

**American Indian Writers Committee
of the
Consolidated Group of Tribes and Organizations**

Tribal Narrative for the Nevada Test Site

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American Indian Writers Committee

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Tribal Views on Nevada Test Site: Affected Environment and Consequences

1.0 Affected Environment

1.1 Climate

CGTO knows that the climate of the region has changed over the thousands of years that the Indian people have lived in this region (See Indian Appendix for more). The NTS has only occupied this area since the early 1940s. It is important to recognize that major climatic changes have taken place since the end of the Pleistocene and shorter term climate changes such as the wet period in the 1980s and 1990s contrast with the current 10-year drought. It is important for the GTCC EIS to assess the impacts of short term and long term climatic changes because the DOE expects to safely manage these GTCC wastes for up to 10K years during which similar climate changes can be expected.

The current climate description in the GTCC EIS is specific to the present decade-long period of extended drought (a similar one occurred between 1896 and 1906) so this type of drought and the wet period between 1980s and 1990s may be a factor in siting the GTCC facility. An analysis of long term impacts based on current conditions will neither be representative of climate conditions viewed over much longer periods nor applicable to a short climate shift to much wetter conditions.

1.2 Groundwater

The CGTO knows that most dry lakes are not known to be completely dry. An example is Soda Lake near Barstow, California. The Mohave River flows into this dry lake and most of the year it looks dry but it actually flows underground. Building berms on dry lake beds to offset water and runoff doesn't sound like a good idea to the Indian way of thinking. As one CGTO member added, to Indian people "water is life. Our water has healing powers" (NRC 2009a). So why build a GTCC site on and use this playa when the odds of radiation seem feasible? The Indian people who visited this site recommend not to bother Frenchmen Playa. It is only one of two in the immediate region and has special meanings. There should be a more descriptive study to fully understand the impacts. More time is needed, also for Indians to revisit this site. Although some people continue to view Frenchman playa as a wasteland, the CGTO knows it is not. Further ethnographic studies are needed.

1.3 Ecology

The CGTO knows that this site (in Area 5) is an ancient playa, surrounded by mountain ranges (See Indian Appendix for more). The runoff from these ranges serves to maintain the healthy desert floor. Animals frequent this area, there are numerous animals' trails, and these play a significant part in the history of the locality and of the Indian lifestyles. Our ancestors knew that the Creator always provided for them and this site is one of their favorite places to hunt and trap rabbits. We have special leaders that organized large rabbit hunts. Many people participated so this place would be occupied at times by all kinds of our people. Rabbits provided good eating,

bones for tool-making, warm blankets, and even games. Indian people refrained from eating coyote, wolves, and birds but these contribute to our stories which tell us how to behave and why we are here. We have many stories and songs that include animals and birds who have human-like antics. From these antics Indian people learn the life lessons to build character to become better persons. So animals and the places where they live contribute to our history and culture.

This culturally central place was used by and important to Indian people from our agricultural and horticultural communities located to the north – near Reese River Valley and Duckwater, to the south – near Ash Meadows, to the southeast – near Indian Springs and Corn Creek, to the east – near the Pahrnagat-Muddy River, and west – near the Oasis Valley. It was also used by people from our agricultural and horticultural communities to the far west in Owens Valley, to the far south near Cottonwood Island and Palo Verde Valley on the Colorado River, to the far southwest at Twenty Nine Palms, to the far east along the Virgin River, Santa Clara River, and Kanab Creeks, to the far north along the Humbolt River and Ruby Valley.

Plants

The CGTO knows based on previous DOE-sponsored ethnobotany studies that there are at least 364 Indian use plants on the NTS (see Appendix G). Indian people visiting the proposed location of the GTCC facility identified the following traditional use plants: (1) Indian Tea, (2) White Sage or Winter Fat, (3) Indian Rice Grass, (4) Creosote, (5) Wolfberries, (6) Four O'clock, (7) Spiny Hop Sage, (8) Joshua Tree, (9) Daises, (10) Desert Trumpet, (11) Cholla, (12) Globe Mallow, (13) Fuzzy Sage, (14) Tortoise Food plant, (15) Sacred Datura, (16) Wheat Grass, and (17) Lichen. Other plants were present but not identified due to the late season and the dry condition of the plants.

Plants are still used for medicine, food, basketry, tools, homes, clothing, fire, and ceremony – both social and healing. The characteristics of the plants at the proposed GTCC area are smaller and thinner than in other desert areas where it is wetter. Indian people from elsewhere traveled to this area to gather specific plants because they have stronger characteristics when they grow in dry places. The sage is used for spiritual ceremonies, smudging, and medicine. The Indian rice grass and wheat grass are used for breads and puddings. Joshua trees and Yucca plants are important for hair dye, basketry, foot ware, and rope. Datura is used for hallucinogenic effects during which alternative places can be visited by medicine men. Datura also goes itself to disturbed areas and heals them. The globe mallow had traditional medicine uses, but in recent times is also used for curing European contagious diseases.

Animals/Insects

The CGTO knows based on previous DOE-sponsored ethnofauna studies that there are at least 170 Indian use animals on the NTS (see Appendix G). Indian people visiting the proposed location of the GTCC facility identified the following traditional use animals: (1) Jack Rabbits, (2) Whiptail Lizards, (3) Antelope, (4) Tortoise, (5) Kangaroo Rats, (6) Horned Toad, (7) Rock Wrens, (8) Ravens, (9) Grasshoppers, and (10) Stink Bugs. Other animals (such as snakes, bats, and owls) were perceived to be present but not observed because they primarily emerge at night.

All animals and insects were and are culturally important and the relationships between them, the Earth, and Indian people are represented by the respectful roles they play in the stories of our life

then and now. The GRCC valley is where a spiritual journey occurred. It involved Wolf (*Tavats* in Southern Paiute, *Bia esha* in Western Shoshone, *Wi gi no ki* in Owens Valley Paiute) and Coyote (*Sinav* in Southern Paiute, *Duhvo esha* in Western Shoshone, *Esha* in Owens Valley Paiute) and is considered a Creation Story. Only parts of this can be presented here. When Wolf and Coyote had a battle over who was more powerful, Coyote killed Wolf and felt glorious. Everyone asked Coyote what happened to his brother Wolf. Coyote felt extremely guilty and tried to run and hide but to no avail. Meanwhile, the Creator took Wolf and made him into a beautiful Rainbow (*Paro wa tsu wu nutuvi* in Southern Paiute, *Oh ah podo* in Western Shoshone, *Paduguna* in Owens Valley Paiute). When Coyote saw this special privilege he cried to the Creator in remorse and he too wanted to be a Rainbow. Because Coyote was bad, the Creator put Coyote as a fine white mist at the bottom of the Rainbow's arch. This story and the spiritual trails discussed in the full version are connected to the Spring Mountains and the large sacred cave in the Pintwater Mountains as well as to lands now called the Nevada Test Site. This area is the home place of Wolf who is still present and watches over the area and us.

Minerals

The CGTO knows based on previous DOE-sponsored cultural studies that there are many minerals on the NTS (no complete list available). Indian people visiting the proposed GTCC site identified the following traditional use minerals: (1) Obsidian, (2) chalcedony, (3) Yellow Chert or Jasper, (4) Black Chert, (5) Pumice, (6) Quartz Crystal, and (7) Rhyolite Tuff. Other minerals were perceived to be present but not observed because of the limited time and search area.

All minerals are culturally important and have significant roles in many aspects of Indian life. For example, the Chalcedony on the proposed GTCC site would have made an attractive offering which would be acquired here by a ceremonial traveler and then left at the vision quest or medicine site located to the north on top of a volcano like Scrugham Peak. Returning ceremonial travelers would also bring offerings back to where they had acquired offerings, thus the Yellow Chert or Jasper (observed on the GTCC site) which outcrops about 70 miles to the north would be gathered there and returned to the Chalcedony site as an offering.

Playas

The CGTO knows, based on cultural studies funded by the DOE on the NTS and playa-specific studies funded by Nellis Air Force Test and Training Range (Henderson 2008), that playas occupy a special place in Indian culture. Playas are often viewed as empty and meaningless places by western scientists, but to Indian people playas have a role and often contain special resources that occur no where else. The following text was prepared by the Indian people who visited the proposed GTCC site.

Is a playa a wasteland? According to Indian elders playas were used in traveling or moving to places where work, hunting, pine cutting or gathering of other important foods and medicine could be done. One elder remembers crossing over dry lake beds and traveling around but near the edges and they discussed how provisions were left there and at nearby springs by previous travelers at camping spots. Indian people left caches in playa areas for people who crossed valleys when water and food was scarce. Frenchmen Playa is such a place. Indian people took advantage of traveling through this playa as mountains completely surround this area. The CGTO knows that most dry lakes are not known to be completely dry. An example is Soda Lake

near Barstow, California. The Mohave River flows into this dry lake and most of the year it looks dry but it actually flows underground. Building berms on dry lake beds to offset water and runoff doesn't sound like a good idea to the Indian way of thinking. As one CGTO member added, to Indian people "water is life. Our water has healing powers" (NRC 2009a). So why build a GTCC site on and use this playa when the odds of radiation seem feasible? The Indian people who visited this site recommend not to bother Frenchmen Playa. It is only one of two in the immediate region and has special meanings. There should be a more descriptive study to fully understand the impacts. More time is needed, also for Indians to revisit this site. Although some people continue to view Frenchman playa as a wasteland, the CGTO knows it is not. Further ethnographic studies are needed.

