2001, Vannote et. al.., 1993) 1980).

With the lack of frequent low intensity fire, the grasses die out and there are reduced evapo-transpiration rates in winter and spring potentially causing higher peak flows. The grasses become suppressed by an over abundance of deeper rooted even aged shrubs and trees that have higher evapo-transpiration rates in the summer and fall potentially causing reduced summer base flows (Biswell 1999). This voids the purpose of the old growth component which has the deepest root systems and holds water at the surface for constant release managing higher summer base flows. This is a phenomenon known as hydraulic redistribution (Brooks et.al. 2002).

Densification of vegetation sets the stage for less frequent high intensity fires which can at times remove the old growth component contributing to a perpetually flawed system. Fire affects the plants, which affect the water, which affects the fish, which affect terrestrial plants and animals, all of which the Karuk rely on for cultural perpetuity Fire, as a gift from the Creator, is believed to be a healing agent capable of producing change to restore balance when respected, understood, and utilized in an appropriate natural/cultural context.

Karuk Tribal members and Departmental personnel hold information critical to the inter-workings of the natural environment. Natural Resources staff is working with Federal and State agency personnel, academia, and the interested public to ensure that the integrity of natural ecosystem processes and traditional values are incorporated into current and future management strategies within our area of influence.

Department of Natural Resources:

The Karuk Tribe Department of Natural Resources (Department) envisions this Eco-Cultural Resource Management Plan to serve as a long term adaptive management strategy for the protection, enhancement and utilization of cultural/natural resources (Berkes et. al. 2000, Bormann et. al. 1999). It is intended to outline Cultural Environmental Management Practices through the use of Traditional Ecological Knowledge and correlating Western Science. It will be used to direct the programmatic actions of the Karuk Tribe and guide the incorporation of cultural values and principles into the management of lands within and adjacent to the Karuk Aboriginal Territory.

Nearly all of the Karuk Aboriginal Territory is situated concurrent to the Klamath and Six Rivers National Forests. Past mining, grazing, and logging exploits as well as other kinds of land uses or management practices have caused extensive unnatural disturbance to our forests and watersheds (Strittholt, et. al. 1999).

In 1992, the Chief of the Forest Service directed National Forests to apply ecosystem management defining it as the skillful integrated use of ecological knowledge at various

scales to produce desired resource values, products, services, and conditions in ways that sustain the diversity and productivity of ecosystems (Robertson 1992).

The Forest Service was directed to restore and sustain ecological conditions for desired resource uses by protecting cultural, spiritual, aesthetic, and environmental resources and values. The challenge of that policy is to sustain natural systems that are diverse, productive, and resilient to short term stress, yet able to respond to long term change.

The Karuk vision of ecosystem management is one that is adaptive, holistic, and sustainable for people and place. Ecosystem management should take care of the land, addresses people's needs, use resources wisely, and practice ecologically balanced stewardship.

Ecosystem management is not a new concept to the Karuk Tribe of California. Traditional land uses have intertwined with natural ecosystems for thousands of years. Our cultural environmental management practices inherently sustain biodiversity by working with ecological processes and fostering habitat complexity which maintain populations of plants and animals by enhancing the productivity of forest, grassland, and aquatic ecosystems.

Federal, State, and County Agencies have yet to aggressively address the unhealthy state of our aboriginal watersheds and affected Tribal Trust Resources as a byproduct of non-traditional management practices. Culturally significant resources at risk are: fisheries, sacred sites, traditional subsistence species, and other traditional resource uses. Our ancestral homeland is slowly being stripped of diversity by former and present activities that have depleted old growth forest characteristics, resulted in loss of grasslands and open canopies, decreased fisheries and water quality, habitat loss, as well as increased unnatural abundance and distribution of conifer and shrub species.

Logging disturbances and nearly a century of fire suppression policies, have established landscape conditions in which many are becoming increasingly destined to be incinerated by catastrophic wildfire events. Other studies offer differing lines of evidence for the western Klamath Mountains (Odion, et. al. 2004). However these studies do not take traditional uses of fire into account when identifying and analyzing human induced impacts upon fire severity and occurrence data.

Ideally, collaborative decision making would achieve an open on going dialog for a heightened level of ecosystem restoration (DOI/USDA/Governors 2002). National Forest interaction with the Karuk Tribe at times has been confined to "we have notified the Tribe and we have fulfilled our legal obligation". Our desire is that Federal, State, and County agencies and organizations be actively receptive, so we can together collaboratively integrate our needs more completely through true and equal partnerships in planning, policy making, and forest management activities.

As a sovereign first nation we are continuing to reinstate practices which preserve our belief systems and culture. The relationships we have with the land are guided by our elaborate religious traditional foundation. We share our existence with plants, animals,

fish, insects, and the land and waters. We are responsible for their wellbeing. Our ancestral landscapes overflow with stories and expressions from the past which remind us of who we are and direct us to implement sound traditional management practices in a traditional, yet contemporary context.

For thousands of years we have shaped the ecological condition within carefully observed natural processes and limits. Strictly enforced natural laws govern how the land should be cared for. Slow low-intensity traditionally set fires sustain multitudes of land management benefits. By the nature of our historic domain we enhance environmental processes to perpetuate natural adaptation and diversity. We modify habitats effecting the movement and selection of animals and we influence genetic structures through selective horticultural practices. We have continued to perform religious observances that help ensure the appropriate relationship between people, plants, the land, and the spirit world.

The scientific community until recently dismissed the fact that indigenous people intentionally practiced conservation (Anderson 2005, World Wildlife Fund et. al. 2000). Knowledge that Tribal elders have acquired about the past, as well as contributions and observations made by the Karuk Department of Natural Resources are essential to gaining a better understanding of the dynamics of the Klamath Siskiyou Eco-region.

Information collected by Tribal programs can be used to identify, describe, monitor, and assess the cultural and physical conditions that help retain the dynamics and integrity of ecosystems. Oral histories and other ethnographic data are also useful in understanding the variables and safeguards that maintain and promote ecosystems over time (Anderson 2005). Without understanding the past and current ecological processes, Federal, State, and County land management policies will continue to be inadequate (Paustian, et. al. 1999).

As the second largest indigenous Tribe in California we have un-surrendered sovereign rights that provide for the specific protection and sustainability of our traditional uses and needs. As guardians of our ancestral land we are obligated to support practices that emphasize the interrelationships between the cultural elements and physical dimensions of ecosystems.

We support natural diversity as the key means of stabilizing the cultural and ecological components of natural forest, grassland, and aquatic ecosystems. We strongly adhere that recovery of ecological systems are the context for management and not just special or economic interests.

We believe that sustainable ecosystem land management incorporates the best information that is available including scientific, indigenous knowledge, and integrated adaptive management lessons. Adaptive management practices are a creditable and practical approach because management outcomes can be adjusted by implementation and effectiveness monitoring (Berkes et. al. 2000, Bormann et. al. 1999). Empirical and scientific evaluations can then be used to make adjustments as we better understand the best practices to apply over time accounting for uncertainty and change (Rieman, et. al. 2003).

In 1992 the Chief of the Forest Service stated that managers of wild-lands must be mindful that science as a tool can describe and address management problems but ultimately all managerial decisions are moral, not technical (Robertson 1992).

We have been entrusted to perpetuate our cultural heritage to recover and enhance our sacred natural resources and traditional uses within our Aboriginal Territory. It is our cultural and moral obligation as an indigenous sovereign nation to consider human and non-human needs of the environment.

Values:

The Karuk Tribe values the health and abundance of cultural/natural resources and balanced ecological processes that once thrived within our ancestral homelands. The sustainable interaction of the human influence on the environment is a value which has been overlooked by administrating agencies in the past. This is the primary value of the Department and is in essence inclusive of everything natural.

Traditional views for the Karuk homeland are essentially fixed to sacred references and prevailing traditional uses. An important cultural perspective is the role geographic configurations have on cultural practices and the Karuk World Renewal Religion (Kroeber and Gifford 1949). The way things originated and were created, sources of power, and the significance of natural features are all interwoven into the traditional cultural world views and practices.

The unwritten ordinances and practices of traditional ceremonial observances not only have a profound influence on cultural views, but also on how the natural environment was historically managed and should be managed today. This greatly differs from the current management approach of Federal, State, and County Agencies entrusted with the responsibility of sustaining natural resources upon which the Karuk depend.

Traditional subsistence uses; hunting, trapping and fishing, nut and seed harvesting, mushroom and berry gathering, medicinal plant gathering, the basketry-artisan materials, have all but diminished. The quality, quantity and accessibility of subsistence resources have however declined significantly. Of great importance to sustaining traditional subsistence is the reversal of trends leading to what has happened to native anadromous fishery reserves now nearly devastated and severely threatened (Lichatowich 1999).

The Karuk have continued to accentuate cultural stewardship concerns and maintain close connections with the land, resources, and sacred uses. Tribal stewardship models can positively enhance the protection and restoration of cultural resources and traditional sacred uses as well as address many concerns and values of the general public.

Principles:

Karuk tradition states that everything in nature has a spirit and deserves the utmost respect preceding the actions of human influence upon nature. This belief structure is the

foundation of the Traditional Ecological Knowledge of the Karuk People. All aspects of this document should reflect this principle and any management and/or utilization of resources directed and incorporated herein, correlate with the maintenance enhancement or restoration of cultural resources and ecological processes (Berkes 2000, Anderson 2005).

Non-traditional land management practices have failed to provide for the sustainable flow of resources and cultural uses across the ancestral landscape. The productivity of the anadromous fisheries and oak-dominated forests and grasslands, the axis of our cultural subsistence are now on the fringes of irretrievably.

"*Responsible stewardship maintains the flow of species, materials, and resources while conserving natural diversity and ecological processes within the margins and limits of natural functioning ecosystems. Indigenous stewardship principles are essentially conservation-restoration oriented by leaving something when taking something. Contemporary ecologists also recognize this concept also"* (Anderson 2005)

"Ecological risk assessment fails ethically, scientifically, and practically whenever reasonable options for least-impact human behavior are not examined for their potential ecological benefits as well as potential ecological harms." (O'Laughlin 2005)

"One should not take any creature (plant or animal) without first providing it a healthy environment in which to live, and ample opportunity to reproduce" (Bill Tripp, Karuk Tribal Member)

Ethical stewardship is fundamentally committed to promoting all the interrelated functions of healthy sustainable ecosystems. It takes into consideration the consequences of all the direct-indirect, short term-long term, and cumulative effects associated with the environmental disturbances, hence managing for the unexpected, yet predicted. Based on the best available science and traditional ecological knowledge, adaptive management approaches can be developed as Tribal stewardship models take better care of the land (Berkes et. al. 2000).

The *Karuk Module for the Main Stem Salmon River Watershed Analysis, Scoping of Tribal Issues for Karuk Aboriginal Territory* identifies ecosystem restoration objectives including the following elements with recent modifications for clarity:

- restoration of light to moderate underburns (frequent low to moderate intensity);
- enhancement or restoration of the land, water quality and fishery habitat;
- stabilization of plant communities and reversal of invasions, native or exotic;
- recovery of water infiltration and holding capacity of forest and grassland slopes;
- reduction of fire hazards and the risk of stand replacing catastrophic fires to humans, wildlife habitats, and ecosystem services;
- prevention of further species extinction or further threats to population viability;
- recovery of mature and old-growth trees (conifer, hardwood, and riparian) as general forest diversity; and

- Restoration of pre-contact plant composition and distribution patterns, and the animal communities which depend on them.

Specific management recommendations in the *Karuk Module for the Main Stem Salmon River Watershed Analysis* also suggested with recent modification;

- Reducing the rate of forest ecosystem change so opportunities by conservative or non-adventive species for slow evolutionary adaptation are not irretrievably lost.
- Thinning sub-dominant trees or ladder fuels should take priority over high grading in order to facilitate old growth restoration and provide habitat for micro climates (support restoration forestry over short-term economic profit).

- Avoid the further development of dense fuel ladders within fire prone areas. Widely spaced, uneven aged, mixed species forming diverse tree communities are part of the long term solution.

Adaptive management approaches undertaken by the Karuk Tribe will be effective because they incorporate local or Traditional Ecological Knowledge and Western Science that can be monitored and evaluated over time as well as adjusted appropriately when necessary at an appropriate scale, intensity and frequency (Berkes et. al. 2000, Bormann et. al. 1999).

Cultural management and experimental research practices that are tested and adaptive can lead to more predictable and manageable adjustments to landscape character while enhancing ecological processes (Berkes et. al. 2000, Bormann et. al. 1999, Paustin et. al. 1999). The most ethical management practices should be rooted in applications that develop from understanding of native reference systems that are feasible, yet account for future climate, environmental, or socio-cultural change (Anderson 2005).

As we integrate what is inherently fundamental to promoting our ecosystems we can apply measures (criteria and indicators) that help restore the functions and integrity of the natural resources that are presently vulnerable (The Montreal Process December 1999, 2nd ed.) Adaptive management activities that work with ecosystem processes themselves or mimic their effects are generally the most ethical, sustainable, and culturally definitive.

Mission:

The mission of the Karuk Department of Natural Resources is to protect, promote, and preserve the cultural/natural resources and ecological processes upon which the Karuk People depends.

Authority, Laws and Policies Influencing Management Direction:

"…the National Environmental Policy Act of 1969 (NEPA), the Federal Land Policy and Management Act of 1976 (FLPMA), and the National Forest Management Act of 1976 (NFMA). All these acts require protection and enhancement of the environment, as well as coordination with other federal agencies, state and local governments, and Indian Tribes in the management of public lands.

Protection and preservation of historic, sacred, and traditional use areas of both indigenous and traditional peoples are dealt with in the National Historic Preservation Act of 1966 as amended in 1992 (NHPA), the Archaeological Resources Protection Act of 1979 (ARPA), and the Native American Graves Protection Act of 1990 (NAGPRA). These acts also mandate consultation with affected groups, as does legislation that reaffirms the right of religious freedom such as the American Indian Religious Freedom Act of 1978 (AIRFA). Executive Order 13007 of 1996 deals with federal actions to address environmental justice among minority and low income populations. Federal agencies now manage their work forces and the public lands under their jurisdiction using the guidelines of this legislation" (Raish et. al. 1999:210-211).

Ironically, these legislations have been in place for over a decade and have not adequately address the needs of the Karuk Tribe dependant upon the federally managed lands and waters, specifically the National Forests. Additionally, Secretarial Order 3206, directs that federal agencies are required to consult with American Indian Tribes over the management and recovery of threatened and endangered species.

Clean Air Act:

This Act allows for Tribes to claim jurisdictional authority over lands administered by the federal, state or local governing agencies. However, given the fact that the Tribe does not currently wish to apply for Treatment as a State we may not be applying jurisdictional authority through the Tribal Authority Rule.

The Karuk Tribe cannot possibly restore traditional management practices and stay entirely within the realm of the Clean Air Act as far as meeting National Ambient Air Quality Standards consistently without some variance. We can however reduce the regional and global air quality effects from wildland fires over time. These large scale fires are becoming more of a concern yet are exempt form the Clean Air Act. By restoring the traditional human influenced natural fire regime, the natural background for smoke emissions will be subsequently restored.

Clean Water Act:

Endangered Species Act (ESA):

This Act is intended to ensure the protection of threatened and endangered species from undue impacts or local extinctions resulting from human activities. The Karuk Tribe believes that this Act is a noble attempt to protect and preserve critical ecosystem components, yet we are concerned that it has become misguided by managerial regulation policies at the Agency level.

The Karuk Tribe believes that in order to meet the intent of this Act, the current direction of compliance needs to change slightly. For example, instead of locating Northern Spotted Owl nesting sites and limiting managerial activity within a quarter mile radius, these areas need to be identified and all correlating habitats and connectivity for the Owl and its food base needs to be restored. The main concerns would be to ensure the nesting and roosting trees are not disturbed during implementation or high intensity fire while accounting for bear den trees and habitat interconnectivity for other species of concern, as well as ensuring the short term impact does not outweigh the long term benefit.

National Environmental Policy Act:

This Act requires an analysis of potential negative effects to the human environment, prior to implementation of any Federal undertaking. This Act also provides a good foundation for planning potential restoration activities. Although formats and policies relating to this Act differ between Federal Agencies, the Karuk Tribe believes that programmatic compliance documents can be developed in the interest of achieving watershed scale restoration efforts while meeting the intent of this Act.