1.4 Environmental Justice

DOE has recognized the need to address environmental justice concerns of the CGTO based on disproportionately high and adverse impacts to their member tribes from DOE NTS activities. In 1996, the CGTO expressed concerns relating to environmental justice that included (1) damage to Holy Lands, (2) negative health impacts, and (3) lack of access to traditional places that contributes to breakdowns in cultural transmission. In the 2002 NTS SA, NNSA/NSO concluded that with the selection of the Preferred Alternative, the CGTO would be impacted at a disproportionately high and adverse level consequently creating an environmental justice issue. Since 2002, NNSA/NSO has supported a few ethnographic studies involving the CGTO and culturally important places including in 2004, when NNSA/NSO arranged for tribal representatives to conduct evening ceremonies at Water Bottle Canyon. While the opportunity for the evening ceremony was a significant accommodation, disproportionately high and adverse impacts from DOE NTS activities continue to affect American Indians. The three environmental justice issues noted by the CGTO need to be addressed.

1.5 Radiation

The CGTO knows that radiation can be and is viewed from both a western science and a Native American perspective (See Indian Appendix for more). These alternative and competing perspectives are key for understanding the cultural foundations of American Indian responses to the mining, processing, use, transportation, and disposal of radioactive materials. At some level of analysis from an Indian perspective, all radioactive waste is basically the same problem to Indian people. Subtle differences in classification from a western science perspective of radioactive waste only mask and do not significantly modify the basic cultural problems of radioactive waste for Indian people and their traditional lands.

The Angry Rock is a concept used by Indian people, involved in DOE funded radioactive waste transportation and disposal studies, to quickly summarize the complex cultural problems associated with what happened to this known mineral when it was improperly taken and used by non-Indians. The notion of an Angry Rock is premised on the belief that all of the earth is alive, sentient, speaks Indian, and has agency. When the elements of the earth are approached with respect and asked for the permission before being used they share their power with humans. The reverse occurs when they are taken without permission – they become angry withhold their power and often using it against humans. Thus uranium is an Angry Rock. Uranium has been

known and carefully used by spiritual specialists and medicine persons for thousands of years (Lindsay et al. 1968). The following American Indian elder quote from a DOE funded report (Austin 1998) begins to explain this perspective:

We are the only ones who can talk to these things. If we do not make sure that we talk to those things, then they are going to give us more bad harm, because it is already happening throughout the country. Those are the reasons why the Indian people say ... like uranium, for one, uranium was here since the beginning of this Earth, when it was here we knew uranium at one time. And still it is used, but then they got a hold of it and made something else out of it. Now it is a man made thing, and today it accumulates waste from nuclear power plants, it accumulates more, it has its own life. Radiation has said to us at one time "If you use me make sure you tell me before you use me why you are going to use me and what for. " And we never said anything to that uranium at all, and we put something else in there with it, which shouldn't belong with it. It gives it more power to eliminate the life, of all living things on this planet of ours. Those are the reasons, why the Indian people always say, and I know because I have been there. The rocks have a voice...

Although from a Western science perspective radiation can be isolated and contained by conventional techniques, the Angry Rock has the power to move and cannot be contained by barriers. Indian people who have dealt with the Angry Rock for thousands of years note that there are traditional ways to deal with uranium, the natural rock, if used by trained Indian specialists, but these may or may not work with the Angry Rock of modern radiation waste.

Songs ... we are the ones who should be talking to those things. Radiation is going to take all of our lives; it is continuously moving over the land. The land don't want it, nobody wants it. And today, we are doing a bad thing by using radiation on each other. Radiation is something that should not be used to kill animal life...

Another elder noted:

And can it be contained? As it's transformed it can be, I think it can be contained physically but not spiritually, and again I think spiritually as it's been altered because it's in that energy field because it's been altered. The spirit, that's where it can do its harm in an altered form. It doesn't do any good to anybody. And there you're just in the wrong place in the wrong time, it does influence plants and animals, minerals and air, the spirit of any area it passes through. The reason somebody is sick. I don't think it's necessary to talk about how each one of these is influenced, it just is.

Another elder noted:

As far as the transportation of waste there's a lot of unknowns and we don't know what the consequences are. We know there are many sicknesses that come out from people that have been contaminated by nuclear waste and as far as Indian people go, we show respect to the land, show respect to other people, for the animals, the plants, the rocks. The power of the rock – Just looking at Chemehuevi Mountain, it's a very spiritual mountain from this perspective right here. When I look out towards the mountains and I don't just see a mountain, I see a place

of power, I see a place where I can go and meditate and speak with the Creator directly and ask for prayers and blessings for people directly. Just like anything else, you have to give prayers all the time because the creator is here to watch and protect over us. I feel that we wouldn't have come this far if he wasn't here to watch over us and we are here to pray and we are here to protect the other resources.

Another elder said:

I can envision the animals standing back once it goes through for the first time and they recognize that there's a danger that they would move away because of fear. That they would no longer be there and that there's something bad coming down the road and they disperse and move away into different corridors. Kind of like a dust storm, they disperse and move further and further away. I see it from the animals' standpoint, they're a lot smarter than us and they've been doing this for longer than us and their senses are more keen and I think the animals would get back and it would create dead zones throughout the country. Through these corridors or transportation routes of course at the site there will be those that are curious who want to go see.

Another elder said:

I don't know what you would do with this rock if it's angry and this is its way of rebelling, getting back. I think as a Native American I would backstep and ask for forgiveness. Sometimes forgiving is not very easy because there's sacrifices we have to make and there's consequences ... I don't think it can be done as a group, it's an individual thing and each one of us has to go back and ... ask for forgiveness for what has taken place. It's not just only that I think it's going to be more complicated than going out into the mountains and saying, "hey, I'm sorry, I won't do this, I won't do that and I won't bother you anymore. There's a lot of other things that need to be forgiven. The rock is the most precious and it's the largest and it's the one that needs to be forgiven the most. There's a lot of small forgiveness that have to be given before the large rock. I think it's a stepping stone... the rocks are angry, yes, they're striking out saying "don't do this to me, don't touch me, don't let this happen. " In a sense you look at it from a spirituality standpoint, it's the spirits of Mother Earth telling us don't mess with Mother Earth. It remains a matter of debate as to whether traditional means of placating powerful rock-based forces can be used to control or placate radioactive waste. Western scientists have created a problem for Indian people that, despite being very critical to their future, is not easily resolved.

1.6 Cultural Resources

The CGTO knows that American Indian cultural resources include all physical, artifactual, and spiritual aspects of the NTS. The CGTO has established that formal studies of these aspects of the land should be conducted to identify, assess, mitigate, and manage these resources. These resources should be studied with members of the CGTO recommended for the study. Such studies are termed: (1) Ethnoarchaeology, (2) Ethnobotany, (3) Ethnozoology, (4) Storied Rocks, (5) Traditional Cultural Properties, (6) Ethnogeography, and (7) Cultural Landscapes (Final Environmental Impact Statement for the Nevada Test Site and Off-site locations in the State of Nevada Volume 1, Appendix G).

The CGTO knows that many of these cultural resources are directly present on the GTCC proposed site, in the Indian Defined Area of Potential Effect, and immediate region surrounding the GTCC site. The Indian people who visited the GTCC site note that their time on site was insufficient to fully identify, analyze, and evaluate resource that may be present. They recommend one or more of the kinds of resource studies identified above be conducted. Based on their site visit they do know that the area contains important cultural resources including plants, animals, minerals, trails, and portions of cultural landscapes (see Indian Appendix of this EIS).

Cultural Artifacts and Features

The CGTO knows based on previous DOE-sponsored cultural studies that there are many cultural artifacts and features on the NTS (American Indian Transportation Committee, Stoffle, and Toupal 1998; American Indian Transportation Committee, et al. 1999; American Indian Writers Subgroup, CGTO 1996; Arnold et al. 1997; Arnold et al.1998; Arnold et al. 1999; Austin 1998; Stoffle et al. 2001a; Stoffle et al. 2001b; Stoffle, Evans, Harshbarger 1989; Stoffle, Evans, Halmo 1988; Stoffle et al. 1989; Stofle, Halmo, and Dufort 1994; Stoffle, Olmsted, and Evans 1988; Stoffle, Zedeño, and Carroll 2000; United States Department of Energy (USDOE) 1996; USDOE, National Nuclear Security Administration 2002; USDOE, National Nuclear Security Administration 2008; Henderson 2008). Indian people visiting the proposed GTCC site identified the following traditional cultural artifacts and features: (1) Chert Flakes, (2) Rock Alignments, (3) Boulder Grinding Indentation or metate (*Mata* in Owens Valley, *Doso* in Western Shoshone, *Mada* in Southern Paiute), (4) Hand Grinding Stone or mano (*Paha* or *Tusu* in Owens Valley, *Botoh* in Western Shoshone, *Mohum* in Southern Paiute), (5) Volcanoes, (6) Trails, and (7) Chalcedony, and (8) Yellow Jasper.

Artifacts are the evident signs of our ancestors on this land. They are proof that we were here for thousands of years. We were told by our elders never to move artifacts or take them from their place. This is their home because they were left there for us to see and understand the past. We never remove them because they still belong to the ancestors who put them there for us and still watch over them today. Artifacts come from parts of the living earth and are still alive with a right to remain where they were placed. Whether or not there is evidence of being modified, the volcanoes, stones, rocks and trails that we incorporated into our lives are artifacts. These were visited for ceremony, chosen and moved as offerings, and traveled on our journeys and thus were a part of our life, are artifacts of our ancestors that we respect, and are there for future generations.

1.7 Visual Resources

Views are important cultural resources that contribute to the location and performance of American Indian ceremonialism. Views combine with other cultural resources to produce special places where power is sought for medicine and other types of ceremonies. Views can be of any landscape, but more central viewsapes are experienced from high places, which are often the tops of mountains and the edges of mesas. Indian viewsapes tend to be panoramic and are special when they contain highly diverse topography. The viewscape panorama is further enhanced by the presence of volcanic cones and lava flows. Viewsapes are tied with songscapes and storyscapes, especially when the vantage point has a panorama composed of multiple locations from either song or story. Key to the Indian experience of viewsapes is isolation.

Successful performance of ceremonies (whether by individuals or groups) is often commemorated by the building of rock cairns and by storied rocks and paintings. The CGTO tribes recognize the cultural significance of viewscapes and have identified a number of these on the NTS. The Timber Mountain Caldera contains a number of significant points with different panoramas, including Scrugham Peak-Buckboard Mesa and the Shoshone Mountain massif.

1.8 Waste Management

The CGTO requests an analysis of the hydrological and ecological impacts of the existing water diversion dike of the current Radioactive Waste Management Complex in Area 5. The DOE recognizes that this is a very flood prone area, with major flooding episodes occurring about every 23 years. Indian people visiting this site observed that even though the current dike has been built recently and thus not experienced a 23-year flood, it has diverted and consolidated sufficient runoff that a small arroyo has been established. The Indian people visiting this site believe that the existing dike has unnaturally stressed down-slope plants and animals who now do not receive normal sheet runoff. The Indian people visiting the site believe that by concentrating the runoff, the dike has reduced the amount of water absorbed during normal sheet runoff because the consolidated runoff moves more quickly and only flows in the new and developing eroded arroyo. It is believed by the Indian people visiting the site that were a GTCC facility to be established east of the current RWMC then the dike would necessarily have to be extended causing an even greater runoff shadow and an even greater developing arroyo. The desert tortoise in the area will have to move out of this larger runoff shadow and may be concentrated in the area of Frenchmen Playa. Moving their living areas towards the playa will expose them to higher levels of radioactivity. The Indian people visiting the site believe that these current and potential impacts should be analyzed, monitored by Indian people, and reported back to the CGTO at the next annual meeting.

1.9 Site Description

The CGTO knows that the southern bajada (alluvial fan) of French Peak and associated hills to the east combine to periodically cause massive runoffs which flow rapidly towards Frenchman Playa making it a seasonal shallow lake. Frenchman Playa has a 140 square-mile watershed that could impact the GTCC site as it potentially does the current RWMS (Raytheon Services 1993). Especially considered in these Indian comments are runoffs from the north of the proposed GTCC storage area. This watershed involves 13.6 square miles and directly impacts the current RWMS. This runoff from this area is normally sheetflow, but every 23 years or so a major flood occurs. This threat has resulted in the RWMS building a large diversion dike and trench to protect the current Radioactive Waste Management Complex. The Raytheon study indicates that the southwest corner of the RWMS is located in the 100-year flood hazard zone, but the entire northern alluvial fan brings runoff directly into the immediate area.

1.10 Climate and Air Quality

One performance objective in selecting a preferred site is to protect individuals and communities who might occupy the disposal site after active and passive controls are no longer present. These

individuals are to be protected from exposure to GTCC radiation while they engage in normal activities such as agriculture, dwelling construction, food acquisition, and ceremony. The CGTO believes that a wetter climate will raise the water table up to or over the GTCC waste site. Nearby wetland plants and animals would absorb radiation and then expose local people. Drinking water from these wetlands will also result in exposure. Indian people visiting the site believe their descendants will live near and use these wetlands as their ancestors did thousands of years ago.

The climatic effects of both wet and dry periods should be analyzed and incorporated in the GTCC site assessment.

2.0 Environmental Consequences

2.1 Radiation

Indian people have raised in past radioactive waste disposal and transportation studies a range of questions regarding how to protect themselves and their natural resources from exposure to what they call the Angry Rock (See Indian Appendix for more). The analysis of GTCC waste should address directly these potential impacts and suggest ways to either avoid or mitigate them. The potential impacts to Indian people and their life are significant including potentially blocking the path to the afterlife (Stoffle and Arnold 2003).

2.2 Cultural Resources

The CGTO knows that there are physical, spiritual, and archaeological elements associated with the entire Frenchman Flat valley. Impacts to any of these elements are considered important and need to be considered during GTCC siting considerations. There are direct impacts to Indian cultural resources that have been observed by the Indian people who visited the current RWMS. Especially obvious is the construction of a water diversion dike and subsequent arroyo cutting and dewatering of areas down slope of the dike. Surface disturbance will remove medicine and food plants, impact animal habitat and concentrate certain species of animals. The Chalcedony deposits and chert offerings will be totally removed thus causing a disconnect between the Indian ancestors who used these and contemporary and future generations of Indian people. This is an act of disrespect.

2.3 Waste Management

The CGTO requests an analysis of the hydrological and ecological impacts of the existing water diversion dike of the current Radioactive Waste Management Complex in Area 5. The DOE recognizes that this is a very flood prone area, with major flooding episodes occurring about every 23 years. Indian people visiting this site observed that even though the current dike has been built recently and thus not experienced a 23-year flood, it has diverted and consolidated sufficient runoff that a small arroyo has been established. The Indian people visiting this site believe that the existing dike has unnaturally stressed down-slope plants and animals who now

do not receive normal sheet runoff. The Indian people visiting the site believe that by concentrating the runoff, the dike has reduced the amount of water absorbed during normal sheet runoff because the consolidated runoff moves more quickly and only flows in the new and developing eroded arroyo. It is believed by the Indian people visiting the site that were a GTCC facility to be established east of the current RWMS then the dike would necessarily have to be extended causing an even greater runoff shadow and an even greater developing arroyo. The desert tortoise in the area will have to move out of this larger runoff shadow and may be concentrated in the area of Frenchmen Playa. Moving their living areas towards the playa will expose them to higher levels of radioactivity. The Indian people visiting the site believe that these current and potential impacts should be analyzed, monitored by Indian people, and reported back to the CGTO at the next annual meeting.

2.4 Cumulative Impacts from the GTCC Action at NTS

According to the CGTO tribes, increased land disturbances associated with all forms of activities and development on the NTS could result in a decrease in access to these areas for American Indians. Limiting access could reduce the traditional use of the NTS and other areas and affect their sacred nature. Increased development at the NTS could increase the potential for greater disturbance and vandalism of American Indian cultural resources. The CGTO tribes believe (See Final Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada 1996: Appendix G) that cumulative impacts in the following areas may occur:

- *Holy land violations.* Further destruction of traditional cultural sites, making the water disappear, general treatment of the land without proper respect.
- *Cultural survival.* Decreased ability and access to perform ceremonies.
- *Environmental restoration.* Revegetation of restored lands with native species.
- *Empowerment process.* Over the past 17 years of regular consultation between the NNSA/NV and the CGTO tribes, there has been a growing co-management role for the tribes. Their recommendations have been heard and, for the most part, responded to by the NNSA/NV. Indian access to places on the NTS has increased, after an early period of access loss. Unfortunately, each new program that is added to the NTS decreases the amount of space that is available for the practice of Indian religions, ceremonies, and cultural persistence. However, having no programs also can have an impact. For example, even though the mesas are now accessible to Indians for ceremonies, the roads are not maintained because there are no projects on the mesas. This makes access to the ceremonially important areas difficult.
- *Radiation risks.* These risks began with nuclear testing. Today, the CGTO tribes perceive that the radioactive risks continue in known and unknown ways underground.

There are still ongoing risks to Indian people from storage and disposal of waste and these will continue. Finally, transportation of radioactive materials is continuing and increasing. It is not clear to the CGTO tribes that, after two American Indian studies of radioactive waste

transportation, there has been a meaningful consideration of their concerns. It is not clear to what extent further radioactive waste disposal at the proposed GTCC facility will do to increase radiation risks to the physical and spiritual dimensions of Frenchman Playa area but some assessment is possible by Indian religious leaders.

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Appendix A: Native American Responses to The GTCC Proposal on the NTS

This Greater Than Class C EIS study was funded by the Waste Management Office of the DOE and NNSA/NSO. Text was provided by the American Indian Subgroup who represents the seventeen tribes and Indian organizations that are in consultation with the NNSA/NSO regarding the Nevada Test Site (NTS) and related locations. The consulting Indian tribes and organizations are known as the Consolidated Group of Tribes and Organizations (CGTO), within which there are numerous subgroups who act in different roles such as the American Indian Writers Subgroup (AIWS). The recognized role of the AIWS and other CGTO subcommittees is to follow closely specific issues and report to the CGTO. The CGTO members then report back to their respective tribal governments or Indian organization governing boards. It is important to note that official responses to issues only come from tribal governments and governing boards.