National Fire Plan:

The National Fire Plan is made up of five documents developed by different Administrations and State and Federal entities, (1) Clinton Administration September 2000 Report, (2) 2001 Interior Appropriations Bill, (3) USDA Forest Service Cohesive Strategy, (4) 10 Year Comprehensive Strategy, and (5) Bush Administration Healthy Forest Initiative. The Two documents the cover all eight of the Natural Fire Plan goals are the Clinton Administration September 2000 Report, and the 10-year Comprehensive Strategy. The National Fire Plan Goals are to; improve fire suppression efforts, restore fire adapted ecosystems, reduce fire risk, prioritize treatment areas, promote local economic development, comply with environmental laws, utilize collaborative efforts and increase accountability.

The Karuk Tribe's strategy is to restore natural fire regimes through the reduction of fire risk at the landscape scale by minimizing hazardous fuel accumulations, and suppressing fires in untreated areas, utilizing collaborative efforts to prioritize treatment areas, comply with environmental laws, promote local economic development and increase accountability while reducing, or at least balancing the cost to the taxpayer over time.

The National Fire Plan and all of its components are a stepping stone for the restoration of Karuk Cultural Environmental Management Practices within the Karuk Aboriginal Territory. If annual appropriations can be secured, the path of managing upland resources in a manner consistent with our heritage will fall before us. This path can help weave our

past, present, and future into a design symbolizing Karuk People as an integral component of the natural environment. Walking this path will enable us to once again uphold our responsibility to assist nature in its processes on a scale consistent with environmental needs, while providing for the wellbeing of people, resources, and for future generations.

Self Determination:

Self Governance:

Tribal Forest Protection Act:

This Act provides opportunity to complete collaborative stewardship work adjacent to Tribal Trust Lands through agreements or contracts. It also provides for the defining of adjacent to be determined locally. The Karuk Tribe believes that this can be implemented through Tribal/Interagency partnerships that provide for an integrated working relationship in the planning and implementation of watershed scale restoration efforts throughout the Karuk Aboriginal Territory.

Traditional Laws Governing Land Management Practices:

Protocol:

All activities should be conducted with respect and reciprocity. Individuals should be mindful of whose traditional use area they may be harvesting in and/or the site's accessibility and potential use by elders.

Usufruct rights should be acknowledged when and where applicable.

Engage in ceremonial or subsistence harvest before commercial harvesting.

Take only the amount of the resource that can be used, shared, traded and processed without creating unnecessary waste. A two year supply is customary and not considered in excess when upholding traditional subsistence harvesting techniques.

Ceremonial information will remain unwritten; this is a provision for maintaining Tribal ownership through traditional oral transmission of key managerial and definitely ceremonial points.

Regulations developed regarding species harvested should be classified as ceremonial, subsistence, or commercial. Generally, any animal shall not be harmed, or killed without intentions for ceremonial or subsistence use.

The following subsections are examples to serve as guidance in the formulation of future regulations and ordinances. Oral transmission of traditional information includes but is not limited to:

Hunting:

Elk and deer should not be hunted during mating, birthing or rearing of young. Selective hunting of individuals is dependant upon the herd size and age/sex composition. Barren does and cows may be minimally taken during this time when and if readily identifiable. Hunting regulations for all subsistence species should be developed and enforced in accordance with this principal harvest practice.

"When I was young, I would walk over to the back side of East Peak with my uncle and pass three point bucks all day, they weren't afraid. We would get to the family hunting area and wait for the old buck, they are the most tender… they lived a long life. We would build a blind and wait near the lick. The big one would come in last. Now people shoot them before they can breed." (Harold Tripp, Karuk Tribal Member).

Harvesting of ceremonial species should be allowed and based on unwritten ceremonial principal and practice passed from ceremonial leaders by oral transmission. It is important that if species are harvested for ceremonial regalia they be allowed to dance or otherwise be a part of the ceremony intended, and not be harvested for commercial purposes.

Animal species such as porcupines which are utilized for basketry materials should not be killed but captured with quills being removed with non-lethal methods.

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Fishing:

Salmon harvesting should not occur until a minimum of 20 days after the new moon in April, or the end of the Salmon Ceremony at Ammaikiarram. After this time, Ikes falls downriver should be considered fishable for Salmon. Following the July moon, or the salmon ceremony at Inam, Ishi Pishi Falls upriver should be considered fishable. When Spring Salmon reach the shoots of Wooley Creek the lower Salmon River and the shoots are considered fishable. (Until Spring Salmon populations recover in Wooley Creek, there should be no Salmon fishing in the Salmon River or Wooley Creek).

Steelhead shall not be harvested until after the new moon in September or otherwise opened by ceremonial leaders at Katimiin and should stop after the new moon in April. No Salmon or Steelhead fishing shall be conducted from the top of Ike's Falls to the bottom of Ishi Pishi Falls at any time.

Sturgeon shall not be harvested above the rock at the mouth of the Salmon River. Any sturgeon parts not utilized by subsistence or ceremonial fishermen should be discarded above this rock to ensure their spirit will always return to the spawning grounds. Sturgeon harvesting can begin after the little frogs by the creeks (Pacific Tree Frog) begin to sing in the spring (personal communications Brian Tripp and Josh Saxon).

Pacific Lamprey (eels) can be harvested during upstream migration. In river fishing for lamprey can begin after the dogwoods bloom and extend throughout the migration.

Gooseberry brush can be utilized when needed to force the run into fishable channels. This temporary barrier shall be removed nightly to allow for unimpeded passage for spawning populations. All fishing practices should allow for purposefully allowed passage throughout each fishing period

Gathering:

Acorns should be gathered in the fall. Acorns infested with moth larvae generally fall with the first rains. Whenever possible these acorns should be burned on a pile where edible mushrooms do not grow. This will reduce the infestation of the stand for the following year while ensuring mycelium connectivity for nutrient transfer and mushroom consumption.

Berries and other nuts should not be completely harvested from a site or off vegetation to allow some to remain for others (human and wildlife) and for propagation. Pruning or coppicing following berry or nut harvesting should be employed to remove older dead or less productive stems and stimulate future fruit production and/or use quality.

Indian potatoes (brodieas, calachortus, lilies, fritillaria, etc.) shall be harvested prior to flowering and after seeds have ripened. Some larger bulbs, and smaller cormlets or scales shall be left in the tilled soil after harvesting. Seeds should be dispersed across the harvest site where appropriate.

Mushrooms should not be over harvested from a particular gathering area, cutting of stocks to keep root systems intact is preferred and raking to remove litter and duff is discouraged. Veils should be allowed to open and larger older rotting tanoak/matsutake caps may be broken up and scattered around to foster spore dispersal. Some stock bases and body parts of oyster and Hericiums should be left in the log or snag for re-growth and spore dispersal. Most mushroom species reproduce better when subsurface root systems remain intact.

Medicines:

Harvesting of leaves, bark, roots, or other plant parts should enhance growth and shall not decrease more than 50% of the rooted population at the site. For rhizominous species, like Prince's Pine and Oregon grape, harvesting should be done on the younger non-flowering/seeding stems, favoring the retention of older deeper rooted individuals. Spring harvesting of leaves and shoots shall be done in a manner which retains some live material to foster re-growth and/or seedling establishment.

Materials:

Harvesting of plant materials shall be consistent with established traditional cultural practices. Different plants may be harvested at different seasons for different purposes.

Maple bark should be harvested from only one-third of the tree. Alder bark should be harvested in a manner that does not girdle and kill the tree.

Shoots of shrubs (mock orange, ocean spray, service berry, elder berry, etc.) should be harvested in the fall or winter when tops are dormant and before spring bud formation or sap flow.

Hazel shoots used for basketry should be harvested in the spring for peeled sticks or winter for bark-on sticks. Willow should be harvested spring during leaf emergence for bark peeling or late summer after growth while the bark can still peel, or winter when shoots are leafless for "bark on" shoots. Willow roots can be harvest at any time.

Forest Management Plan Organizational Approach:

Each Department of Natural Resources program is organized into individual sections with an introduction, resources concerns, goals, and objectives, followed by the historical, current and future desired conditions. Further integration, planning, and prioritization of Departmental programs and projects will be organizationally scaled from Hydrologic Unit Compartments (HUCs), at the appropriate drainage scale planning areas. Vegetation/soil and habitat types, as well as slope aspect, elevation range, and indicator species. Key ecological processes (fire, hydrology, nutrient cycling, etc.) will be addressed at each of the mentioned scales.

DNR Programs:

Air Quality:

The Karuk Air Quality Monitoring Program was established in 1999 in the interest of documenting levels of particulate matter of 10 microns or less in order to quantify the effects of smoke on our local communities.

Resource Concerns:

Resources affected by the increase in particulate generation from wildland fires range from recreation to human health at the micro and regional scales and can have global implications. Based upon historical level of landscape level burning and resultant emissions it is understood that there will be a necessary tradeoff between dealing with a smaller portion of smoke associated with annual prescribe burns versus that of catastrophic wildfire resulting in large scale higher emission levels.

Traditionally, tanoak acorn management utilizes smoke to reduce insect populations and increase the quality and quantity of this staple food source (Anderson 2005). Smoke is utilized for many things both sacred and utilitarian. The free use to practice our

traditional, sacred, and utilitarian management practices unimpeded is of great concern as policies are developed with no knowledge or reference of these uses being incorporated.

Goals:

Protect the local communities within and adjacent to the Karuk Aboriginal Territory from long term exposure to high levels of particulate matter. Promote the use of management ignited fire and pre-burn fuels treatments. Enhance the quality and quantity of cultural resources. Restore fire related natural disturbance regimes.

Objectives:

Monitor particulate matter levels in the interest of quantifying affects to air quality from cultural burns, prescribed fires and wildland fires with and without pre-burn fuels treatments within the Karuk Aboriginal Territory. Work collaboratively with Tribal Clinics to make available indoor air ionizers to the elderly, asthmatic, and children by prescription during periods of long term exposure of high particulate levels from large wildland fire events. Assist in the planning, development and implementation of fuels reductions and utilization of low intensity cultural burning practices. Justify the need for restoration of human interacted natural fire regimes. Utilize biomass for purposes other than burning whenever possible, practical, and/or feasible.

Historical:

Air quality was affected by fires which resulted in there being longer periods of smoke present in local air sheds, with lower particulate concentrations. Fire suppression policies implemented in the 1920's and 30's through current times, has removed the human influence on particulate generation from natural disturbances.

Large scale burning practices occurred as part of Karuk World Renewal Ceremonies. The Tribe has been attempting to reinstate this practice which should occur every September. In more recent years a decision notice was signed that stated the Tribe and Forest Service would work together to work towards this goal. However, uninformed policy makers, inadequate working relationships, lack of institutional knowledge, and simple misunderstandings have hampered this process.

Current:

Sources of particulate affecting air quality come from home wood stoves, fire places and, door yard burning during the fall, winter and spring. Additional particulates are generated from limited prescribe burning during the fall and spring. Dirt roads contribute minimally. Lastly, arson, lightning and the occasional catastrophic wildland fire which pulses a concentrated amount of particulate matter over large areas during inversions, and low wind movement conditions occur during the summer. No official emissions inventory has been conducted for the Karuk Aboriginal Territory.

Fuels reduction crews burn piles throughout the fall winter and spring. The Tribe, Forest

Service and local community groups conduct burns at varying scales. Smoke management plan development has become an integral part of project level planning (Sandberg, et. al. 2002, Sandberg and Dost. 1990).

Future Desired Conditions:

Longer time periods of exposure to lower concentrations of particulate matter resulting from frequent low intensity prescribed burning and associated fuels treatments during all seasons of the year is desired. This should systematically ensure shorter time periods of exposure to highly dangerous concentrations of particulates resulting from catastrophic fire during the summer and early fall.

The condition class of our ancestral watersheds should be restored to the point that in season lightning fires could burn at relatively low intensity for long periods of time without generating particulate levels that are a threat to human health. Interagency recognition of this concept in policy development and local implementation of this long term strategy could stabilize, if not reduce the ever increasing costs of fire suppression by today's standards.

Traditional cultural burning practices at all scales would be implemented perpetuating balanced ecological processes with greater understanding and support by the entire nation if not the world.

Cultural Resources:

Cultural Resources has been a core program since the Department's inception. Its primary purpose is to ensure cultural perspectives are not only incorporated into every aspect of departmental management practices, but to protect culturally sensitive resources from the management actions of local agencies, organizations and community groups.

The Klamath-Siskiyou Mountains that encompass the ancestral homelands of the Karuk are the most floristically and geologically diverse in the western United States (DellaSala et. al. 1999). Natural influences of adjacent geographic provinces, the climate, and the unique geologic, biological, and botanical environments all contribute to the remarkable diversity of the Klamath Siskiyou mountain province to which the Karuk culture adapted and evolved with over thousands of years.

Many federal land management practices have failed to adequately protect cultural resources. Many sacred sites have been decimated. The primary ceremonial lands; Panamaniik, Katimiin, Aamaikiarraam, Helkau, and Inam, as physiographic cultural settings all have experienced major disturbances from mining, logging, road construction, fire suppression, fire salvage recovery, and recreational uses. Forest uses overall have negatively effected many sacred, traditional, contemporary, or cultural use areas.

Across native territories there has been wide scale destruction to archaeological resources consistent with looting-vandalism and unearthing of burial remains. This started as

deliberate destruction of aboriginal villages in 1850 by miners followed by a century of pilferages from the public as well as the deliberate and inadvertent disturbances from logging, road building, fire suppression, fire salvage activities, and public uses. Many significant Karuk cultural artifacts, ceremonial and utilitarian, have been removed from the area as the result of thievery, sale, deterioration, and disposal.

Resource Concerns:

Culturally significant resources are not simply artifacts and anthropological histories. They encompass a wide range of physical, social and spiritual characteristics. The physical resources include, but are not limited to food resources such as deer, elk, salmon, lamprey eels, acorns, berries, and mushrooms. Village sites, artifacts and ceremonial landscapes are also part of the physical characteristics of cultural resources. Trade routes and gathering areas for these food sources, herbal medicines and utilitarian resources such as basketry, cordage, and/or tool development and the correlating managerial use and availability of these resources compose the bridge between the physical, spiritual and socio-cultural resources of concern.

Karuk ethno-botany is more representative of grassland and mixed hardwood-conifer forests than conifer dominated forests (Davis and Hendryx, 1992, Schenck, and Gifford. 1952). Restoring the diversified tanoak, black oak, madrone and other hardwood component that has been affected by past management practices is important to retrieving forested stand dynamics and ecosystem function. Ecological diversity and processes are also important for the perpetuation of subsistence food resources, medicines, and materials critical to maintaining the integrity of Karuk Culture.

The spiritual characteristics of these culturally significant resources incorporate the need for the human influence in management for the perpetuation of cultural resources, practices and knowledge base necessary to maintain Karuk Culture. The spiritual nature behind cultural resources not only validates the cultural principle that humans are the stewards of natural processes, but shows that everything in nature is at some level a significant cultural resource.

Goals:

Protect artifacts and culturally significant sites from the undue impacts of agency, organization, community group, or private landowner ground disturbing management actions. Promote sound management practices that reflect Karuk ecological/cultural principles at the watershed scale. Enhance the traditional knowledge base of our local youth, Tribal members, and employees. Restore human interacted natural disturbance regimes.

Objectives:

Work with agency, organizations, and community groups to monitor ground disturbing activities to ensure protection restoration or enhancement of cultural resources. Plan projects and ensure they are implemented in a manner that assists and/or enhances natural processes. Work with agencies, Tribal staff, schools, and the local workforce to educate

current and future restoration planners, workers, teachers and agency/review personnel in the understanding of cultural management principles. Support the maintenance and restoration of Karuk language, ceremonies, and other cultural practices such as prescribe burning, hunting, fishing, gathering, basket and regalia making and other traditional arts. Support and foster a working relationship with other Tribal programs necessary to implement the goals of the Cultural Resources Program.

Historical:

Karuk cultural resources were managed, utilized and traded at the individual, family, and village scales, as well as with adjacent Tribes and tribal members (Kroeber 1976). Intermarriage, trade, ceremonial and subsistence activities influenced the acquisition, ownership, use and exchange of many cultural resources.

Following European contact, genocide, forced removal, destruction of village sites and ceremonial areas, denied access to and use of subsistence resources followed by policies essentially outlawing Native American ceremonial and cultural practices (burning, hunting, and fishing by traditional methods), forced assimilation, poverty, boarding school experiences, alcohol and drug addictions, and reduced abundance; access to and inadequate maintenance of cultural resources, have all contributed to the degradation of health of Karuk Tribal members and descendants.