The role of the AIWS is to review all manuscripts that involve Indian people on the NTS and to review fieldwork proposals. The AIWS is composed of a coordinator, three officially appointed members, and three alternates who were selected by the subgroup members. The members of this subcommittee are (1) Southern Paiutes – Betty Cornelius and Lalovi Miller, (2) Western Shoshones – Maurice Frank-Churchill and Jerry Charles, and (3) Owens Valley Paiutes – Gerald Kane and Danelle Gutierrez. Richard Arnold is the appointed AIWS coordinator.

AIWS Responses

The AIWS believes that the Native American responses for the current GTCC EIS should be presented together with some responses also repeated in relevant sections of the main body of the EIS. Their responses, however, are directed at different sections of this EIS and vary in terms of structure and purpose. The current American Indian text builds upon already established ideas presented in Appendix G (American Indian Writers Subgroup, CGTO 1996), the *2002 Nevada Test Site Supplement Analysis* (United States Department of Energy, National Nuclear Security Administration 2002) and the *2008 Draft Nevada Test Site Supplement Analysis* (United States Department of Energy, National Nuclear Security Administration 2008). This writing procedure reflects the ongoing interest of the CGTO in the activities and potential environmental impacts of NNSA/NSO, and emphasizes the continuity of issues established in the previous documents and again in this SA.

The following text is provided as an appendix of this GTCC EIS. This integrated essay represents the responses of the consulting tribes who have participated for almost 23 years in the NNSA/NSO American Indian Program and who refer to themselves in this consultation as the CGTO. Some portions of the following text are repeated in other sections of this report. The full analysis and text are held together in this section so that the consulting tribes and organizations who will review this document will have a holistic view of the American Indian responses. This report reflects the assessments of the AIWS, but it was technically finalized by the Bureau of Applied Research in Anthropology (BARA) team at the University of Arizona.

LAND USE (DaMiDovia “Our Land”, Ia-voovTuvipum “Our Land”)

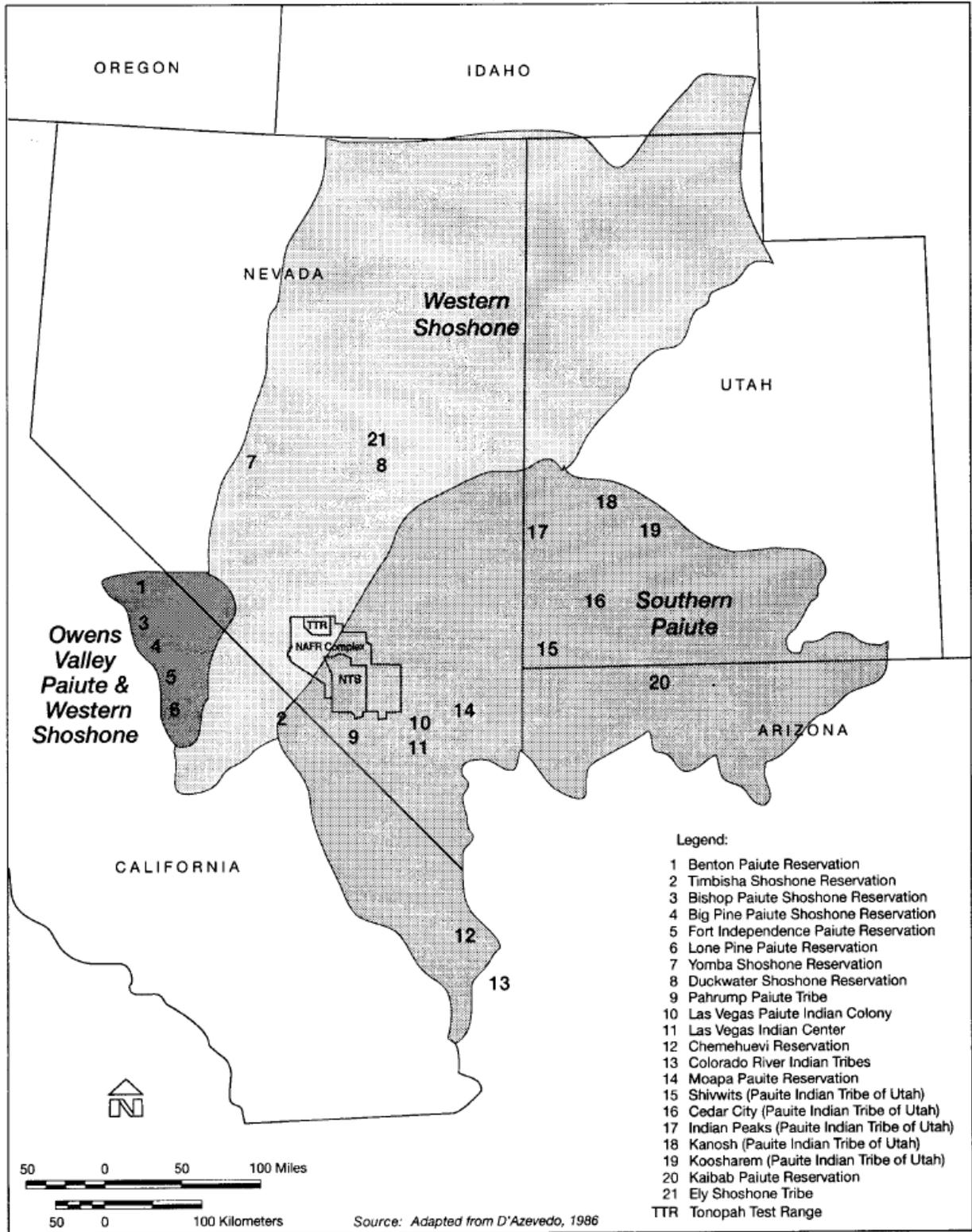


Figure A-1 American Indian Region of Influence for NTS GTCC EIS

The CGTO maintains that members of the consulting tribes have Creation based rights to protect, use, and access lands (Divia, 1 Tuvip, 2) of the NTS and immediate area. These rights were established at Creation and persist forever. During the past decade representatives of the consulting tribes have visited portions of the NTS and have identified places, Puha Paths, and cultural landscapes of traditional and contemporary cultural significance. The managers of the NTS have responded to CGTO requests that portions of these identified areas be set aside for traditional and contemporary ceremonial use. Because this is a public document the exact locations of these areas will not be revealed, however they do include a burial cave, a Native American Graves Protection and Repatriation Act (NAGPRA) reburial area, and a local Puha Path and ceremonial landscape near a large water tank (Stoffle, Evans, and Harshbarger 1989; Stoffle et al. 2001a; Stoffle et al. 2001b; Stoffle, Zedeño, and Halmo 2001; Stoffle et al. 2006). These actions by the agency are in keeping with the persistent recommendations of the CGTO that portions of their holy lands be placed under co-stewardship arrangements. In order to fulfill the holy land use expectations, the members of the consulting tribes of the CGTO recommend continuing to identify special places, Puha Paths, and landscapes and setting aside these places for unique co-stewardship and ceremonial access. For example, currently studies have begun and portions are completed regarding the identification of places, Puha Paths and cultural landscapes in the Timber Mountain Caldera (Stoffle et al. 1994a; Stoffle, Halmo, and Dufort 1994; Stoffle et al. 2001a; Stoffle et al. 2001b; Stoffle, Zedeño, and Halmo 2001; Stoffle et al. 2006). These studies are planned to continue and when completed will add a Native American cultural sensitivity component which will contribute to the currently recognized importance of this National Natural Landmark and Area of Critical Environmental concern.

Climate

CGTO knows that the climate of the region has changed over the thousands of years that the Indian people have lived in this region. The NTS has only occupied this area since the early 1940s. It is important to recognize that major climatic changes have taken place since the end of the Pleistocene and shorter term climate changes such as the wet period in the 1980s and 1990s contrast with the current 10-year meteorological drought. It is important for the GTCC EIS to assess the impacts of short term and long term climatic changes because the DOE expects to safely manage these GTCC wastes for up to 10K years during which similar climate changes can be expected.

The current climate description in the GTCC EIS is specific to the present decade-long period of extended drought (a similar one occurred between 1896 and 1906), so this type of drought and the wet period between 1980s and 1990s may be factors in siting the GTCC facility. An analysis of long term impacts based on current conditions will neither be representative of climate conditions viewed over much longer periods nor applicable to short climate shift to much wetter conditions.

The CGTO maintains that during the last decade the NTS and surrounding region has experienced a meteorological drought. Current meteorological analysis suggests that this is a 10-year duration type drought and even could be the beginning of a longer drought episode. The region has not experienced a drought with these characteristics since a decade spanning the

beginning of the 20th century. Therefore, this meteorological episode can be termed a 100-year drought. The early 20th century drought becomes an analog against which to discuss the environmental implications of the current episode (see Figure A-4).

The 100-Year Drought (Uh-na-hp dumime sogobe basa-type “A long time our Mother Earth has been dry”, Minga- na-vas-so-quip “very dry land”)

Nevada is “much below normal” to date in 2007. As of June 2007, the Palmer Z Index, which measures short term drought on a monthly scale, indicated that central Nevada, including the NTS, was in a “severe drought” condition. Data from the National Climatic Data Center shows that Nevada was ranked the driest state in the U.S. for the period of August 2006 to June 2007. This period reflects the drought trend in Nevada that has characterized the past decade (Figures A-1, A-2) (<http://www.ncdc.noaa.gov/oa/climate/research/2007/jun/st026dv00pcp200706.html>).

On a broad scale, the two previous decades (1980s and 1990s) were unusually wet with short periods of extensive droughts. The 1930s and 1950s showed the opposite trend with prolonged periods of extensive droughts and few wet periods (<http://www.ncdc.noaa.gov/oa/climate/research/2007/jun/us-drought.html>).

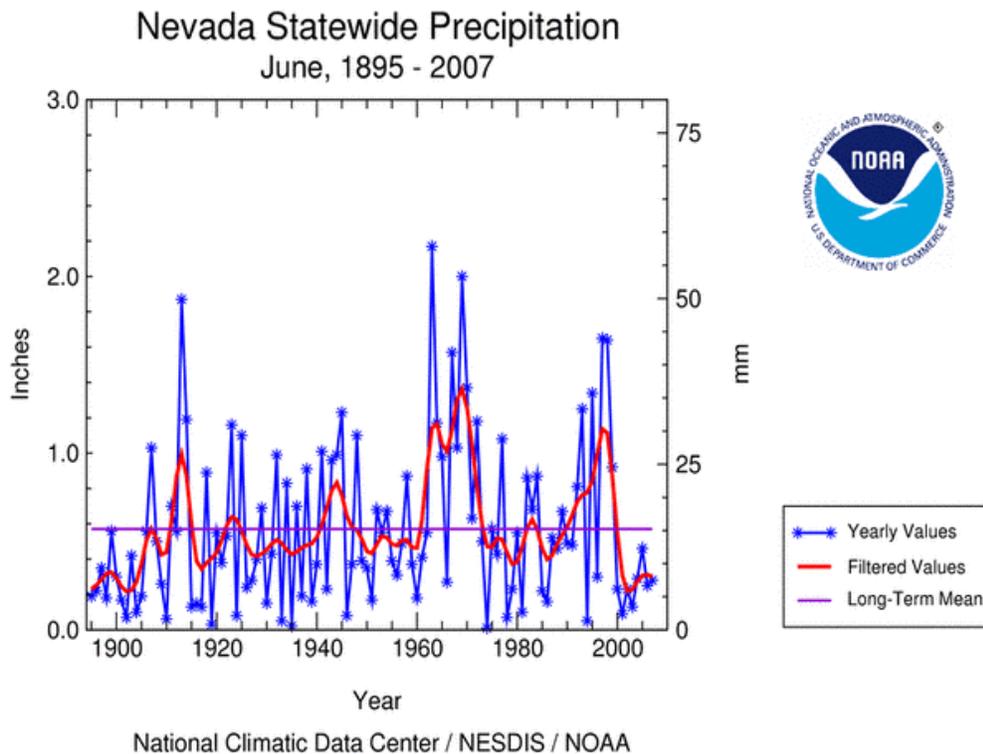


Figure A-2 One hundred and twelve years of Nevada precipitation averages

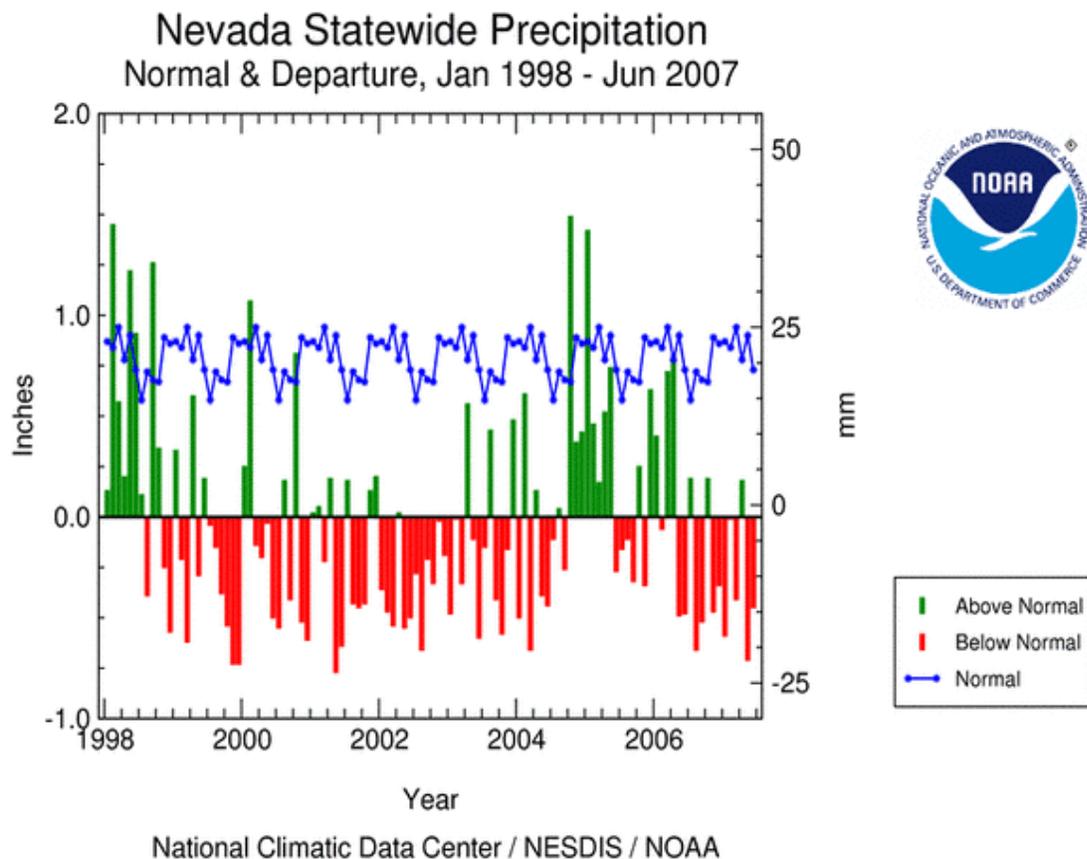


Figure A-3 Fluxuations in Nevada statewide precipitation since 1998

Hughes and Graumlich (1996) reconstructed 7979 years of annual precipitation from bristlecone pine in the White Mountains of eastern California to document the occurrence of eight multi-decadal droughts, with the two most recent centered on 924 AD and 1299 AD (Figure A-3).

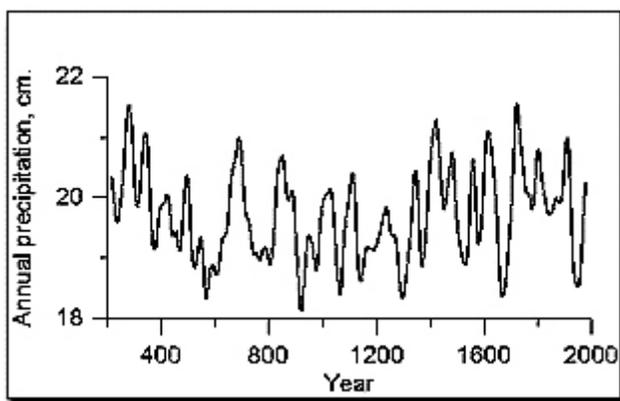


Figure A-4 7979 Years of annual precipitation reconstructed from bristlecone pine

Areas specific to the NTS and southern Nevada are in a 100-year drought cycle; Figure A–4 shows that major drought conditions have occurred in multiyear waves since 1895. The current drought that is affecting the NTS and its neighboring lands has persisted since 1996 (Goodrich 2007). Researchers think that the rise in greenhouse gases in the atmosphere may lead to a return of multi-decadal megadrought conditions that existed prior to 1600 AD. The most severe megadrought occurred between 900 AD and 1300 AD (Cook et al. 2004, Goodrich 2007).