Current:

Many activities which support cultural resources are now limited or practiced less for the above mentioned historical reasons. Current activities which specifically maintain, restore or enhance cultural resources include but are not limited to, language and basketry classes in Yreka, Happy Camp, and Orleans. Annual language and basketry workshops and meetings are conducted. Individuals and families who still conduct subsistence and ceremonial harvesting of wildlife, fish, and plant species, or make regalia and Tribal art, help maintain the sacred need for cultural resources and help to perpetuate cultural integrity.

Traditional ceremonies are practiced at their relevant locations throughout the Karuk Aboriginal Territory. These help guide Karuk managerial practices and are the foundation of cultural principal. The Cultural Resources Program helps to bridge the gap between traditional principal and managerial practice through program development, and agency consultation, coordination, and partnership development.

Future Desired Conditions:

The future of Cultural Resource use and maintenance should be that of those living in and/or those families traditionally residing within individual watersheds assisting with the management of the local ecosystem processes. Traditional management principles backed by natural laws and cultural awareness is a vital component of cultural resource management.

The Karuk Tribe believes that localized management for the abundance and diversity of cultural/natural resources will help to ensure Karuk Culture will remain intact. We would also like to receive recognition from Federal, State, County Agencies and local communities of the fact that Karuk traditional management practices and principles should be incorporated and applied across all, policy, regulatory, managerial and social infrastructural development within and adjacent to, or otherwise affecting the Karuk Aboriginal Territory.

Restored ancestral practices of burning, harvesting, hunting, fishing, gathering and/or freedom to practice our religion and subside upon nature cannot occur at an adequate scale until cultural resource management occurs in the form of tribally driven human interacted natural disturbance regime restoration.

Enforcement/Regulation:

The Department has yet to organize an Enforcement /Regulation Program. A program such as this will be needed in the future depending upon the outcome and structure of future policy, law, managerial responsibilities, and recognition of Tribal interests and purpose for implementing Cultural Environmental Management Practices across the broader ancestral landscape.

Resource Concerns:

The rural setting of Karuk Aboriginal Territory of western Siskiyou, northeastern Humboldt counties, and southern Oregon generally lacks effective Federal, State, and County law enforcement. This limited enforcement reduces the protection, monitoring, and proper regulation of Karuk Tribal Trust Resources, as well as social or domestic issues.

The Karuk People never relinquished traditional hunting, fishing, gathering, cultural practices (burning) or rights to occupation under treaty or other official, legal, Federal statue, and therefore retain and should be able to exercise such rights unimpeded by Federal, State, or County regulations. Karuk Tribal members and descendants practicing usufruct rights to traditional harvesting practices often violate or are disadvantaged by Federal, State, and County laws regarding season, species, and amount of harvested resource (see Anderson 2005 for a discussion of California Indian usufruct rights).

Traditional Karuk harvesting regulations and harvest limits are often different than Federal or State regulations, placing Karuk Tribal members at risk of violating Federal, State, or County laws for practicing traditional methods of hunting, fishing, gathering, or burning. Furthermore, Karuk Tribal members and community need culturally sensitive, appropriate, and respectful law enforcement services.

Goals:

Protect the resources and social wellbeing within the Karuk Aboriginal Territory. Promote traditional laws relating to resource usage and civil unrest. Enhance the principles of Tribal self governance, self reliance and self determination. Restore ecological and social stability through enforcement and traditional regulation of well established cultural principals involving management practices, resource usage, and civil actions.

Objectives:

Establish Karuk Tribal resource enforcement personnel to monitor, regulate, and enforce traditionally appropriate Federal, State, County, and/or Tribal laws within Karuk Aboriginal Territory. Assist in the development of Tribal Ordinances and/or Interagency Policy relating to resource regulation and enforcement. Engage in and/or facilitate the preliminary settlement of civil issues based on traditional conflict resolution formulas.

Historical:

Prior to European settlement, the Karuk People, governed and regulated themselves as family groups having close ties with neighbors through a system of laws, and usufruct rights based on inheritance, resource ownership, stewardship responsibility, and management action (Kroeber 1976, Bright 1978). Civil or resource violations such as damage to property or life, or harvesting resources at an individual or collective group gathering or use site without permission were settled through a system of value assessment and subsequent payment between the involved parties. These negotiations were at times mediated by individual(s) recognized and respected by both parties. Openly practiced physical and/or spiritual retaliation or violence was rare.

Settlement of Karuk Aboriginal Territory by non-indigenous peoples and the subsequent disregard for Karuk social regulatory practices lead to the establishment of regulations, laws, and policies based on European social structure. Treaties were negotiated and never ratified, enforcement agencies clamed jurisdiction and ownership as if they were. Regulatory structures affecting Karuk culture were established with no Tribal involvement or official representation. This dramatic change caused a rippling effect throughout the Karuk Culture, essentially making it illegal to practice our religious traditions.

"*There is also another source of fires, which I will call the renegade whites and indians in the district, these I am glad to say are in the minority, but they do lots of damage considering their number. They set fires for pure cussedness or in a spirit of don't care a damativeness, they have nothing at stake, and don't care whether the fire damages others or not.*

In good acorn seasons in the Indians will sometimes try and burn off the leaves and humus under the oak trees, to facilitate the gathering of acorns.

My past experience has proven that fires caused by "Indians burning for basket material" are invariably small fires, as the location of the material needed is not productive of large fires.

...In the "'Pure cussedness class'", the only sure way is to kill them off, every time you catch one sneaking around in the brush like a coyote, take a shot at him". (F.W. Harley, USFS District Ranger January, Klamath National Forest, Orleans, Calif. Jan. 30, 1918 letter to Mr. Rider.)

Everything was at stake, over 80% of the Karuk cultural use plants are fire dependant species. These species need frequent low intensity fire as conducive of historical traditionally shaped landscape characteristics. In the letter above, the only reference of native burning was in relation to tan oak acorns so burning for basket materials, hunting and food gathering must have been classified under the "pure cussedness class".

Current:

These historical effects have subsequently caused inadequate landscape conditions, threatened population viability of many culturally significant plant and animal species, degraded water quality and quantity, unbalanced ecological processes as well as an impoverished social structure.

Federal, State, and County laws have been inadequate in maintaining and protecting Tribal Trust Resources and the social wellbeing for our membership. Although the Tribal Government has yet to be approached by lawmakers to alleviate the abovementioned social and/or environmental justice issues, some policy makers are becoming increasingly proactive in seeking Tribal input and collaborative involvement (Raish, et. al. 1999).

Within the last decade, policy language has begun to make a turn towards ecologically driven resource management. In the last few years we have seen attempts by agency personnel to figure out how to make it happen on the ground.

The Karuk Tribe believes that eco-cultural resource management as a foundation for social infrastructure is vital to the perpetuation of our culture. We recognize that our participation in restoring balanced ecological function and socio-cultural interaction will need to be more than simple consultation for consideration on projects, policy, law development and/or enforcement measures.

Future Desired Conditions:

Establishment of a Tribal Eco-Cultural Resource Protection and Enforcement Program based on Tribal Environmental Knowledge and Cultural Environmental Management Practices would ensure protection of local resources in the same manner that preserved them for thousands of years. Tribal regulation, and enforcement of fish, game, gathering and other managerial or harvesting activities will enhance population viability and habitat productivity. This not only ensures the perpetuation of the resource, but could free a

burdensome disconnect with societal changes amongst the minds, hearts, and memories of the Karuk Tribal membership.

Recognizing the un-surrendered rights of the Karuk Tribe within the Karuk Aboriginal Territory is another step towards restoring ecological and civil stability. Tribal and Interagency collaboration, with public participation is essential in restoring social and environmental conditions that are desirable by all occupants, resource users, and visitors within the Karuk Aboriginal Territory.

Tribal ordinances and Tribal – Interagency partnerships/agreements would maintain regulatory direction and authority to enforce resource usage and resolve civil actions.

Designate areas of forests, shrub, grassland, and riparian/river that are monitored and stewarded by Karuk Tribal members and/or families similar to historical family use/owned resource areas to assist the Karuk Tribe with resource protection and coordinated restoration efforts.

Environmental Education:

Environmental Education has been very important to the Karuk Tribe since program inception. Environmental Education projects serve to inform Tribal and local community members about the Department's mission. Projects such as Fall Salmon Spawning Surveys, during which students collect data that is used by the California Department of Fish and Game, not only give these students hands-on training, but encourage a deeper appreciation of natural resources and ecological processes. The Department's Environmental Education Program provides opportunities for people to correlate current science with traditional knowledge and cultural practices.

Resource Concerns:

It is important for all interested individuals to learn about the basic resources upon which we depend. Water, fish, animals, plants, fire, air and the correlation between environmental and human health are some of our main focus points. Although Karuk traditions such as basket weaving, Tribal fisheries, hunting, and medicinal plant, acorn, berry, and mushroom gathering are still practiced by some Tribal members, it is vitally important that such traditional knowledge be passed down and preserved. Tribal youth must continue to learn about the life cycles and habitat needs of fish and animals, the names (Karuk, common, and scientific) and uses of common native plants and animals, the importance of fire for maintaining ecosystems, the necessity of clean air, and the role of these processes and/or resources to Karuk culture.

Goals:

Protect cultural/natural resources from uninformed, narrowly focused and/or single species management approaches in the future. Promote traditional environmental knowledge and balanced management practices. Enhance the understanding and integral perceptions of youth, teachers and future land managers within the Karuk Aboriginal

Territory. Restore ecologically driven management practices based on the integration of traditional knowledge and western science.

Objectives:

Instill in students and adults a life-long desire to learn about and care for their environment. Provide opportunities for youth to learn from Tribal elders about traditional Karuk land and resource management practices. Work with local schools, agencies, organizations, community groups and Tribal members to enrich student and adult knowledge of local environmental and watershed issues to ensure protection of cultural/natural resources. Implement and assist with projects on recycling, community gardening, salmonid spawning and habitat needs, ethnobotany, and other relevant environmental issues to teach students to be good stewards of their local resources and ecological processes. Train students and adults to put their knowledge into practice by providing hands-on activities both in classrooms and outdoors.

Historical:

Prior to European settlement, Karuk People were trained in specific Cultural Environmental Management Practices as a trade that had correlations with the health and abundance of the resources in which the individual primarily collected, gathered or otherwise utilized as part of their social stature within the village. These traits were established at a very young age though oral transmission of knowledge the elders had acquired throughout their lives.

The children would remain with the elders and learn managerial and social principles until they were eight years old. Then they would learn to apply these principles through managerial actions when assisting the adults with the daily action of preparing for survival while sustaining a perpetual livelihood.

Following European contact, this social structure began to change. Social and Managerial principals were still taught in the same manner as before. However, there was a reduction in effective hands-on teaching as children were forcibly removed to boarding schools to learn English. During this time they were beaten repeatedly when speaking their native language or practicing their traditional beliefs.

After the boarding school experience, many chose not to move to the reservations and continued the tradition of Cultural Environmental Management Practices. These practices continue today in reduced abundance because in many cases there is the ever-present threat of being jailed.

Current:

The Department has initiated many cultural youth projects. One is Salmon Camp, hosted by the Karuk Tribe in collaboration with other local Tribes. Salmon Camp is an eco-cultural education camp that provides Native American high school students with opportunities to learn about natural resources, water quality and fisheries issues.

Another project is ceremonial trail maintenance. In past years the Karuk Tribe has received funding which was used to hire a cultural youth crew consisting of high school students to clear trails and dance areas for the annual World Renewal Ceremonies. As this learning activity is in the form of a job, participants receive minimum wage rates and an hourly stipend is put into an account to help them pay for college. During their time on the project, participants learn about ceremonial principals, specific locations and the purpose of individual traditional practices.

The Department's Environmental Education Program includes a number of projects centered on cultural and natural resource management: Fall Salmon Spawning Surveys, Aquarium Incubators, Gardening and Recycling, Native Forest Plants and Ethnobotany Studies, and Stream Monitoring. All projects promote learning traditional and scientific environmental knowledge and learning balanced management practices.

Fall Salmon Spawning Surveys allow youth to collect real data that is used by the California Department of Fish and Game. Students learn about the life cycle and habitat requirements of salmonids as well. Aquarium incubators in classrooms and Tribal buildings also help youth and adults learn the life cycles and habitat requirements of salmon and trout.

Community gardens located on or near school grounds give youth and adults an opportunity to learn gardening skills while growing healthy, organic produce. Gardening also promotes a healthy lifestyle through the exercise involved in maintaining the garden area.

Recycling projects include composting and vermicomposting, which help youth learn how to reduce kitchen waste, and learning about recycling other household wastes such as plastics.

While participating in Native Forest Plants and Ethnobotany Studies, students and teachers learn the names of local native plants, traditional uses (food, basketry, ceremonial, medicinal), habitats, and the importance of fires for maintaining diversity, and ecological roles from Tribal members and other knowledgeable individuals.

During Stream Monitoring youth learn about aquatic invertebrates and their role in a stream's ecology, water quality, stream flow, and the impacts of human activities upon a watershed.

Future Desired Conditions:

Tribal members and community members will maintain, expand and pass on their knowledge of the cultural and natural resources upon which we depend and of the ecological processes necessary for the preservation and conservation of those resources. Tribal members and community members will use balanced, ecologically driven management practices based on the integration of traditional knowledge and western science in order to be good stewards of their cultural and natural resources and ecological

processes. Tribal youth will be able to use Cultural Environmental Management Practices without restriction or fear of being at odds with current management practices.

Environmental Justice:

The Environmental Justice Program was established with the development of the ECRMP. The history of the Karuk Tribe since contact with Europeans represents a classic example of environmental injustice. In the past 150 years various governmental agencies have made numerous natural resource management decisions resulting in the degradation of the natural resources upon which the Karuk Tribe is fundamentally connected.

This fundamental connection is such that the physical, spiritual, social and economic wellbeing of individual Tribal members is tied directly to the proper management of these resources. In most cases, the Karuk Tribe has born a disproportionate share of the burden associated with managerial and policy decisions at all levels. These decisions include the environmental policy, approval of mining operations, timber harvest plans, construction of dams and agricultural irrigation projects just to name a few.

Currently, mounting public pressure is encouraging government agencies to redress issues of environmental justice through future natural resource management decisions. This program is intended to provide assistance in policy development and managerial planning.

Resource Concerns:

Issues of environmental justice span across all manageable natural resources**.** Of particular interest are those threats to Karuk quality of life, health, spiritual and physical wellness, and the integrity of natural resources providing ecological goods and services necessary to sustain the Karuk People as a living culture.

Goals:

Protect the quality of life within the Karuk Aboriginal Territory. Promote the use of traditional ecological knowledge in the development, reform and redress of policy and resource management planning. Enhance landscape productivity and species viability through influencing management direction potentially affecting Karuk People and or resources upon which we depend. Restore traditional resource management and social stability to improve the health and wellbeing of plants, animals and humans alike.

Objectives:

Advocate based on the best available science and Traditional Ecological Knowledge, for the implementation of Cultural Environmental Management Practices, the removal of the lower four Klamath Dams and Karuk traditional harvest management basin wide as a means to restore the Karuk Tribe's fisheries. Coordinate the development of strategies and educational materials to assist Tribal programs in the utilization of social justice

issues as a means to achieve programmatic goals. Maintain communication, conveyance and coordination of departmental and/or managerial views and responses to the public through a multitude of media platforms. Work with academia and scientific communities to document, study, and/or validate cultural managerial principle and the correlating health impacts on both humans and the environment. Develop a basic framework of the factual histories of the local area to be incorporated into the curriculum of interested local schools and institutions of higher learning.

Historical:

Issues, like mining during the California gold rush, fire suppression and forest management and state and federal water policy all have had a long devastating impact on the Karuk traditional value system. A greater understanding of tribal management issues and concerns are needed in order to co-ordinate and collaborate in relevant processes. Educational outreach is a necessary tool to provide to not only to management agencies but to our tribal members also. After all, history in our current curriculum does not tell the general public about the Red Cap War and the US Calvary, forest management, forced assimilation, Indian Allotment era etc.

The Spanish traveled into the area as far up river as Whitmore Creek but turned around when they discovered that the territorial occupants knew they were coming and went up the hill to avoid contact and watch them. They never returned to occupy the land or conquer the Native population the within the Karuk Aboriginal Territory. Therefore no valid claim could be made by Spain or Mexico that could constitute extinguishment of Indian Title based on discovery, conquest, or treaty and could not be justifiably relinquished under the treaty of Guadalupe Hidalgo.