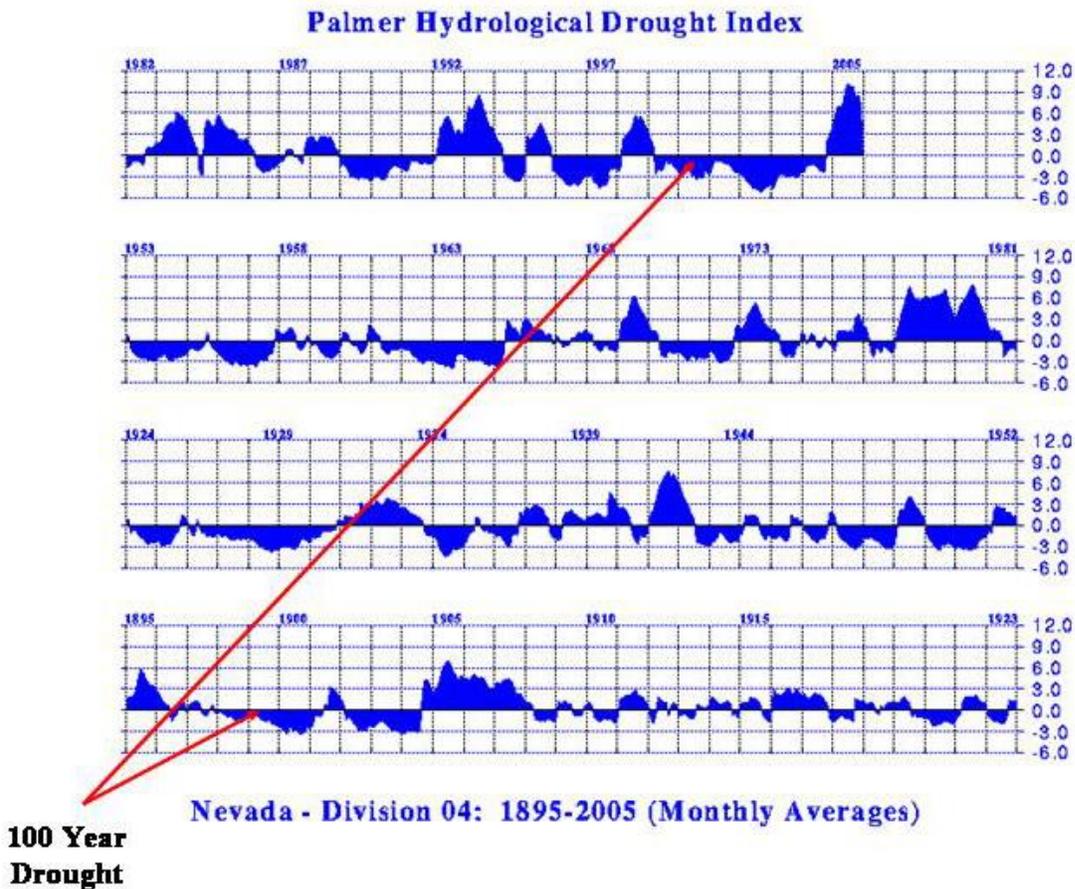


Figure A–5 Palmer hydrological drought index from 1895-2005 in Nevada – Division 04

The CGTO recommends that action be taken to lessen the impacts of this drought cycle through meaningful research and management applications because there is the potential for irreversible environmental degradation and biodiversity loss. This type of action is a concept found in social impact assessment and environmental studies known as the precautionary principle. This principle implies that there must be a willingness to take action in the advance of scientific proof or evidence of the need for proposed action. If there is a delay in action, it will be devastating to both society and nature (Cooney and Dickson 2005). The precautionary principle stresses that there must be ethical responsibilities towards maintaining the integrity of natural systems, and the fallibility of human understanding. The CGTO requests that traditional environmental management practices occur in order to help restore and maintain the ecology of the NTS.

HYDROLOGY

One inevitable implication of the current 100-year drought is that the surface water on the NTS and immediate areas has diminished and become more sporadic. Surface water is here defined as water available for shallow rooted plants during rainfall, water available during post-rain ponding, runoff, and absorption, and water recharged into near-surface aquifers. The modification and availability of surface water has the ability to affect all plants, animals, and associated trophic levels on the NTS.

Calling the Rain (Pahwwanipagee “calling the rain”, Oo-wap-pi “calling the rain”)

One type of interaction was in the form of calling the rain. Rain calling is a basic aspect of American Indian life and culture. Traditionally there were rain callers (rain shamans, rain doctors), rain ceremonies, and helpers from the spiritual world which would help facilitate rain production. Most traditional communities had a rain maker. When the special rain shaman called upon the rain, he sang songs and was aided by his spirit helper, which was usually in the form of a mountain sheep, to call upon the rain. The mountains had important roles in this activity. They interacted with the clouds and the sky to call down the rain.

Winter Ceremonies-Snow Making Ceremonies: Western Shoshone

The Winter Ceremony was performed in the fall to ensure that a good winter with heavy snow fall will happen. The spiritual leader (weather doctor) would call the people together and meet at a special place in the mountains, sometimes near a Pine Nut gathering area. Prayers and songs were done by the spiritual leader. Usually this ceremony lasted a day. If too much rain was falling certain precautions would be taken, for example, the children were not allowed to shake willows that would be used for weaving or to kill frogs as this would bring more rain.

Hummingbirds

were not killed for many reasons, but if they were killed, there would be flooding and lightning storms, with lightning killing the person who killed the hummingbird.

Stinkbug (Bee-voos, Wu-who-koo-wechuts)

Even today, individual traditional native people can bring rain. This is done by turning a stinkbug on his back. The rain will come provided the stinkbug allows a person to tickle his belly with a small stick. As the person prays for rain, he tells the stinkbug why he is asking for rain.

Snow Fleas

Snow Fleas represent a special category of Native American environmental knowledge because they are almost invisible and live at the highest elevations on mountains. According to Indian beliefs during the late fall when it is cold there is a snow ceremony. A part of this ceremony involves calling on the snow fleas. The snow fleas are the ones that make the snow wet and absorb into the mountain. Without the snow fleas, the snow is dry and evaporates quickly. Without ceremonies and the water making fleas, there is less water for the mountains and the valleys below. The snow ceremony is conducted in relationship with ceremony of the seeds

where young girls dance with seeds in winnowing trays and a spiritual person sings songs to bring whirlwinds which envelope the dancers and scatter the seeds as a gesture of fertilizing the earth. Thus, water is brought to the fertile and dispersed seeds.

Ecology Indian Comments

The CGTO knows that this site is an ancient playa, surrounded by mountain ranges. The runoff from these ranges serves to maintain the healthy desert floor. Animals frequent this area, there are numerous animals' trails, and these play a significant part in the history of the locality and of the Indian lifestyles. Our ancestors knew that the Creator always provided for them and this site is one of their favorite places to hunt and trap rabbits. We have special leaders that organized large rabbit hunts. Many people participated so this place would be occupied at times by all kinds of our people. Rabbits provided good eating, bones for tool-making, warm blankets, and even games. Indian people refrained from eating coyote, wolves, and birds but these contribute to our stories which tell us how to behave and why we are here. We have many stories and songs that include animals and birds who have human-like antics. From these antics Indian people learn the life lessons to build character to become better persons. So animals and the places where they live contribute to our history and culture.

This culturally central place was used by and important to Indian people from our agricultural and horticultural communities located to the north – near Reese River Valley and Duckwater, to the south – near Ash Meadows, to the southeast – near Indian Springs and Corn Creek, to the east – near the Pahranaagat-Muddy River, and west – near the Oasis Valley. It was also used by people from our agricultural and horticultural communities to the far west in Owens Valley, to the far south near Cottonwood Island and Palo Verde Valley on the Colorado River, to the far southwest at Twenty Nine Palms, to the far east along the Virgin River, Santa Clara River, and Kanab Creeks, to the far north along the Humbolt River and Ruby Valley.

Plants

The CGTO knows based on previous DOE-sponsored ethnobotany studies that there are at least 364 Indian use plants on the NTS (see Appendix G). Indian people visiting the proposed location of the GTCC facility identified the following traditional use plants: (1) Indian Tea, (2) White Sage or Winter Fat, (3) Indian Rice Grass, (4) Creosote, (5) Wolfberries, (6) Four O'clock, (7) Spiny Hop Sage, (8) Joshua Tree, (9) Daises, (10) Desert Trumpet, (11) Cholla, (12) Globe Mallow, (13) Fuzzy Sage, (14) Tortoise Food Plant, (15) Sacred Datura, (16) Wheat Grass, and (17) Lichen. Other plants were present but not identified due to the late season and the dry condition of the plants.

Plants are still used for medicine, food, basketry, tools, homes, clothing, fire, and ceremony – both social and healing. The characteristics of the plants at the proposed GTCC area are smaller and thinner than in other desert areas where it is wetter. Indian people from elsewhere traveled to this area to gather specific plants because they have stronger characteristics when they grow in dry places. The sage is used for spiritual ceremonies, smudging, and medicine. The Indian rice grass and wheat grass are used for breads and puddings. Joshua tree is important for hair dye, basketry, foot ware, and rope. Datura is used for hallucinogenic effects during which alternative

places can be visited by medicine men. *Datura* also goes itself to disturbed areas and heals them. The globe mallow had traditional medicine uses, but in recent times is also used for curing European contagious diseases.

Animals/Insects

The CGTO knows based on previous DOE-sponsored ethnofauna studies that there are at least 170 Indian use animal on the NTS (see Appendix G). Indian people visiting the proposed location of the GTCC facility identified the following traditional use animals: (1) Jack Rabbits, (2) Whiptail Lizards, (3) Antelope, (4) Tortoise, (5) Kangaroo Rats, (6) Horned Toad, (7) Rock Wrens, (8) Ravens, (9) Grasshoppers, and (10) Stink Bugs. Other animals (such as snakes, bats, and owls) were perceived to be present but not observed because they primarily emerge at night.

All animals and insects were and are culturally important and the relationships between them, the Earth, and Indian people are represented by the respectful roles they play in the stories of our life then and now. The GRCC valley is where a spiritual journey occurred. It involved Wolf (*Tavats* in Southern Paiute, *Bia esha* in Western Shoshone, *Wi gi no ki* in Owens Valley Paiute) and Coyote (*Sinav* in Southern Paiute, *Duhvo esha* in Western Shoshone, *Esha* in Owens Valley Paiute) and is considered a Creation Story. Only parts of this can be presented here. When Wolf and Coyote had a battle over who was more powerful, Coyote killed Wolf and felt glorious. Everyone asked Coyote what happened to his brother Wolf. Coyote felt extremely guilty and tried to run and hide but to no avail. Meanwhile, the Creator took Wolf and made him into a beautiful Rainbow (*Paro wa tsu wu nutuvi* in Southern Paiute, *Oh ah podo* in Western Shoshone, *Paduguna* in Owens Valley Paiute). When Coyote saw this special privilege he cried to the Creator in remorse and he too wanted to be a Rainbow. Because Coyote was bad, the Creator put Coyote as a fine white mist at the bottom of the Rainbow's arch. This story and the spiritual trails discussed in the full version are connected to the Spring Mountains and the large sacred cave in the Pintwater Mountains as well as to lands now called the Nevada Test Site. This area is the home place of Wolf who is still present and watches over the area and us.

Minerals

The CGTO knows based on previous DOE-sponsored cultural studies that there are many minerals on the NTS (no complete list available). Indian people visiting the proposed GTCC site identified the following traditional use minerals: (1) Obsidian, (2) Chalcedony, (3) Yellow Chert or Jasper, (4) Black Chert, (5) Pumice, (6) Quartz Crystal, and (7) Rhyolite Tuff. Other minerals were perceived to be present but not observed because of the limited time and search area.

All minerals are culturally important and have significant roles in many aspects of Indian life. For example, the Chalcedony on the proposed GTCC site would have made an attractive offering which would be acquired here by a ceremonial traveler and then left at the vision quest or medicine site located to the north on top of a volcano like Scrugham Peak. Returning ceremonial travelers would also bring offerings back to where they had acquired offering, thus the Yellow Chert or Jasper (observed on the GTCC site) which outcrops about 70 miles to the north would be gathered there and returned to the Chalcedony site as an offering.

Playas

The CGTO knows, based on cultural studies funded by the DOE on the NTS and playa-specific studies funded by Nellis Air Force Test and Training Range (Henderson 2008), that playas occupy a special place in Indian culture. Playas are often viewed as empty and meaningless places by Western scientists, but to Indian people playas have a role and often contain special resources that occur nowhere else. The following text was prepared by the Indian people who visited the proposed GTCC site.

Is a playa a wasteland? According to Indian elders playas were used in traveling or moving to places where work, hunting, pine cutting or gathering of other important foods and medicine could be done. One elder remembers crossing over dry lake beds and traveling around but near the edges and they discussed how provisions were left there and at nearby springs (See NRC 2009b for additional information about the cultural importance of springs) by previous travelers at camping spots. Indian people left caches in playa areas for people who crossed valleys when water and food was scarce. Frenchmen playa is such a place. Indian people took advantage of traveling through this playa as mountains completely surround this area. The CGTO knows that most dry lakes are not known to be completely dry. An example is Soda Lake near Barstow, California. The Mohave River flows into this dry lake and most of the year it looks dry but it actually flows underground. Building berms on dry lakes beds to offset water and runoff doesn't sound like a good idea to the Indian way of thinking. So why build a GTCC site on and use this playa when the odds of radiation seem feasible? The Indian people who visited this site recommend not to bother Frenchmen Playa. It is only one of two in the immediate region and has special meanings. There should be a more descriptive study to fully understand the impacts. More time is needed, also for Indians to revisit this site. Although some people continue to view Frenchman playa as a wasteland, the CGTO knows it is not. Further ethnographic studies are needed.

BIOLOGICAL RESOURCES (Dá Me Na-Nu-Wu-Tsi “Our Relations All of Mother Earth”)

It is nearly impossible to observe and monitor the changes on cultural resources on the NTS study lands. Some changes occur quickly and certain changes happen slowly. For an example, an earthquake could cause serve damage instantly and the onslaught of impending drought and famine can become a great heavy burden on mankind and his environment.

The current 100-year drought has increasingly stressed all of the plants and animals on the NTS. Because this is a unique, albeit, perhaps a cyclical event, its environmental impacts are unprecedented in the history of the operation and management of the lands of the NTS. It is expected that the 100-year drought has modified the abundance and distribution of all animals and plants. The quality, quantity, and distribution of indigenous plants necessary to sustain a healthy environment to maintain a productive animal habitat is clearly affected.

Because Native Americans view the NTS lands as holy lands there is deep concern for it. Certain springs have dried up, which makes animals travel into other districts, makes food foraging difficult, and dries up the land (See NRC 2009b for additional information about the cultural

importance of springs). The remaining stressed animals and plants have lower fecundity and nutritional value in the food chain. The CGTO recognizes the nation-wide need to identify and protect threatened and endangered plants and animals.

The members of the consulting tribes who have lived on these lands since Creation value all plants and animals, yet some of these occupy a more culturally central position in their lives. The main characteristic of a healthy landscape is healthy plants, animals, and visual beauty. The role of land managers is to help care for the land and its ecosystems. Therefore, the CGTO applauds the efforts being designed to minimize the severe impacts of the ongoing drought. Conservation and preservation should become high priority. In order to convey the Native American meaning of these plants, a series of studies were conducted and the findings were negotiated into a set of criteria for assessing the cultural importance of each plant and of places where plant communities exist. The CGTO provided these cultural guidelines so that NEPA analysis and other agency decisions could be assessed from a Native American perspective.

Because of these stresses, the animals and plants of the NTS require management interventions unforeseen during the 1996 *NTS EIS*. American Indian people have faced such drought episodes in the past and have the capacity to suggest and carry out adaptive responses. Adaptive responses to extreme climatic fluctuations involve both physical and spiritual interventions designed to restore balance and well-being to the area. All tribes involved in the CGTO recognize a range of these interventions, which have been successful in the past. The following are a series of cases that demonstrate how Native American people have interacted with the land and natural elements to help all aspects of life.

What is Out There?

The CGTO has identified as fundamental in their cultural concern a list of 364 plants and 170 animals which were traditionally used and are currently culturally central. Concerns exist that this larger list has been reduced to an official list of 107 plants and 26 animals (see American Indian Writers Subgroup, CGTO 1996: Table G-1, G-2, pp G-14 – G-17, G-18). The CGTO argues that the full list should be used to assess impacts because both plants and animals appear and disappear on the NTS at various seasons and during various climatic episodes. Thus the working list of potentially impacted plants and animals needs to be expanded to the full list of Indian plants and animals. These species have been identified as indicators of the health of NTS ecosystems.

Native Americans have always been concerned that the native species of vegetation on the NTS may be in danger of being lost. To native people, plants provided most of the food resources as well as the raw materials for medicines, tools, shelter, and even ceremonial objects. Take the tobacco, considered highly sacred, the tobacco plant was carefully cultivated to ensure its posterity. Religious leaders and traditionalists would guard the location for their own use. The plant used properly would bloom and blossom for the user, because it was being utilized appropriately. Other sacred plants were the sage, sweet-grass and cedar. These are considered as gifts from the earth and are to be applied in traditional ceremonies and not for so-called “recreational” purposes. There is much evidence that regaining and reclaiming Indian plant

knowledge could benefit humans in many ways. The CGTO would like the land managers of the NTS to implement measures with the goal of restoring lands with native species. Ecosystem health includes the people with whom the natural environment developed, specifically, the member tribes of the CGTO. By involving the CGTO in the design, implementation, and analysis of the biological surveys, NNSA/NSO can obtain more comprehensive reports of ecosystem health and potential impacts, as well as further facilitate government-to-government consultation with the CGTO.

Environmental Justice

The CGTO would like to have their DOE approved definition of Environmental Justice added to the current Environmental Justice description.

DOE has recognized the need to address environmental justice concerns of the CGTO based on disproportionately high and adverse impacts to their member tribes from DOE NTS activities. In 1996, the CGTO expressed concerns relating to environmental justice that included 1) damage to Holy Lands, 2) negative health impacts, and 3) lack of access to traditional places that contributes to breakdowns in cultural transmission. In the 2002 NTS SA, NNSA/NSO concluded that with the selection of the Preferred Alternative, the CGTO would be impacted at a disproportionately high and adverse level consequently creating an environmental justice issue. Since 2002, NNSA/NSO has supported a few ethnographic studies involving the CGTO and culturally important places including in 2004, when NNSA/NSO arranged for tribal representatives to conduct evening ceremonies at Water Bottle Canyon. While the opportunity for the evening ceremony was a significant accommodation, disproportionately high and adverse impacts from DOE NTS activities continue to affect American Indians. The three environmental justice issues noted by the CGTO need to be addressed.

The CGTO is the voice for acclaiming the responsibility of maintaining stewardship with the land for all Native American Indian Tribes. The bonding is a privilege to be faceted above all else and must be carried and held by enabling principles. The CGTO believes this right was given to them at Creation and must be followed. Otherwise, the networking of the other spirit world will be severed. The CGTO knows there are places on the NTS landscape that needs traditional ceremonies and blessings to offset the tensions of severe land disturbances done to it. An example is Shoshone Mountain. Shoshone Mountain is large and long. Roads are limited to its crest making it inaccessible for religious and traditional people to go there to conduct ceremonies. The CGTO recommends that special privileges be allowed for ceremonial **journeys** to take place and to provide funding for transporting traditional leaders to inaccessible places such as Shoshone Mountain by helicopter to perform ceremonies.