The Karuk Tribe has experienced many disproportionate burdens from policy and managerial decisions over the last century and a half. It wasn't until the 1850's when mining claims were established, that this burden truly begun. In many instances the Karuk People were forced away from their villages to live up in their hunting or gathering areas.

Later, the U.S Calvary was ordered to dissolve any conflicts between the Miners and Natives. This culminated in many Karuk families being removed to reservations in Hoopa and Quartz Valley, while the youth were separated and sent to boarding schools. The Miners were never forced to move, therefore causing Karuk People to hold a disproportionate burden caused by that policy decision.

Not all Karuk families were removed. Many went into hiding within their traditional use areas, only to make their way back to the villages to be shot for managing their resources with fire, or fall into alcoholism. Karuk People were treated very prejudicially during this time and many lied about their blood quantum in the interest of being treated better. This still causes inaccurate blood quantum recognition for many Tribal Members today.

Congress also commissioned the negotiation of treaties in California. In 1851 treaties were signed at three locations within the Karuk Aboriginal Territory. All three treaties

had different provisions for the ceding of lands by the Karuk People. The American concept of land ownership (written title) was not understood by the native people of the time, the right to maintain occupation and utilization of the land and resources however was. Congress failed to recognize these treaties and by virtue of law, no right or title was relinquished or extinguished.

These actions lead to the passing of the California Indian Land Claims Settlement Act. This act was intended to reimburse California Indians for the loss of their aboriginal lands. Within this Act, there was a provision to comply with international law in the form of ensuring the implications of accepting this payment was known and understood by the recipients (Flushman and Barbieri 1986).

What ended up happening in the Karuk Aboriginal Territory was checks were sent to individuals with no explanation of what they were for. This caused the misrepresented ceding of ancestral lands once again without the affected parties knowing or understanding the potential effects.

Leading to and following the above actions, there have been numerous policies and managerial decisions that have affected Karuk People. Many of these actions are still unknown or are not understood by Tribal members, but are deeply felt by the membership of today.

For instance, Karuk People are family oriented and still do not understand the concept of blood quantum as a means of determining who one is. Another is individuals forced to a life of poverty are still arrested for utilizing our traditional resources like fish, game and utilitarian materials. Construction of dams have also effected the purpose of our religious actions in relation to the intent of ceremonial practices designed to ensure salmon reach the spawning grounds before we harvest fish for subsistence.

Even amongst other Tribes in the United States, California Natives are disproportionately burdened by policy and managerial decisions. Tribes in nearly every State of the Nation have recognized rights to hunt, fish, or otherwise utilize cultural/natural resources within their traditional use areas.

Dr. Kari Norgaard's Altered Diet Report: Denied Access to Traditional Food, points out some significant issues relative to federal and state natural resource management and the associated socio/economic risks to the Karuk Tribal Community, The health and economic stability of the KTOC is at great risk because of the institutionalized mismanagement of the resources the Tribe has always depended upon. The management of these resources is a vital component to the Tribe's culture and future existence as an indigenous sovereign nation.

Current:

Today, National direction is requiring policy makers as well as land and resource managers to consult with Tribal Governments in the interest of ensuring Tribes are substantially and meaningfully involved in decision making (see USDA Forest Service

National Resource Book on American Indians and Alaska Natives, Executive Order 13175, Hutt and Lavallee 2005). . Departmental staff works diligently to ensure a disproportionate burden is not continually placed upon the environment, as well as Tribal and non-tribal people alike.

Given the limited financial resources acquired annually through grant sources, by the Department, we cannot currently participate in all policy development or managerial decision potentially affecting Karuk People today, let alone redress the burdens of past policies and decisions. We do however focus on some major managerial points.

Hydroelectric dam re-licensing by the Federal Energy Regulatory Commission is one of these issues that are of the utmost importance. We are working with Federal and State agencies and non-governmental organizations to remove the lower four dams on the Klamath River system. We believe that removing these dams is necessary if we are to collaboratively restore viable fishery populations in the Klamath. Restored access to spawning habitat, coupled with traditional harvesting regulations should ensure over time, adequate availability of this resource for ceremonial, subsistence, commercial and recreational use by Tribal and not-tribal people.

Restoration of Cultural Environmental Management Practices is also vital to the perpetuation of Karuk Culture. We are currently working with the US Forest Service, NOAA Fisheries, and US Fish and Wildlife Service in re-establishing large scale traditional managerial actions or uses and restoration of natural disturbance regimes.

We believe that complying with Environmental Justice Policy may also bare a disproportionate burden to managerial agencies because they have no way of knowing or understanding the basis of Karuk Cultural Principle relating to the actions needed to meet their mandates in a successful manner. In many cases this causes our concerns to be addressed inadequately or considered insignificant to policy development and/or managerial actions therefore perpetuating the burden on behalf of the Tribe.

Future Desired Conditions:

The Environmental Justice Program will work towards resolution of many managerial burdens imposed upon the Tribe and its members. The priority achievement is the removal of the lower four dams on the Klamath River, the correlating natural hydrograph, and the subsequent restoration of Spring Run Chinook. The Chinook stocks in the Klamath are in great peril and as such so is the Karuk Tribes access to this staple food source.

Along with all levels of restoration planning, implementation and effectiveness monitoring, this program will provide outreach and public education through a variety of media platforms. These efforts will help inform the public, agency staff, and policymakers alike as to the importance basing managerial actions on Traditional Ecological Knowledge.

This effort should over time, help to regain recognition of Karuk Aboriginal rights, and gain support for the Tribe to equally pursue active managerial duties with the appropriate jurisdictional authority.

It is important to bring back traditional management practices and principles as they relate to healthy populations of fish, deer, elk, acorns, basketry materials, etc. This may provide a short term burden for all resource users, but will provide for long term benefits, as traditional Karuk managerial/harvesting methods have worked successfully for thousands of years.

Fire/Fuels Reduction:

The Fire/Fuels Reduction Program was established in 1994 in the interest of reducing excess fuel loading at the landscape scale. The intent of integrating the fire and fuels reduction programs is to have a well trained workforce that can pre-treat large areas and maintain them with low intensity cultural burning practices while remaining available for local fire suppression efforts.

The continuum of Karuk reliance on forest resources and what now is referred to as "*ecosystem management"*, is in fact highly integrated in the land uses and practices of the Karuk People. Prior to European settlement, the forest vegetation character was shaped by lightning fires and by Native American ignited fires. This established use of low intensity fire by the Karuk People helped promote more open forests that were naturally resilient and resistant to ecological disturbances and ecologically productive.

"Sets fire, that's the way they do. There all time fire and everything grow then like they used to eat here. All those things that they used to eat, y'know, you get in the ground. Now I don't think there is any, too much brush growing. That's only the way they used to grow plants. Lots of green stuff, I used to eat lots of green stuff. There's something that used to grow, looked like parsley. Where there are fire, it great big, great big plant. They used to set fire for everything, acorns too. They set fire, more acorns came back. Fire, no bugs. And that Kishwuf too, we used to eat that. Before, just pick it up, they dig it. I Used to like it, I'd like to eat some, but I can't get there. There was a big patch up here, lots of it too; they'd pick it up. And another kind (of plant) that used to grow around here, but don't grow anymore. That looked like, they call them sunflowers, when they just about this high, that's when they eat it. Nothing grows now because no fire. They grow but they not good to eat, I don't think. And that hazel grow (first the sticks) small, that's what they make baskets with. Next year it be just full of those nuts. I used to have lots of that. There used to be a yellow jacket's nest sometime, (the fire would) cook (the grubs) and (we would dig up) eat it (laughs). That was way up in Wooley Creek."

(Bessie Tripp: Karuk Tribe Interviews)

Recent works have pieced together ethnographic data and traditional knowledge that shows indigenous Tribes set fires in the Klamath Mountains (LaLande and Pullen 1999, Pullen 1996, Blackburn and Anderson 1993, Peri and Paterson 1976). Karuk People historically have viewed wildfire as part of a disturbance cycle that forests depend on and

adapt to. Fire was also applied in ways that reflected the sacred character of the land and its life systems. Fire was viewed as an intricate self-regulating system that was maneuvered to promote many agro-forest benefits (Anderson 1993:162, Harrington 1932:63-65, Lewis 1973:50-52).

The Karuk People continue to value fire as a tool for many purposes at various intervals, affecting the structure, composition, function and productivity of a multitude of habitats which help define the natural fire regime across the landscape. Lower to mid elevation, with some specific higher elevation resource areas historically managed with fire could be better defined as having indigenous or cultural fire regimes.

The concept of **indigenous fire-regimes** as put forward by Lewis and Anderson (2002:6) is generally described as fire-regimes specific to certain ecosystems and plant communities created and maintain primarily by the specific and intended application of fire by indigenous people which may or may not have been in conjunction with natural wildland fires ignited by lighting.

Similar to the above definition is: Cultural fire regimes which historically affected the "composition and characteristics of particular habitats, and especially the culturally defined resources therein, the distinguishing feature of **cultural fire regimes include**: (1) the alternate seasons for burning different kinds of settings, (2) the frequencies with which fires are set and reset over varying periods of time, (3) the corresponding intensities with which fuels can be burned, (4) the specific selection of sites fired and, alternately, those that are not, and (5) a range of natural and artificial controls that humans employ in limiting the spread of human-set fires, such as times of day, winds, fuels, slope, relative humidity, and natural fire breaks" (Lewis 1982 in Bonnicksen et. al. 1999:444).

Burning promotes feed and attracts animals for enhanced hunting. Deer, small animals, and fowl depend on food which is near the ground. Fire releases soil nutrient productivity that promotes nuts crops, fruits, greens and shoots eaten by animals and insects. Periodic burning should shift plant communities back toward food-producing plants by favoring a more frequent renewal based on the reproductive cycles of the resource intended for enhancement (Biswell 1999).

Fire was used to improve access to resource areas and for safety by reducing ease of attack from enemies, predators and to defend against destructive high intensity fires during extreme weather or drought events. An excerpt from a letter by Klamath River Jack summarizes a few of the historic fire applications:

"Indians have no medicine to put on all the places where bug and worm are, so he burn; every year Indian burn… Fire burn up old acorn that fall on ground. Old acorn on ground have lots worm; no burn acorn, no burn old bark, old leaves, bugs and worms come more every year… Indian burn every year just same, so keep all ground clean, no wood or brush, so no bugs can stay to eat leaf and no worm can stay to eat berry and acorn. Not much on ground to make hot fire so never hurt big trees where fire burn"

(Klamath River Jack1916:195).

In collaboration with other agencies, organizations, and/or landowners the Karuk Tribe desires to reinstate the application of cultural burning following pre-treatment fuels reductions as a means of restoring a condition class conducive of the historical human interacted natural fire regime within the Karuk Aboriginal Territory.

Resource Concerns:

Ecosystem function is the primary resource concern for this program. Healthy fire adapted ecosystems are critical to the wellbeing of all cultural/natural resources. With the declining presence of abundant traditional use plant and animal resources in the Karuk Aboriginal Territory there is an essential need to restore natural fire regimes at the watershed scale. Regular collection of downed woody debris and human interacted burning cycles of low intensity fire, will keep lightning caused fires from adversely affecting the resources that are valued by both native and non-native peoples.

In the 1930s fire suppression activities began to increase the forest vegetation density and the accumulation of forest fuels. Logging activities have also contributed to the high fuel conditions. These activities have increased fire intolerant shade tolerant conifers that dominate many forest settings today. Fire adapted species such as ponderosa pine and black oak have declined over the past century (Frost and Sweeny 2000).

Now highly flammable forests when ignited, burn with such high intensity it can damage soil productivity, and/or kill entire forested stands. Catastrophic fires drastically increase watershed erosion which can undermine the capacity of ecosystems to resist further disturbances (Biswell 1999).

The suppression of traditional burning practices of the Karuk Tribe has also added to increased forestland fuels that contribute to severe wildfires. Karuk People enhance their basketry materials by burning them. Not burning sufficient amounts of basketry resources has reduced the quality and availability of these utilitarian resources.

Modern agriculture practices can strip the forest land, deplete the soil, and cause extensive erosion either due to plowing, cultivating, mining, overgrazing, or over-cutting the forest. Karuk fire based management however promotes life and helps protect the forest from severe fires. It is culturally beneficial and highly essential to sustain the ecology of our local forest systems.

The primary natural disturbance process for promoting healthy forest ecosystems in the Klamath Siskiyou Mountains is frequent low intensity fire, with occasional moderate to high severity events contributing to landscape heterogeneity (Odion et. al. 2004). Fire as a natural ecological process promotes a diversity of succession stages, fire dependent species, reduces vegetation density and forest debris, contributes to nutrient cycling and reduces the probability of catastrophic fires.

Catastrophic fires have been proven to have adverse effects on aquatic and terrestrial ecosystems (Bisson et. al. 2003, Dwire and Kauffman 2003, Burton 2005). High intensity

fire can damage stream channels as well as other aquatic environments and tend to turn upslope terrestrial areas into fields of brush. The Karuk Tribe believes that a combination of fuels reduction treatments and traditional burning practices completed at the landscape, watershed, stand, habitat, and/or resource scale(s) will reduce fire intensity eventually allowing natural fire to occur with minimal suppression efforts.

Goals:

Protect cultural/natural resources from uncharacteristically intense wildland fire. Promote fire and fuels management actions that achieve multiple resource objectives. Enhance the interconnectivity of microhabitats and improve ecosystem function. Restore traditional human interacted natural fire regimes at the watershed scale.

Objectives:

Work with Agency and/or Tribal staff to plan and implement fuels reduction and cultural burning projects based on Karuk Environmental Management Practices and principals. Coordinate with Karuk Community Development Corporation to build capacity and develop infrastructure in the interest of utilizing restoration byproducts to reduce overall treatment costs. Establish and maintain expanding wildland fire use areas within individual watersheds. Initiate/implement the appropriate management response during emergency wildland fire situations. Systematically reduce the taxpayer cost burden of wildland fire suppression activities.

Historical:

Historically, the Karuk People have utilized fire for many purposes (Harrington 1932, Lewis 1993). European settlers claimed that controlled burning by Indians was irresponsible but most Tribes have centuries of experience knowing and understanding the benefits of controlled burning. While early accounts are unspecific, burning aboriginal settings would destroy ticks, fleas, lice, insects, and harmful fungal poisons which live in ground surfaces (Williams on-line bibliography). Low intensity fires release mineral nutrients from ash, and promote nitrogen fixing bacteria in the soil, as well as promoting the establishment of nitrogen fixing plants. It also can increase the overall pH of the soil and the productivity of all plants and trees. Aboriginal burning also helps to diminish fire intolerant conifers.

With fire suppression policy implementation, came the suppression of traditional management practices. Native people were shot for performing burning activities as an integral component of the living culture or natural environment. These traditional practices are a vital component of the natural fire regime.

As low intensity indigenous fires were intentionally set, the soil was moist and protected so fire would consume only the dry grass, needles, leaves, litter, and small proportion of duff. A semi-moist environment would help confine fires within the natural features of streams and ridges. Blackened surfaces would help absorb heat in the daytime, reduce

frost damage, and keep soil temperatures higher to promote bacteria activity for spring plant growth.

Other cultural fires require a dryer environment. One example is the ceremonial burning of Offield Mountain. This burn was historically ignited annually in September as part of the World Renewal Ceremony. This occurred immediately before the first significant rain event of the season which falls after the new moon in September and is an important component of Karuk religious practice.

This burn was planned for re-establishment in the mid 1990's. NEPA was completed and a Decision Memo was signed triggering the collaborative re-establishment of this important cultural practice on Offield Mountain. The Tribe completed over 300 acres of pre-burn fuels treatments in preparation of the initial burn. There was a shift in local Forest Service leadership, and differing opinion and/or lack of institutional memory caused the project to stop and our crew was threatened with arrest while performing fuels reduction treatments.

Current:

The characteristic fire regime of the Klamath Mountains is frequent low-severity fires at lower to mid elevations and a mixed fire severity regime with moderate to high severity at higher elevations (Skinner and Change 1996, Frost and Sweeny 2000).

The landscape characteristics and/or condition class of our watersheds today are contributing to increasing fire severity at all elevations (see Odion et. al. 2004 for differing conclusions). This in turn is causing more expensive suppression efforts. This trend is increasing exponentially and there may eventually be little opportunity to utilize commercially valuable resources to offset the costs to the taxpayer for restoration activities.

At this point in time, it is vitally important to shift efforts to a proactive approach of restoring natural fire regimes in combination with the current reactive approach of fire suppression. The Karuk Tribe believes that there will be an increase in cost for the short term which can be offset by marketing restoration byproducts if the new stewardship authorities can be utilized locally through Interagency/Tribal agreements. In return, the nation should eventually receive a reduction, or at least a balance in the costs associated with fire suppression/regime restoration efforts and the Tribe can once again have access to traditionally utilized resources.

Policies relating to this vision are beginning to come into place; however, there is a long way to go to make the programmatic infrastructure behind the Karuk Fire/Fuels Reduction Program a model for success throughout the Nation.

Future Desired Conditions:

Fire has a complex role in creating diversity. Frequent mosaic burns would enrich the areas unique biodiversity (Agee 1993:144-146).

The restored role of both human and fire upon the landscape is the condition in which the Karuk Tribe Fire/Fuels Reduction Program is steering its management direction towards for the future. We envision an Interagency/Tribal and local community collaborative planning and implementation effort at the watershed scale.

Interagency Representatives/Tribal Resource Specialists would comprise a planning body that examines entire watersheds for prioritization of implementation efforts based on achieving multiple resource objectives while meeting restoration needs systematically.

Utilization of a local workforce is a key component of implementing this strategy. Fire/Fuels crews working in conjunction with other specialized work forces would cooperatively accomplish planned activities throughout individual watersheds to prepare for cultural burning practices, and establishment of wildland fire use areas in the interest of restoring natural fire regimes and reducing the cost of needed suppression efforts.

This would ensure that the workforce and equipment needed would be readily available to respond to a wildland fire, while maintaining the necessary institutional knowledge to determine where to let fire burn, when to ignite fire and where to suppress wildland fires when they occur.

Fisheries:

The Fisheries Program was the first environmental program established by the Karuk Tribe. This program conducts monitoring, research and planning in regards to projects protecting, promoting enhancing and restoring Klamath River Basin fisheries resources. Projects are planned and implemented independently and cooperatively with other agencies, Tribes and community groups within the Klamath Basin.

The Karuk Tribe believes that healthy fisheries resources are in actuality the keystone indicator species showing successful managerial practices. If core fisheries resources are in decline, the underlying management of all resources is failing.

"A profound unity emerged from the concerns of Karuk individuals with (the) core elements of water quality and fish at two levels. First, these were issues that concerned every person interviewed. Secondly, there was a remarkable consistency between these Native concerns… and those of the technical experts addressing the state of the Klamath River from the perspectives of biologists, geomorphologists, and other professionals examining the same range of issues."

(Karuk Ethnographic Report 82, Salter)

Resource Concerns:

Fisheries used for ceremonial and subsistence purposes by Karuk People are affected by land, water, and fisheries harvest management practices in the Klamath River Basin as well as surrounding ocean waters. Past, current and future management practices have a profound effect to the fisheries resources valued by the Karuk People. These practices include, but are not limited to; agricultural dams and diversions, forest and fire management, hydroelectric dams and reservoirs, de-watering wetlands, road construction, commercial and recreational fishing, fish hatchery operations, and fisheries restoration practices.

The health of the Tribal Membership is also of major concern. With declining access to abundant fisheries and other traditional food sources, there are correlating health concerns amongst the Tribal population. These food sources are important to reducing the effects of high cholesterol and adult onset diabetes (Norgaard 2004).

Goals:

Protect the health and abundance of Tribal Trust Fisheries Resources. Promote an understanding of ecological processes that allow for the abundance and availability of fisheries resources to the Tribal and local communities that depend on them for a healthy subsistence diet and/or recreation. Enhance the quality, quantity, and availability of correlating microhabitats upon which fisheries resources depend. Restore traditional fisheries harvest management practices and make them applicable to all resource users and managerial organizations claming concurrent or parallel jurisdictions.

Objectives:

Establish Tribal Ordinances relating to traditional harvest methods, timing, and area closures. Educate agencies, interested publics and youth of the importance, foundation, and purpose of traditional fishery management from both cultural and biological perspectives. Work with agencies organizations and community groups to plan, prioritize, and implement emergency and long range projects relating to fish passage, habitat improvement, holding capacity, population augmentation and monitoring.

Historical:

Fish species historically significant to the Karuk Include but were not limited to: Spring and Fall Chinook, Coho, Summer and Winter Steelhead, Pacific Lamprey, Sturgeon. To a lesser extent resident trout, suckers, freshwater mussels, crayfish, sculpins, and catfish were harvested and consumed.

For each fish and run, the Karuk developed unique methods of harvesting, processing, preservation and consumption (Kroeber and Barrett 1960). Harvesting methods involved platform based lifting nets and dip nets, weirs and other similar fences constructed in rivers and creeks, basketry traps, seine and gill nets, gaffs, harpoons, and gouges (Kroeber

and Barrett 1960). Historically fish derived protein provided a significant source of nutrients for the Karuk diet.

Karuk traditional fisheries management like all other culturally significant resources is based on the life cycle of the species managed. Spring Salmon have always been considered the most important species to protect. This is the species that triggered traditional harvest regulations. Once the first salmon was caught (in April or May) at Ammaikiarram (where salmon are made) the end of steelhead season was triggered and following a twenty day period salmon fishing could begin downriver of that point.

Another ceremonial practice approximately thirty five miles upriver then takes place on the new moon in July. This triggers the beginning of salmon fishing season from Ishi Pishi Falls upriver. Still no Steelhead was to be caught. There was an area in between (approximately one mile), including the mouth of the Salmon River where there was no salmon or steelhead fishing allowed at any time.

Individual family groups had additional ceremonial practices that managed other fishing areas which were based on the same managerial principals. For example, there was one fishing area on Wooley Creek; this was thirteen miles up at Dead Horse Creek. When salmon passed that point, fishing could begin there and in the lower Salmon River.

After California was made a State, the Department of Fish and Game created policies and regulations based on the recreational and economic needs of the public, and failed to include or understand the basic environmental needs of fish as they relate to harvest timing. Though Karuk Tribal members continue to practice traditional fishery management practices, many others go by the regulatory policies of the California Department of Fish and Game.

Changes in harvest practices have not been the only action that has had a detrimental impact to fish runs in the Klamath River system. The construction of dams, clearcutting of mature and old growth forests, road building, fire suppression, beaver trapping, and agricultural practices, have also contributed to the decline in fish species populations throughout the Klamath River Basin.

Current:

Today fish are still harvested by Karuk Tribal members. Fish harvested include; Fall Chinook Salmon, Fall Winter and early Spring Run Steelhead, Coho Salmon, Crayfish, Trout and Pacific Lamprey. Many of the listed fish are harvested at Ishi Pishi Falls, while all are harvested to a lesser extent at many locations throughout the Karuk Aboriginal Territory. Ishi Pishi Falls is currently the only place traditional salmon fishing methods are consistently practiced and known by management agencies and the general public.

Current fishing regulations are formulated the exact opposite as traditional Karuk Fishery management. Other salmon fisheries are not utilized because of reductions or elimination of local runs. Spring run salmon are no longer abundant enough in the Klamath River above the Trinity for Karuk Tribal members to successfully sustain the intent of

traditional fisheries management without cooperation and acknowledgement from all fishery managers and/or user groups affecting the species.

Many Tribal members use non traditional methods such as hook and line to harvest Salmon and Steelhead throughout the ancestral homelands. In many instances, individual Tribal members refuse to purchase fishing licenses when subsistence fishing by any method available.

Some families have chosen not to fish at their traditional fishing areas because of declining populations not because it is considered illegal by management agencies. For example the Traditional Wooley Creek fishery has not been utilized for many years because the returns are just not there.

Karuk Tribal members believe in having equal fishing rights as do other Klamath Basin Tribes. At minimum, Tribal members should be allowed to harvest enough fish annually to sustain their families. Fish should also be available for trade and other economic purposes of Tribal members when there are enough to sustain a viable population and maintain commercial uses across the board.

Karuk Traditional Ecological Knowledge and Cultural Environmental Management Practices are being planned and implemented within the Klamath River that includes direct fishery management and indirect forest management benefiting the fishery holistically. This approach is time tested and can be developed into a more contemporary strategy to achieve ecological balance through entire watersheds.

The Karuk Tribe is the original steward of the Klamath River fishery, we have never given up these rights and we never will. Protecting Spring Salmon is an integral part of our religion, and the future of collaborative ecosystem management relies upon recognition of this fact.

In the eyes of the Karuk People, Spring Salmon are the most important of management indicator species. If this population can recover, then we will be well on our way to achieving the goals of every Tribal program.

Future Desired Conditions:

Karuk Tribal members should have recognized fishing rights as do other Klamath Basin Tribes. At a minimum, Tribal members should be allowed to harvest enough fish annually to sustain their families. Fish should also be available for trade and other economic purposes of Tribal members when compliant with traditional harvest management and will allow for sustainable population viability.

In order for this to become possible, traditional Karuk harvest management, needs to be practiced throughout the entire Klamath River Basin. These same principals need to be incorporated into ocean harvest of Klamath River runs.

Karuk traditional management practices should be implemented within the Klamath River that integrates direct harvest, habitat and population management with indirect forest management benefiting the fishery holistically. Karuk Cultural Environmental Management Practices are time tested and proven to be a sustainable management process.

Forestry:

A Forestry Program has yet to be officially established by the Karuk Tribe. The functions of a forestry program have been taken on by other program staff and have consisted mostly of consultation and coordination with agency staff, participation on project level Interdisciplinary Teams (as an "observer"), and NEPA documentation. With new national policies relating to forest stewardship there is need to develop Karuk forestry management practices and principles into an integrated departmental program.

Resource concerns:

The Karuk Tribe believes forest conditions within the Karuk Aboriginal Territory are currently not in the proper distribution, composition, and structure with properly functioning ecological processes. The distribution and composition of conifer, hardwood, shrub, forbs, and grass species today differ from those forest habitats historically, circa 1850, which better supported the Karuk culture.

The establishment and implementation of fire suppression policies and correlating suppression of cultural management practices continues to cause the loss of critical ecosystem components by means of conifer encroachment establishing monocultured ecosystems (de Rijike 2001, Cultural Solutions 1999). The general composition and structure of forest, shrub and grassland vegetation across much of the Karuk Aboriginal Territory is currently incompatible with the reintroduction of fire as a cultural management/ecosystem maintenance tool.

Federal forestry programs, though not at such a large scale today, implement logging practices that focus on economics rather than ecosystem restoration and therefore have a narrow view as to the integration of environmental needs into resource management. Through consultation and coordination with the agencies involved in timber harvesting programs, we are beginning to convince local agency personnel to look more closely at diversity in the form of integrating fire, wildlife habitat, water balance, fuels reduction, and/or cultural resource management into the forestry related project planning and implementation (Clinton 2000 Executive Order 13175, USDA 1997).

Though these principals, with help from the Department, have made their way into some planning and policy documents, the proper perceptions of these principles have not made there way into the actual implementation of agency forestry programs.

The Karuk have a fire dependant and adapted culture, and as a result of economically driven forestry management, the local forest structure no longer provides on an adequate scale the diversified resource access that is vital to the perpetuation of Karuk culture.

Although Timber harvesting is not a Karuk traditional cultural practice, it has become a necessary management action if completed in a fashion that augments and enhances cultural management practices in the interest of restoring fire adapted ecosystems.

The Karuk Tribe believes there is now a need to manage forest habitats in a sustainable manner which can result in the restoration of human interacted natural disturbance regimes while providing abundant cultural/natural resources, balanced ecological processes, as well as local economic opportunities and reduced cost of management activities to the taxpayer.

Goals:

Protect territorial watersheds from being adversely effected by economically driven single resource timber management. Promote sustainable timber management practices based on achieving multiple resource objectives (Kimmins 1997). Enhance the integrity of forest stand dynamics and cultural/natural resources. Restore diverse fire adapted ecosystems and correlating natural fire regimes at a reduced cost to the taxpayer.

Objectives:

Utilize silvicultural, mechanical, or hand methods to modify the composition, structure, and morphological form of forested habitats to be enhanced and maintained by a culturally defined human interacted natural fire regime. Integrate traditional ecological knowledge, western science, and departmental program objectives into forest management activities. Implement a stewardship based approach to integrated management practices at the watershed, scale. Ensure any economic benefit from management activities transfers to additional landscape restoration actions. Plan forest stand improvement treatments to accomplish fuels reduction, wildlife habitat enhancement, cultural basketry material improvement, and traditional foods production.

Historical:

Prior to European contact, forest habitats comprised a diverse mosaic of tree, shrub, forbs and grass species. Climate, lightning fires, fires set by native people, regular collection of fire wood and utilization of resources influenced and shaped the abundance, distribution, structure, and composition of vegetation species. Frequent burning maintained openings, reduced ground fuels, and reduced fire-intolerant conifer populations (Cultural Solutions 1999). Open forests consisting of grass, fire resistant pine, oaks and other hardwoods dominated south and west facing slopes. On north facing slopes and in drainage bottoms mixed conifers were more common and the canopy was less open. Lower elevations were covered by scattered groups of hardwoods and conifers with an under-story dominated by chaparral, grasses and forbs (Frost and Sweeney 2000). All these vegetation zones, habitats and unique plant communities were utilized, managed, and culturally important to the Karuk People (Schenck and Gifford 1952, Baker 1981).

Timber harvesting and road construction has notably reduced the availability of mature forests by clearing and fragmenting large blocks of the forest, (nearly 60%) outside wilderness and roadless areas. The regions steep slopes, unstable soils, even-aged forests and are not ideally suited for low impact economical timber production.

Historic logging practices have caused monocultured environments. Plantation maintenance prescriptions aimed at hardwood suppression have further degraded natural succession in the regeneration of these managed stands. Cutting of the hardwoods in these areas increases fuel loading exponentially, causing a need for multiple entries that can cost more than the original timber receipts and the value of timber produced combined. This type of management practice can cause additional loss on "investment" and/or critical ecosystem components, in the event a wildland fire burns though managed stands.

Federal reforestation efforts have for the most part emphasized conifer forest conversions which have reduced the population and/or health of native hardwoods. Once timber stands are harvested with even-aged prescriptions they may take up to a century to mature. Former clear-cut areas are costly to maintain because early seral stage vegetation competes with replanted conifer establishment and growth and is in essence the exact opposite of natural forest succession. Wildfires that burn through clear-cut plantations tend to be stand-replacing and have a high severity fire effect which can drastically interrupt the regeneration of these areas (Odion et. al. 2004).

Current:

Today there are insufficient amounts of open spaces with larger fire tolerant species. Fire intolerant conifers, younger Douglas firs (10-100 years) and shrubs have increased in density in areas formerly experiencing higher fire frequencies with lower severity. Shade intolerant species are not only declining in health and abundance from conifer encroachment, but are also being impacted from increased fire intensity. These are both directly related to the suppression of fire and cultural management practices.

Local forestry practices of today are increasingly becoming hardwood tolerant in the planning phases. However implementation remains economically driven and contract development fails to maintain the principal vision of tribally influenced planning documents. Although policy relating to integrating resource management practices is becoming more open to change, agency guidelines and programmatic implementation actions are not meeting the intended objectives of ecological stewardship.

The Karuk Tribe continues to try to integrate traditional management philosophy into current management practices, but fundamental differences in policy interpretation and perceived authorities tend to perpetuate an elementary barrier to truly integrated Interagency/Tribal problem solving and collaborative management actions.

Future Desired conditions:

Karuk Environmental Management Practices are consistent with natural processes that encourage native hardwoods and conifers that promote stands and mosaics of different age classes from young to mature, to old growth trees, with standing dead trees, downed trees, and logs in riparian zones and streams. Park like forest surroundings are historically consistent with natural variations that promote landscape diversity.

Successions of hardwoods and conifers are dependent on natural disturbances. Disturbance regimes, like fires, floods, landslides, wind events, and heavy snow help to regulate natural ecosystem processes and functions (Kimmins 1997). Timber harvests as part of a holistic management strategy that mimics natural disturbance regimes and enhances the life cycles of flora and fauna should provide significant protection against disrupting natural diversity as well as ensure management actions remain ecologically sustainable within the historic range of variability under which forested environments evolved.

Watershed scale planning and implementation efforts that integrate programmatic objectives into sustainable multi-entry management practices are key elements to restoring ecological systems. Removing short term economic gain as an underlying objective will enhance long term cost reduction, and should allow for sustainable stewardship at a reduced cost to the taxpayer while increasing the local tax base.

Native American Graves Protection and Repatriation:

The Native American Graves Protection and Repatriation Program was established in 1999 in the interest of facilitating the return of specific cultural items -- human remains, funerary items, sacred items, and objects of cultural patrimony that are known to be affiliated to the Karuk Tribe

Resource Concerns:

It is Karuk custom to strictly follow practices associated with traditional burial rites. The Tribe recognizes the disregard of such rites by museums and Federal agencies in relation to human remains and funerary objects in their control, which are affiliated to the Karuk Tribe.

It is believed by the Karuk People that sacred, ceremonial and select cultural items are living beings, possessing an individual spirit and require nurturing and individualized attention. Storage methods and uses of these cultural items, while under the control of museums and Federal Agencies, is of the utmost concern to the Karuk Tribe.

Goals:

Protect the human remains, funerary items, and cultural items of the Karuk People. Promote the interest of the Karuk Tribe in the event of an inadvertent discovery and intentional excavation or removal of Native American remains and objects within the Karuk Aboriginal Territory. Enhance the Tribes ability to manage Tribal and family

specific cemeteries and/or ceremonial items. Restore Tribal control of items removed from the Karuk Aboriginal Territory.

Objectives:

Facilitate the return and reburial of human remains and funerary items affiliated to the Karuk Tribe. Repatriate sacred and ceremonial items, and objects of cultural patrimony, to the Karuk People. Preserve the knowledge of traditional methods of construction, style, materials, and uses of sacred and ceremonial items. Consult with relevant parties in the event that an inadvertent discovery of Native American remains takes place within the Karuk Aboriginal Territory. Prevent intentional excavation and removal of Native American remains and objects within Aboriginal Territory. Obtain complete inventories of cultural items under the control of museums and Federal Agencies. Review and prioritize the repatriation of cultural items.

Historical Condition:

The Gold Rush brought the arrival of a great number of Europeans into Karuk Aboriginal Territory. With this influx came a number of conditions resulting in a large amount of sacred and ceremonial items leaving the Karuk Aboriginal Territory. The most damning of conditions was forced assimilation resulting in the virtual outlaw of traditional Karuk ceremonies.

The Karuk People have historically been viewed as outlaws for making use of the land for subsistence purposes and many relied heavily on newly introduced general stores. Tribal people were often convinced that their ceremonial items were no longer of use for traditional activities; however they could be used to repay debt incurred for services provided by doctors, dentists and at local stores. In many cases this was the only means of payment to avoid being jailed of forced to work in the mines.

The late 1800's early 1900's were the height of the curio collection era for this area. An enormous number of ceremonial, cultural and burial items, as well as the remains of our ancestors, left this area in the name of curio collection and academia, often by theft and coercion.

Academia's interests in Native people resulted in human remains and burial items being removed and sent to institutions for study. All these conditions resulted in large numbers of sacred and ceremonial items being in the control of agencies and museums throughout the United States and around the world.

Current:

The Native American Graves Protection and Repatriation Act (NAGPRA) became law in 1990 with the intention of providing protection for Native American graves and an avenue for the repatriation of sacred and ceremonial items, objects of cultural patrimony as well as human remains and burial items (associated and unassociated).

In 1999, the Karuk Tribe established a NAGPRA Program that coordinates the documentation, consultation and repatriation processes associated with the law. Research has uncovered the knowledge of the use of pesticide as preservatives on cultural items and the dangers associated with the use and storage of pesticide-contaminated items.

The NAGPRA Programs works to facilitate the use of repatriated ceremonial items in the ongoing traditional ceremonies of the Karuk People. The Program has also made it a priority to educate traditional practitioners of the risks associated with the use of contaminated cultural items.

Future Desired Conditions:

The Native American Graves Protection and Repatriation Act Program's goal is to complete the return of all human remains, burial items (associated and unassociated) and the repatriation of all sacred, ceremonial items and objects of cultural patrimony that are attributed to the Karuk People.

Our desire is to continue to facilitate the use of repatriated cultural items in traditional ceremonies. We would like to continue educating about the dangers of using pesticide contaminated cultural items. We hope that in the future, funding and facilities will be available to determine a process, and provide for, the safe decontamination of cultural items.

The NAGPRA Program will continue to utilize the Native American Graves Protection and Repatriation Act processes in conjunction with the Cultural Resources Program to avoid the inadvertent discovery and intentional excavation or removal of human remains within Karuk Aboriginal Territory.

Solid Waste:

Proper waste management has short and long term consequences on the environment and directly affects the health and wellbeing of the Karuk People. Solid Waste Management and education is an important component of long term environmental planning. Incorporating an Integrated Solid Waste Management Plan (ISWMP) and waste education program we will create the needed infrastructure (Coordinator, Codes and Ordinances, enforcement guidelines, and educational materials) to evaluate the types of wastes generated, identify areas of concern, and implement changes to resolve these concerns. This process will allow the Karuk Tribe to continue to build internal capacity, technical ability and a stronger environmental protection capability.

A component of the ISWMP development will be to assess the types and amounts of wastes generated by Tribal activities (all aspects of Tribal business and services, new housing construction, grounds maintenance, health and medical clinics, etc.). Identifying the types of wastes generated will allow the Tribe to target sources of waste that can be reduced, recycled and/or avoided. Education will enable the Tribe to be informed when making disposal and purchasing decisions. Research will provide options for sustainable alternatives (less toxic or produce less waste).

An important component of waste reduction is community and Tribe wide education. Presenting community members (Tribal and non-tribal) with objective, scientifically sound information produces an educated community that is aware of the issues that affect the environment and human health. Education stimulates critical thinking, which allows individuals to make informed decisions, weigh various sides of an issue, and enhances their own problem solving and decision making skills. Increased public awareness and knowledge also helps to foster stewardship, develop a proactive community base and leads to responsible actions. The waste education program will research, develop, produce and distribute educational materials focusing on sustainability, environmental and human health concerns regarding proper disposal of wastes as house-hold hazardous wastes, anti-illegal dumping, etc) and waste reduction including green purchasing, recycling options and The program will be coordinated with the existing in-school Karuk Environmental Education Program and Pilot Recycling Program.

Resource Concerns:

As world population increases and resources become even more limited, the need to conserve and reuse resources becomes even more critical. Impacts to the environment directly affect human health, economic viability and sustainability. Resources that simply become garbage are not available for future generations. The creation of garbage presents many issues that can have long term environmental impacts. Even if we implement solid waste management programs that reduce the amount and toxicity of garbage, the toxicity chemicals can still find a way into the environment during the extraction, production, transportation, use and reuse. Even in small amounts, persistent, bioaccumulative and toxic chemicals released into the environment can present long term risks to human health and the environment.

Goals:

Protect the environment, resources, health and wellbeing of the Karuk Tribe. Promote reduction of the environmental, health and economic impacts of the waste generation activities of the Tribe. Enhance the Departments ability to assist with integrated problem solving throughout the Tribal and local communities. Restore the social, environmental, and physical wellbeing of the local population and the environment within the Karuk Aboriginal Territory.

Objectives:

Establish a Karuk Integrated Solid Waste Management Program. Facilitate the development of a waste education program and an Integrated Solid Waste Management Plan (ISWMP). Focus the waste education component on a community based waste education campaign to adopt waste reduction and/or proper disposal principals in conjunction with the Environmental Education Program. Incorporate all tribally owned and operated businesses, services, housing, future ventures partners into planning and implementation. Assist in developing ordinances and policies intended to ultimately reduce the environmental impacts of the waste generation activities.

Historical:

Prior to European contact, that the Karuk did not generate any true garbage. All solid wastes were comprised of quickly biodegradable materials or natural materials (bone and rock). In most cases there was no waste as every part of everything harvested was utilized as food, tools, glue, clothing, etc. There was very little or no long term impact of any the waste generated. There were no unnatural substances created, even human excrement was dealt with by dispersing the concentrated nutrients through decomposing wood.

Following European contact, waste consisted primarily of cans and bottles, and battery cells that were discarded in concentrations around homesteads, mines, or any area where commercial products were utilized. After construction of roads and the influx on vehicle traffic, landfills were created throughout the Karuk Aboriginal Territory. These disposal sites continued to operate well into the 1990's when the last landfill was finally capped.

A few of these disposal areas were not landfills by definition. They were basically placed where people dumped their garbage over a cliff. In many cases, a good portion of this trash ended up below the high water mark and was redistributed during flood events. Most of these areas have been cleaned up of the solid waste. However, there are no testing wells at these sites to monitor for potential chemical contamination.

There are many personal accounts locally of Forest Service Personnel being asked to dispose of 2-4-D, and 2-4-5-T directly into the landfills following the herbicide ban in the late 1970's. This could be causing great harm to ground water quality, and may be going unnoticed as the testing of the wells do not look for these contaminates.

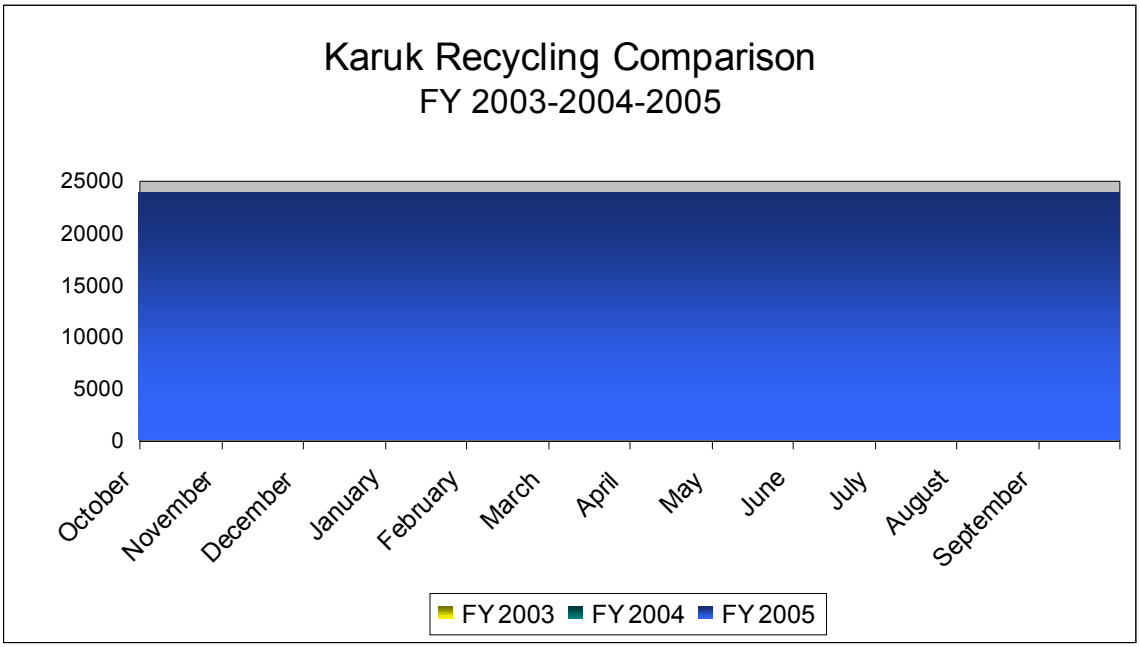
The management of human excrement changed drastically thorough this time period as well. This went from the traditional nutrient cycling through the use of decomposing wood, to outhouse pits, to the individual septic systems that are in use today in most areas.

Current:

Waste generated by the Karuk Tribe is primarily managed by the Grounds Maintenance Department, although each Department is responsible to develop protocols specific for their field of expertise. Tribal facilities are served either by a collection service or by Tribal Grounds Maintenance crews that collect waste generated by our offices and facilities and take it to the local disposal facility.

The Orleans, Somes Bar, Happy Camp and Forks of Salmon communities (Tribal and non-tribal) are serviced by the Karuk Mobile Recycling Trailer Pilot Program. The Program began in 2003, and since then, we have successfully averted 108 tons (215,720.7lbs) from landfills, burn barrels and illegal dumping, an average of 36 tons per year! We regularly recycle 13 items (glass, cardboard, magazines, white paper, office pack, newspaper, steel, tin, plastics (#1, #2, #3-7), batteries, aluminum, packing peanuts,

and telephone books. We also host annual recycling events such as the American Automobile Association (AAA) Battery Round-up, multi-area abandoned vehicle collection, and white goods recycling events (appliances, etc). Each year our recycling program grows.



The current Mobile Recycling Trailer Pilot Program has had outstanding success, but revenues from the recyclable materials are not enough to support this program. The success has emphasized the need for the continuation of this program and the goal is to expand and create a cost effective, if not self-supporting, permanent program. The focus of the current program has been data collection and infrastructure development.

There are some remaining illegal dumping sites scattered throughout the Karuk Aboriginal Territory. Some of these still end up in watercourses. The Tribe participates in annual River Cleanup events that help to alleviate, but does not prevent this problem entirely.

Future Desired Conditions:

Given the complexity of coordinating the resolution of solid waste issues amongst all Tribal departments, affiliates, and local communities, this program is pursuing its own Integrate Solid Waste Management Plan. This plan will be incorporated into this document as an attachment.

For the purposes of this document the desired future conditions that should be addressed in the ISWMP include but are not limited to; increased reuse/recycling opportunities locally, affordable disposal, waste reduction, eliminate illegal dumping, cleanup of illegal dump sites, and litter removal/aversion strategies.

The department envisions being actively involved in all aspects of solid waste management. However the ISWMP should identify to what extent our involvement will be.

Soils/Minerals:

A Soil/Minerals Program has yet to be officially established by the Department. Some functions of a soils program have been taken on by other program staff in Watershed Restoration. The department's role has consisted mostly of consultation and coordination with agency staff, participation on project level Interdisciplinary Teams, and NEPA documentation. Geologists and soil scientists' consultants have been utilized when specific skills for planning and analysis are needed. With national federal policies relating to mining and aggregate development there is need to develop Karuk soils and minerals management practices and principles into an integrated departmental program.

Resource Concerns:

Past and current mining activities have destroyed and degraded the environmental quality Karuk People depend upon for cultural survival. The effect of past hydrologic mining has resulted in many areas that are in need of geologic stabilization and reconfiguration, vegetation management, and toxic clean up to remove mercury, acid mine drainages, cyanide spills and other contaminates.

The recent onslaught of recreational suction dredging activities can threaten fisheries habitat quality, water quality and produces foreign materials and substances known to be harmful to the environment.

Aggregate and rock material sources need to be inventoried and developed and preferably implemented in the interest of restoring areas covered with old mine tailings with methods that prevent damage to off-site natural resources or that are consistent with natural disturbance regimes.

Locations of culturally significant minerals need to be protected from extensive mining and/or monitored to prevent excessive damage to habitats or water quality, examples midden soils white and blue clay, soap stone, nephrite or "jade" quarries. Soil erosion associated with management activities need to be inventoried, monitored, and mitigated or formulated in the interest of habitat restoration.

Goals:

Protect water quality and fisheries from mining, mineral extraction, quarry, and soil disturbance activities. Promote intensive regulation and evaluation of mining or mineral extraction methods and practices that can potentially degrade other resources. Enhance knowledge through monitoring of impacts and effects to the environment associated with past and current mining or aggregate activities to improve operations. Restore degraded areas affected by mining, aggregate, quarry, or road related soil disturbance, that include but are not limited to recovery and removal of toxic contaminants, reduce soil erosion,

improve natural hydrologic function, re-vegetation, and protection of cultural/natural resources.

Objectives:

Implement restoration measures that mitigate damaged areas affected by past hydrologic mining to minimize soil erosion, reconfigure topographic contours and drainage, and manage vegetation to enhance the structure and composition to accommodate natural processes (fire, hydrologic connectivity, and nutrient cycling). Remove and/or reduce the presence of toxins such as mercury, sulfuric acid and cyanide in sediment deposits and watercourses. Monitor and reduce the effects and activities associated with suction dredge mining along the Klamath and Salmon River watersheds. Inventory rock sources and mitigate for erosion potential and off site sediment delivery. Develop economically and environmentally low impact methods of aggregate removal to supply for local upgrade, maintenance and restoration activities. Work with Federal, State, and County Agencies, and community groups to ensure cultural/natural resource protection measures are adequate and in place.

Historical:

Prior to mining in the 1850's, the Karuk practiced limited amounts of mineral extraction. Soap stone was extracted from boulders or collected from sources resulting from natural landslides. Other minerals, primarily salts, and materials for paints were collected on the surface. Obsidian traded from other Tribes was sometimes buried to maintain use quality.

With the discovery of gold the 1850's non-Indian settlers began to establish claims and develop mines along rivers, creeks, terraces, and upslope areas. The diverse geology and minerals of the area allowed diversified mining of gold, silver, cooper, and other economically valuable metals and minerals. Hydraulic mining and the use of mercury and cyanide to recover gold, resulted in the wide spread removal of vegetation, erosion and pollution.

Hardrock mines in many cases exposed sulfite deposits to water and oxygen causing them to change to sulfates and subsequently caused chronic acid mine drainage. This has also occurred in tailing disposal areas that were improperly placed in wet areas.

Many Karuk villages, houses, and cemeteries on river terraces were washed away as result of mining operations sometimes with people still in the house (bright 1978). The subsequent damming, moving of river channels, dredging and suction mining impacted river courses, fisheries and aquatic habitat quality. After World War II, increased road building and associated aggregate development further impacted watershed values, wildlife and fisheries habitat.

Current:

Degraded watersheds have slowly recovered from initial mining, road building, and aggregate activities. Many areas still have unstable slopes and higher than normal erosion rates resulting from formal mining, road building, and aggregate projects. Restoration of degraded mining sites which have re-vegetated remain to be issues of concern. Properly functioning hydrologic connectivity in some watersheds is impaired from former mining ditches, diversions, and tailings.

Roads traversing highly erosive and unstable soils result in degraded water quality and fisheries habitat. Suction dredging, recreational and commercial, impact fisheries habitat and water quality. Small localized surface and placer mines for minerals or rare stone (nephrite-jade and/or serpentine-type) can have potential impacts to water quality resulting from off-site sediment transport, but are a small percentage of the overall impacts associated with mining, roads, or aggregate activities.

Future Desired Conditions:

The Karuk Tribe desires the implementation of methods to limit and/or mitigate for the sediment transport or delivery of materials which degrade water quality and fisheries habitat. Where feasible, areas contaminated with mercury or other toxins should be located, decontaminated, and restored. Additionally, in-active mines should be properly contained to prevent off-site transport of material or contamination of ground and surface waters. Limit the used of suction dredging in rivers and creeks at times that threaten fisheries or water quality.

There is also a need to restore hydraulic mine areas in many instances, these areas are directly adjacent to watercourses. These areas do not maintain a significant vegetation component and subsequently can contribute to excess heating of adjacent streams.

Watershed Restoration:

The Watershed Restoration Program was established in 1996 in the interest of developing a programmatic approach to watershed restoration in the Karuk Aboriginal Territory. In collaboration with various partners, we have established a framework to identify, plan, and implement projects that benefit water quality and quantity. Redefining and expanding the role of the Karuk Tribe in managing traditional cultural/natural resources has brought about the development of a watershed restoration partnership between the Karuk Tribe and the Forest Service. Building the Tribe's capacity to play an integral role in ecosystem management is an effective means by which the Mid-Klamath and Salmon River sub-basins will be restored and integrated resource management achieved.

Resource Concerns:

Environmental degradation within the Karuk Aboriginal Territory affects water quality, forests, fisheries, and cultural sites important to the Tribe. Anadromous fish species are culturally valuable, and the restoration of riparian, aquatic, and upslope habitat is crucial for their survival.

Current watershed conditions are influenced by various disturbances in combination with a large percentage of unstable or easily erodible land and soil types. Road systems were developed to provide access primarily for timber extraction, and subsequently for fire suppression. Studies in the Mid-Klamath Region have shown that roads are a primary contributor of sediment into stream courses. Sediment input from source roads has two generic causes; landslide derived sediment and surface erosion. Landslide mechanisms in territorial watersheds are primarily debris flows and torrents. Surface erosion takes the form of rills, gullies and dry raveling from steep road cutbanks. Many of these problems are triggered or compounded by excessive water channeling, inter-drainage water transfers, and exposure of cutbanks to frost, wind, and rain splatter (USFS LMKWA 2003).

The Karuk Tribe has determined hydrologic restoration of problem roads and instream habitat connectivity to be a high priority within the within the Karuk Aboriginal Territory. The vast majority of roads and culverts were designed and constructed utilizing a 20-year flood standard. These culverts do not meet current design standards (100-year flood standard) or regional policy. It is predicted these culverts will fail during large storm event.

Roads that are in the upper segments of watersheds, specifically affect the mid and lower portions of creeks. A declining road management budget has decreased road maintenance leading to degenerated road systems. The majority of Karuk territorial drainages do not meet fines or embeddedness values for the Northwest Forest Plan, National Marine Fisheries Service Matrix of Factors and Indicators, or reference streams.

Excessive fines and substraight emdeddedness can decrease embryo emergence, fry survival, invertebrate populations that serve as a food base, rearing habitat available for juvenile salmonids, and pool frequencies (Hicks et. Al 1991). High sediment levels also contribute to the impairment of the Klamath River effecting temperature, nutrient and dissolved oxygen levels reducing refugial capacity. At risk fish populations have been severely impacted by this impairment. Restoration of these quality habitats has been deemed critical and necessary as having valuable water quality benefits when hydrologically restored.

Many parameters of water quality in the Klamath River are maintained or notably improved as the river flows downstream of Seiad Valley and is diluted by cool high quality water from the numerous tributaries of the Lower Mid Klamath. Water originating from the Upper Klamath Basin, Shasta and Scott valleys are often poor quality in the summer due to agricultural use, dams and industrial discharge. The pure cool water from these tributaries is important and critical in maintaining water quality in the Klamath River and providing thermal refugia for anadromous fish species.

Other activities affecting the Karuk Aboriginal Territory include past hydraulic mining operations and massive flood damage. Hydraulic mining has left stream channels unbalanced and often disconnected from the Klamath River. In addition, major flooding following dam construction and wetlands reclamation in 1955, 1964, 1997 and 2006 compounded past land use problems and significantly altered many tributaries. Efforts should concentrate on restoring form and function to these areas.

Preliminary estimates of restoration activities needed would include:

1. Road upgrading/decommissioning and slope stabilization across jurisdictional boundaries
2. County and State highway upgrades
3. Fish Passage
4. Streambank Stabilization
5. Refugia Enhancement

6. Riparian Planting
7. Restore connectivity, and refugial capacity of tributaries along the Klamath Mainstem.
8. Instream habitat protection and enhancement

Goals:

Protect watersheds from road related erosion, water quality and/or habitat connectivity problems. Promote activities in tributaries that contribute to the quality and availability of spawning, rearing and migration habitat, for Threatened and Endangered, anadromous, and resident fish populations. Enhance the quality and quantity of water and correlating microhabitats in territorial watersheds as they relate to road related impairments. Restore road related hydrologic function within and adjacent to high priority roads and/or watersheds.

Objectives:

Establish and maintain beneficial partnerships through collaboration with Agency staff to plan and implement watershed restoration projects. Implement watershed restoration projects while providing job training opportunities, and community economic development. Build capacity and develop infrastructure in the interest of reducing restoration costs, while providing for timely habitat recovery. Coordinate with departmental program staff to achieve maximum planning integration and coordinated implementation of multiple resource objectives.

Historical:

Historically the Karuk People utilized a system of trails within the Karuk Aboriginal Territory for travel, trade, ceremonial and subsistence uses as well as a link to neighboring Tribes. These trails are predominately located along the river corridor and ridgelines. Some of these trails are utilized to this day for a variety of purposes. Other portions of this trail system were co-opted into the USFS trail system.

Post World War II, an extensive road system was developed to provide access to private property, gold mines, for fire suppression, and extended to timber extraction. In limited cases, short spurs were created for recreational river access. This road system now provides access to many parts of the watershed for a variety of human uses, e.g., timber and fire management, recreation, access to wilderness trailheads, hunting, woodcutting, gathering, sightseeing, etc. These access points can cause resource impacts on streams, riparian areas, and to wildlife. A declining road management budget has decreased road maintenance throughout the Aboriginal Territory.

Current:

Naturally occurring erosion rates within the Karuk Aboriginal Territory have been greatly accelerated by human activities, especially federally managed timber harvest and road building. Today, the Aboriginal Territory contains approximately 3,615 miles of road

and over 4,400 perennial stream crossings, most of which need to be addressed in some manner. These roads need to be upgraded, including culvert replacement and road out sloping, and in some instances need to be decommissioned in the interest of restoring hydrologic function and increasing water quality.

State Highway and County road systems have become primary fish passage barriers on many streams in the Klamath River system. In many cases construction of these roads has created velocity barriers and changed the natural hydrology of streams. This has reduced the quality and quantity of habitat upon which anadromous and resident fish species rely. In many areas within the Karuk Aboriginal Territory, culverts are failing during peak flood events, causing additional sediment input into the mainstem Klamath.

Current policy relating to emergency flood repairs is hampering the ability to upgrade these problem areas that are failing during every flood event. Upgrades cannot currently occur as part of emergency work under these policies. The cost of upgrading these areas to allow for fish passage and natural hydrologic function is minimal compared to the emergency work that is needed during every 10, 50, and 100 year storm event. This is especially true when accounting for the value of a perpetual fishery resource.

Future Desired Conditions:

To achieve a future desired condition the initial step would be to perform a territory-wide analysis on a watershed scale that will identify current road system uses, impacts, and resource concerns, and recommend strategies for future transportation system management; decommissioning, hydrologic restoration, and maintenance. This analysis would also identify other collaborative restoration opportunities to mitigate the negative ecological impact of post-contact management activities on the landscape and be prioritized based potential achievement of multiple resource objectives.

The end result of these restoration activities would reduce the impacts of the current transportation network, and post contact management activities while still allowing for the management and utilization of cultural/natural resources within and adjacent to the Karuk Aboriginal Territory.

Water Quality:

The Water Resources Program was established in 1993 to conduct monitoring, research, and convey Tribal concerns relating to watershed management activities in the Klamath River Basin with particular focus on issues affecting water resources within and adjacent to the Karuk Aboriginal Territory.

The Karuk Aboriginal Territory has over 1,900 miles of perennial streams, thousands of acres of wetlands and riparian areas, and approximately 107 lakes. The Klamath River is the primary water body that exists on the Karuk Aboriginal Territory. Approximately 90 miles of the Klamath River transects the Territory. Several major tributaries flow into the Klamath within the Karuk Aboriginal Territory.

The Klamath River is on California's 303(d) list for impaired water bodies. Specifically, the Klamath River is listed as impaired for temperature, nutrients, and dissolved oxygen. Some of the major tributaries to the Klamath are also listed: the Shasta River for temperature and dissolved oxygen, the Scott River for temperature and sediment, and the Salmon River for temperature. Total Maximum Daily Loads (TMDLS's) are being developed for the Klamath River and tributaries listed above and development should be complete by 2007. Implementation of the TMDL's is a lengthy and costly process. A variety of stakeholders need to be involved in TMDL implementation in order to achieve a successful outcome.

In 2000, the Karuk Tribe developed interim water quality standards. In order to support beneficial uses and Tribal Trust Resources associated with COLD waters, a maximum temperature of 21°C and a maximum seven-day average of 15.5°C was established. These temperatures are often exceeded in hot summer months in both the Mainstem River and major tributaries. For example, it is common for temperatures to reach 26 and 27 C in July, August, or September. High temperatures are detrimental to sensitive Tribal Trust Species such as steelhead, Chinook salmon, Coho salmon, green sturgeon, and lamprey.

Resource Concerns:

Temperature, dissolved oxygen, sediment, nutrients and toxins are all major concerns relating to water quality within and adjacent to the Karuk Aboriginal Territory. Water quantity can compound the effects of these problems. All of these issues can and do have lethal implications to Tribal Trust Species. Temperature, flow, and nutrients effect dissolved oxygen, which can weaken fish stocks and make them susceptible to disease and parasite intrusion.

The Karuk Tribe relies on a healthy fishery for subsistence and ceremonial uses. In recent years Tribal members have been concerned as to the health affects that may be associated with consumption of sick fish. In September 2002, close to 100% of fish caught for consumption had symptoms never before seen at the Tribal Fishery. It was noted that within one week after increased water release from Irongate Dam, there was a noticeable reduction in symptom severity. By this time however, over 68,000 adult salmon had died. This event can be directly tied to water quality and quantity related problems. Aside from this major fish kill, there are juvenile fish kills annually that are also directly related to the above issues.

There are other concerns that are specific to Tribal Ceremonies. Some ceremonies not only involve bathing in the mainstem Klamath, but require consumption of Klamath River water. The current condition of the waters in the Klamath no longer allow for this important practice. This places an undue burden on our rights to freedom of religion.

Toxins have recently become a major water quality concern. In 2005 the toxin microcystin was discovered in the Klamath Basin. This toxin is caused by the decomposition of the algae microcystis aeruginosa. There has been one human death that has been tied to microcystin poisoning from consumption of blue-green algae diet supplements harvested within the Klamath system. This toxin causes cumulative

degenerative liver failure and can be contrived through consumption and inhalation. Numerous dogs have also died in the area where this toxin was discovered.

Goals:

Protect the health of human, aquatic and terrestrial species from water quality impairments within and adjacent to the Karuk Aboriginal Territory. Promote sound water management practices that improve water quality conditions. Enhance the quality and quantity of waters within the Klamath River Basin. Restore water quality conditions so Tribal and local communities can safely use water bodies for ceremonial, subsistence, and/or recreation needs.

Objectives:

Work with Tribes, Federal and State Agencies, Nongovernmental Organizations, and Community Groups to achieve water quality goals for the Klamath basin. Establish and implement federally recognized water quality standards for Karuk Aboriginal Territory. Coordinate with stakeholders in the basin to monitor water quality trends in the Klamath River and major tributaries. Participate in processes independently and with stakeholders to plan and implement the enhancement, protection, and restoration of water quality and quantity. Coordinate research efforts in the basin to address issues related to water quality and watershed health.

Historical:

Historically, the Klamath River and its tributaries supported a healthy fishery which in turn reflects and supports a healthy ecosystem. The flow regime in the river was dictated by natural processes including winter rains, snow melt and wetland recharge. Karuk upslope management practices encouraged healthy water quality conditions by supporting large wood in riparian areas and maintaining balanced evapo-transpiration rates through vegetation manipulation. This allows for large woody debris recruitment into the creeks which can increase pool depths and decrease water temperature while decreasing winter peak flows and increasing summer base flows.

The hydrology of the Klamath River Basin prior to European contact created the habitat and maintained the water quality in which anadromous and resident fish species evolved. The natural fluctuations in flow regimes were regulated naturally by the terrain surrounding the Klamath system. During peak weather events, flows below the current location of Keno Dam were regulated by the flooding of the Tule Lake Region. When peak flood events occurred (10, 50 and 100 year events) a narrow natural reef at the current location of JC Boyle Dam pushed thousands of acre feet of water into Tule Lake until it overflowed back into the river above another narrow reef at Keno (CITE).

This caused a minimal increase in flows below Keno during the storm event. When the Tule Lake Region filled with water the river flowed backwards back up to the location of JC Boyle towards the end or after the storm event. This water recycled through this region in circular motion as the water slowly increased below Keno. As the flows began

to increase from Keno the creeks below this area would start to recede. As flows from Keno began to receded, the spring snow melt would begin and the creeks below this area would once again rise while flows from keno would be maintained. Ground water flows from wetland recharge helped to maintain spring fed flows throughout the summer months.

Karuk Ceremonies relating to fishery management began during the spring peak. This natural balance in flow regime peaked during the spring influx of salmon and the out-migration of adult steelhead and juvenile salmoids in April or early May. This flow regime allowed for the passage of salmon above the current location of the Klamath Dams and spring salmon were allowed to pass undisturbed through the Lower and Middle Klamath Sub-Basins during this time (Hamilton et. Al. 2005).

Since European contact, water quality conditions have been drastically impaired as witnessed by the decline of fisheries resources. These changes are due to draining wetlands, building dams, agricultural runoff and land conversions, water diversions, fire suppression, nontraditional forest management practices, mining, and road building.

Current:

Current water quality conditions flowing into Karuk Aboriginal Territory do not meet the Karuk Tribe's interim water quality standards for several parameters in the mainstem Klamath River. The most commonly monitored of are temperature and dissolved oxygen. When these levels are not met, they may become stressful and potentially lethal to Tribal Trust Fish Species. Also, flows that are regulated by upstream users are frequently not adequate to allow natural physiological processes to occur in the river. This may increase frequency of disease, increase water temperatures, and limit the river's ability to clean itself of excessive nutrients.

Drastic increases and decreases in water release from the dams cause stranding of juvenile fish in side pools disconnected from the mainstem Klamath. Extremely low releases in the summer force fish into minimal cold water refugia areas until the first fall rains. Salmon in this watershed that were once abundant in this system throughout the summer are now reduced to a minimal spring run and a late fall run as conditions are currently inadequate to support the life cycles of these fish.

Future Desired Conditions:

Increased water quality and quantity in the Klamath River basin and particularly in the Karuk Aboriginal Territory is desired. Increasing these conditions will enhance fisheries, ceremonies, and subsistence activities, as well as every day activities such as recreation and the general health and wellbeing of all people living on the river.

To increase water quality and quantity, management practices should be adjusted. For example, to increase stream shade, large woody debris recruitment, refugial capacity, and summer base flows, it would be best to integrate Karuk Cultural Environmental

Management Practices. This management was successful for thousands of years and could help return the landscape to a healthier condition.

Flow management and water conservation needs to be incorporated so that flows mimicking natural hydrologic function are reinstated throughout the Klamath River basin. This will encourage healthy populations of Tribal Trust Fish Species and allow for natural processes in the river to enhance water quality.

Other water quality improvement actions that should be addressed are the reduction of roads, dam removal, wetland restoration, natural fire regime restoration, and other watershed restoration activities. This will balance sediment and nutrient input into the streams while allowing fish passage and maintaining adequate base flows which will enhance fishery habitat, water quality and quantity conditions.

Wildlife:

The Karuk Tribe currently has no official Wildlife Program. There is critical need to have a wildlife biologist position to serve as a wildlife program coordinator. This position would be responsible for achieving the research and surveys needed in order to comply with the NEPA process when planning watershed scale restoration and species conservation activities. Compilation of Biological Opinions and conveyance and documentation of important life cycle information for various species is needed when planning and monitoring projects designed to achieve multiple resource objectives.

Resource concerns:

The Karuk culture relies upon various wildlife species as food, medicine, materials, and ceremonial regalia. Many wildlife species once historically abundant are now rare, threatened, endangered, and extinct or have experienced degradation of their population levels and correlating habitats (Noss et. Al 1999).

Of greatest concern in terrestrial environments are the management and population viability of elk and deer and the restoration of habitats needed to support these animals. Also important is the reintroduction of eliminated or extirpated species. Habitats that support the diverse multitude of culturally significant wildlife species are dependant upon fire and fire induced habitat changes at the landscape level. Elk, deer and other foraging wildlife help to maintain vegetation re-growth in between fire events. In turn, these fire events help to maintain viable populations of foraging wildlife.

The Karuk Tribe believes that the lack of landscape level management of wildlife habitat through cultural burning practices and natural ignitions is what threatens most wildlife species. Natural wildland fire events and free practice of low intensity cultural burning is needed to restore the composition, structure, function, and productivity of wildlife habitat necessary to increase the distribution, and abundance of wildlife species populations.

Goals:

Protect wildlife and correlating habitats from further degradation, caused by post contact management practices. Promote sound management practices based on Traditional Ecological Knowledge and the best of Western Science. Enhance wildlife habitat and population viability. Restore the interconnectivity of correlating habitat types and traditional eco-cultural maintenance schedules.

Objectives:

Coordinate wildlife species habitat management and population monitoring with Tribal Federal, State, and County, governments, non-governmental organizations, and local community groups. Manage wildlife through forests, shrub, and grassland habitat restoration activities utilizing hand and mechanical treatments in conjunction with prescribed fire. Focus restoration activities on culturally significant forest, shrub, and grassland habitats through landscape level planning to support holistic ecosystem management (Hillman and Salter 1997). Re-establish inter-connectivity between various habitat types across the landscape to foster gene flow and dispersal of wildlife necessary to sustain viable wildlife populations. Where appropriate, manage for single/indicator species in an effort to prevent further habitat loss, degradation, endangerment, local extinctions, or allow for reintroductions.

Historical:

The Karuk historically managed wildlife habitat and populations through the judicious use of fire and harvesting practices. Central to Karuk wildlife management philosophy, practices employed facilitated and sustained productive wildlife habitat and protected species during vulnerable life stages. The Karuk belief system charges humans with the responsibility to manage and care for wildlife in a reciprocal and respectful manner.

Historically, many culturally significant wildlife species primarily used for food, materials, tools and ceremonies had special laws or rules governing the harvesting and utilization of those species. Since the suppression of Karuk traditional management, regulation and harvesting practices, wildlife habitat and populations have been severely degraded to the point of local extinctions of some species.

Mining, over-hunting, fire suppression, timber harvesting, road building, urbanization and other Federal State and County resource management objectives have further degraded wildlife habitat populations. Species such as grizzly bear, wolves, condor, elk, porcupines and other mega fauna requiring large tracks of diverse habitat have gone extinct or in many cases have been locally extirpated.

Current:

Past and current land management activities have facilitated a current condition of fragmented wildlife habitat and threatened wildlife population viability (Noss et. Al 1999, Noss 2000). Extensive road networks, reduced frequency and extent of low to moderate landscape level fire intensities and poor regeneration of mature/old growth fire resilient

forest structure, composition, function and ecological processes have an impact on wildlife.

Roads impact wildlife dispersal routes, core reproductive and rearing habitats, and increase negative human-wildlife interactions. Reduction in the frequency and extent of low to moderate intensity fires across the landscape, particularly at low to mid elevation areas has resulted in densification of forests. Reduced surface water (springs and creeks) due to increases in vegetation water use, and post fire induced productivity resulting in the loss of diverse habitats can be attributed to these past management practices.

Generally, grasslands, oak and pine dominated forests habitats have been reduced. Homogenization of forests types has resulted in lower wildlife forage quality (feeding), and smaller breeding and rearing areas. Ungulate populations, primarily black-tail deer have declined, and Roosevelt Elk had to be re-introduced. Neo-tropical/migratory bird populations have decreased. Fur bearers, such as, fishers, pine-marten, ring tail cat, fox, mink, river otter, porcupine and beaver have all declined (Noss et. Al 1999).

The Karuk Tribe is currently interested in establishing a wildlife program with qualified staff to survey, monitor, analyze, plan, prioritize and facilitate the restoration of key fire dependant wildlife habitats and extirpated species re-introduction.

Future Desired Conditions:

The Karuk Tribe desires to regain the rightful entitlement to manage and restore wildlife habitat and populations and harvest culturally significant wildlife species. Restoration of traditional management practices with the use of fuels reduction, prescribe fire and wildland fire use will significantly improve wildlife habitat and correlating population densities.

These practices can restore fire adapted, dependant, and resilient habitats of grasslands, oak and pine forests, selected riparian zones, mixed conifer/hardwood forests, and high elevation meadows. Traditional human interacted natural disturbance regimes will increase the productivity and diversity of grassland and forest habitats through the use of landscape fire planning, implementation and appropriate management response.

Restored habitat and species composition will increase production and population viability which in turn will assist in the maintenance of restored landscapes and help reduce the threat of uncharacteristically intense wildland fires.

Collaborative Framework:

The collaborative framework needed to appropriately plan and implement watershed scale restoration priorities, as well as maintaining these treated areas, will require collective vision and long term dedication. The National Fire Plan calls for local planning and implementation to handle local problems. The five documents that comprise the National Fire Plan should help to focus the collective vision, which will benefit all aspects of ecological stability through restored fire adapted ecosystems.

This leaves successful collaboration reliant on long term dedication and agreement between planning partners. The Karuk Tribe believes that in order to maintain long term effectiveness there is a need to incorporate a diversely unified approach involving Tribes, agencies, local business, non-profit organizations, community groups and local citizens.

This approach can be formulated in a manner consistent with the Karuk Environmental Management Practices Demonstration Area Concept Paper, developed by the Karuk Tribe and USDA Forest Service Six Rivers National Forest. The Karuk Tribe believes that in formulating such structure into a true Interagency/Tribal Partnership between all parties claiming concurrent jurisdictions over lands or resources would be the most effective in ensuring long term dedication to collaboration and participation.

"This commitment by the Forest Service and the Karuk Tribe extends beyond our standard governmental relationships to one of a dynamic interactive partnership that seeks to meet cultural, spiritual, and environmental needs of the Karuk and other local communities by utilizing traditional ecological knowledge as a base for decision-making in the Karuk Environmental Management Practices Demonstration Area." (KEMPDA 2005)

The Karuk Tribe believes that looking at the ecological restoration needs at the appropriate scale will help to localize prioritization and identification of multiple resource objectives, while ensuring integration of the local knowledge base. Numerous field trips and meetings with community groups, local citizens, and interested participants will help in the transference of understanding between interested parties, managers and the implementation workforce.

It should be understood that such partnerships need to include Interagency/Tribal fire crews as a significant workforce in many aspects of stewardship based restoration efforts. Other efforts should occur as co-administered (Agency/Tribal) contracts or agreements for other specialty work, while providing a local boost for small rural businesses and provide supply for larger industry. This will increase accountability and value of federally funded fire crews while restoration byproducts would retain more value to reduce the costs associated with additional restoration stewardship work.

Adoption of Interagency/Tribal adaptive co-management authority across jurisdictional boundaries is the preferred method of managerial operations within the Karuk Aboriginal Territory. However, if this operational infrastructure cannot be developed and accepted as mutually beneficial to all involved parties, the Tribe may choose to implement other means to achieve recognition of jurisdictional authority and/or managerial responsibility in the interest of meeting the intent of this plan.

Prioritization Framework:

Prioritization should occur on differing levels and geographic scales. The first geographic scale would be the Karuk Aboriginal Territory. With the first priority

accounting for the protection of life, restoration projects in the form of fuels reductions will be needed around private residences and access/egress routes across the entire aboriginal landscape. Mid-slope properties should carry a higher priority than those on the valley floor as these areas are more prone to high intensity fire, have a higher percentage of home loss from catastrophic fire events, and longer emergency response times.

The next level of prioritization would be at the Hydrologic Unit Compartment most representative of local firesheds. This is where ID Team members should be accounting for things like fire histories, wildlife populations, anadromous fisheries, management indicator species, habitat connectivity, impaired wetlands, cold water refugia, fire regime, condition class, vegetation type, slope, aspect, elevation range, as well as cultural and recreational uses/values. Areas within this scale would then be broken down into manageable programmatic implementation areas and prioritized based on potential for achieving multiple resource objectives while restoring natural disturbance regimes.

The third level of prioritization would be based on programmatic implementation timing having to do with weather, elevation, cultural treatment windows, limited operating periods, and maintenance schedules. This level is more of a logistical prioritization utilized both pre and post planning. For example, areas with NEPA coverage that are nearing expiration could become an increased implementation priority in the interest of ensuring planning efforts and associated costs are accountable.

Definitions

Karuk Aboriginal Territory

All Federal, State and Private lands within the external boundary of the Karuk Aboriginal Territory (see attachment A).

Condition Class

The landscape condition classification that reflects the range of alteration in fire return intervals from the pre-contact fire regime.

Cultural Environmental Management Practices

Practices employed by indigenous peoples often mimicking natural disturbance processes in the management and utilization of natural resources.

Fire Return Interval

The scale in time which fire occurs (with or without human influence) in a specific landscape condition, vegetation type, elevation range, slope, or aspect.

Fireshed

Indian Country (EPA's definition)

Natural Fire Regime

Definitive ranges of fire return intervals, burn duration, and intensity reflective of both lightning and cultural ignitions upon a given landscape.

Pre-Contact

The span of time prior to European contact and/or influence upon the lands and people within the Karuk Aboriginal Territory.

Traditional Ecological Knowledge

A cumulative body of knowledge, practice, and belief, evolving by adaptive processes and handed down through generations by cultural transmission, about the relationship of

living beings (including humans) with one another and with the environment…it is both cumulative and dynamic, building on experience and adapting to changes.

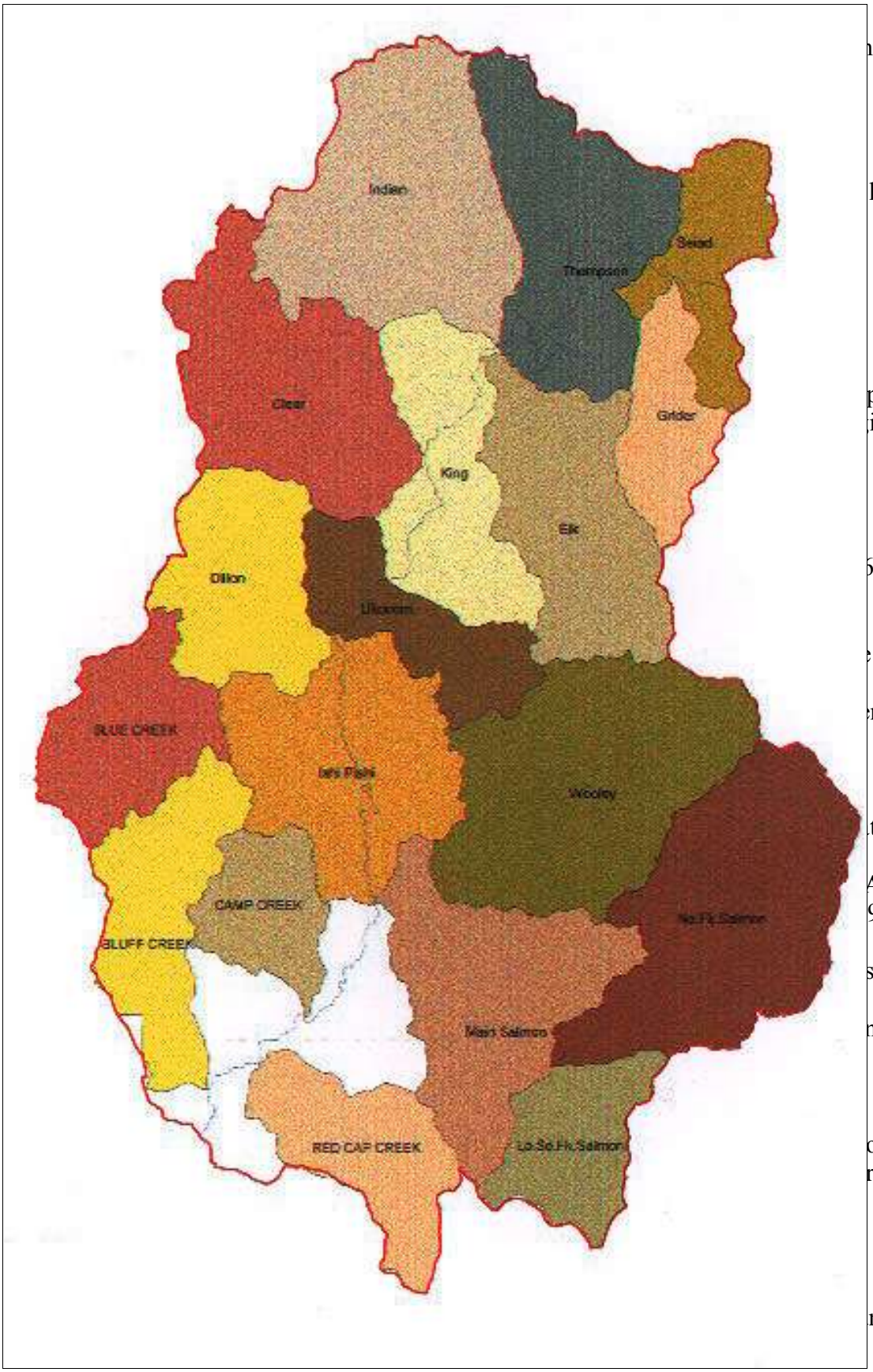
Tribal Trust Resources

All cultural, or natural, resources traditionally utilized and/or managed which have been influenced by European or societal induced change from the traditional dynamic, triggering a governmental fiduciary trust responsibility to restore and/or maintain pre-existing cultural integrity.

Uncharacteristically Intense Wildfire

The intensity of fire exceeding levels naturally occurring in landscapes characteristic of a pre-contact condition class.


KARUK ANCESTRAL TERRITORY
Ancestral Territory
National Forests
Klamath National Forest
Six Rivers National Forest
Del Norte
Siskiyou
Shasta
Trinity
Humboldt


Indian
Thompson
Sand
Clear
Grider
King
Elk
Dillon
Ulloom
BLUE CREEK
Ies Flats
Wooley
CAMP CREEK
BLUFF CREEK
No Fk Salmon
West Salmon
RED CAP CREEK
Lo So Fk Salmon

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Appendix:

Appendix __: Criteria and Indicators