Environmental Justice and the Ruby Valley Treaty of 1863

The CGTO supports the efforts of the Western Shoshone to have the Ruby Valley Treaty of 1863 be fully recognized as originally intended. Previously, DOE/ NNSA has relied on the Supreme Court Decision of U.S. v. Dann as a means of abrogating their trust responsibilities. The focus of this case dealt with trespass violations associated with grazing cattle on government land. In the opinion of the Western Shoshone people, this treaty of peace and friendship is still in

full force and affect. Subsequent, to this court decision, the Western Shoshone Nation brought the matter before the United Nations and the Organization of Human Rights in Geneva, Switzerland. On January 9, 2003, the Inter-American Commission on Human Rights rendered its final decision in the case of Western Shoshone land rights in favor of Mary and Carrie Dann. This international body found the actions of the U.S. Government to be in violation of Western Shoshone rights with regard to property, due process, and equality under the law.

In 2004, the United States attempted to bring closure to the Western Shoshone claims by offering compensation. This highly controversial action has not affected nor diminished the aboriginal claims of the Western Shoshone to the land. It is maintained in previous EIS documents that the United States has failed to uphold its trust responsibility and negotiate further with the Western Shoshone Nation. No nation to nation discussions as promulgated under federal law have occurred. In this regard, the Western Shoshone Nation should receive equal treatment as afforded to other countries.

In March 2005, the Western Shoshone Nation filed a lawsuit against the DOE for the siting of a High-Level Nuclear Waste and Spent Nuclear Fuel Underground Geologic Repository at Yucca Mountain. It is the position of the Western Shoshone that such action being proposed by the DOE violates the terms and conditions of the Ruby Valley Treaty of 1863. At this current time, all activities at Yucca Mountain have been suspended as ordered by President Obama. Despite this freeze, the CGTO recommends that the DOE abide by the treaty as originally intended.

Transportation

The transportation of low level radioactive waste (LLRW) was a major issue originally addressed in Appendix G of the 1996 EIS. The AIWS addressed serious flaws in the then draft transportation study by noting that neither the CGTO nor the tribes were consulted formally. The tribes were only informed of the matter through a series of public meetings, which the AIWS viewed as a violation of federal legislation requiring government to government consultation. The AIWS also detected limited and faulty assessments of new railroads and other activities on cultural and Native American resources. The study documents revealed missing or misnamed Indian tribes and reservations therefore, the AIWS recommended a systematic comprehensive study of American Indian transportation issues to complete the general study that incorporated concerns of “stakeholders.”

Native Americans Respond to the Transportation of Low Level Radioactive Waste to the Nevada Test Site (Austin 1998)

On July 25, 1996, the DOE/NV sent a letter announcing a comprehensive Native American LLRW study and requested tribal participation. The five members of the AIWS who recommended the study participated in a planning team and formed the core of the American Indian Transportation Committee (AITC). The planning team began by meeting with DOE/NV officials to determine which proposed transportation routes were under consideration. A study proposal was developed and three criteria were determined that needed to be met by each tribe invited to participate in the study. The criteria were aboriginal and/or historic cultural affiliation

to the lands along any of the three proposed routes, location near any of the three proposed routes in the vicinity of Nevada, and frequent use of the proposed routes by tribal members.

In addition to the regular CGTO members, the AITC planning team identified six additional Western Shoshone tribes, bands, communities, and organizations, as well as Mohave, Hopi, Navajo, and Goshute peoples all of whom met the criteria for participation in the study. A total of 29 tribes, subgroups, bands, communities, and organizations were potentially affected by the transportation of LLRW.

This study addressed perceived risks by American Indians that derive from the transportation of LLRW. It focused on three truck haul routes as these pass through in a four-state area that generally reflects the administrative responsibility of the DOE/NV. The study involved a series of unique methods including both quantitative and qualitative data collection. The study documented that radiation is perceived as an Angry Rock by many Indian people. It exists and acts according to epistemological guidelines that do not reflect those perceived as existing in Western science. This is an extremely important finding because American Indian responses to radioactivity reflect its spiritual as well as its physical dimensions (Austin 1998).

U.S. DOE Nevada Operations Office, Intermodal Transportation of LLRW to the Nevada Test Site, Summary of Meeting with Native Americans, November 18 to 20, 1998, Tonopah, NV (American Indian Transportation Committee 1998)

While the initial Native American LLRW study was being completed, the DOE decided to conduct an Environmental Assessment of the Intermodal Transportation of Low Level Radioactive Waste (IM EA). Intermodal refers to the use of both railroad and trucks to haul LLRW from its producers to the NTS. The intermodal study introduced the concept of an entrepot (a trans-shipment facility) where LLRW would be taken from railroads, perhaps stored for a period of time, and then reshipped via truck to the NTS. The DOE asked the members of the AITC to take the findings from the Austin report and any pertinent previous studies and apply them directly to the IM EA. This task was accomplished at a meeting held in Tonopah, Nevada and resulted in a report entitled *U.S. DOE Nevada Operations Office, Intermodal Transportation of LLRW to the Nevada Test Site, Summary of Meeting with Native Americans, November 18 to 20, 1998, Tonopah NV (American Indian Transportation Committee 1998)*.

American Indian Transportation Committee Field Assessment of Cultural Sites Regarding the U.S. Department of Energy Pre-approval Draft Environmental Assessment of Intermodal Transportation of Low-Level Radioactive Waste to the Nevada Test Site (American Indian Transportation Committee 1999)

The AITC concluded that the Austin study (1) was not designed to assess specific locations along its study-area highways, (2) the IM EA was considering some highway routes that had not been considered in the Austin study, and (3) the IM EA raised the issue of potential LLRW impacts along railroad routes. The AITC thus recommended to the DOE/NV that they support the AITC to conduct on-site studies along the new highway routes. This request was resulted in a formal research proposal submitted to the DOE on December 22, 1998. The proposal was funded on January 4, 1999. The AITC went into the field on January 11, 1999 and worked continuously

until January 21, 1999. The direct field observations of the AITC during this period of study were the foundation for their summary of findings.

The study was guided by a series of agreed to methods for collecting data. Given the great distances and the time needed to assess each place visited along the proposed routes, it was agreed by the AITC that two kinds of site evaluations would be conducted. The first is a complete site evaluation and the second was called a mini-site evaluation. Each had his/her own forms and each AITC member filled out one or the other form at each site that was identified along the proposed routes. At the end of three days of site visits, the AITC spent one day writing the results of their evaluations. These site descriptions and evaluations were fully discussed by the AITC; therefore, the text provided in this summary of findings has been agreed to by the entire AITC.

A total of 25 sites were evaluated by the AITC. The sites were dispersed across an extensive area within the previously established region of influence, from Moapa and Caliente, Nevada in the east, to Barstow, California in the west. This vast stretch of land contained a large variety of culturally significant Indian places. Cultural resources and cultural landscape features were identified and evaluated; these included mountains, valleys, springs, trails, a variety of plants and animals, archaeological remains, storied rocks, rivers, and urban communities considered important to Numic and Yuman speaking peoples.

Comments and concerns made for the places visited and the associated resources, as well as Indian socioeconomics and environmental justice were edited and integrated into the existing pre-approval draft IM EA text sections. Also recommendations pertaining to further Native American input and assessments as part of the EA process were made to the DOE (Arnold et al. 1999).

Confronting the Angry Rock: American Indians' Situated Risks from Radioactivity (Stoffle and Arnold 2003)

This article synthesized the key findings from the previous transportation studies by discussing Numic-speaking peoples' epistemological views towards radioactive materials and how it could impact places and resources on traditional lands. The article framed the discussion in terms of perceived risks from the transportation of radioactive waste. As mentioned earlier, Numic-speaking people view radioactive material as an angry rock and they have possessed this knowledge and have used this rock for thousands of years. The angry rock is a powerful spiritual being that is a threat that cannot be controlled nor contained through conventional means. It has the power to pollute places, food, and medicines thus they cannot be used afterwards by Indian people. The angry rock also has the ability to cause serious spiritual impacts. The transportation of the angry rock along the highways poses threats to areas like Animal Creation places (the Red Tail Hawk Origin Site), access to spiritual beings (Potato Woman), human souls that have not been sung to the afterlife (Hiko Massacre Site), and ceremonial areas (Black Canyon, Pahrnagat Valley).

The findings presented in this article demonstrate that American Indian risk perceptions are real and need to be understood as calculated risks. Also the shared cognitions of risk among people who share a common culture raise questions of alternative epistemologies which are not normally addressed in risk assessments. The article concluded with thoughts on the "logical step" towards

addressing risk. There is a need to afford special protection for Indian people and their connected environment and allow the reestablishment of this relationship (Stoffle and Arnold 2003). The AIWS addresses this issue directly in the Biological Resources and Environmental Justice sections of this essay.

The Angry Rock

The CGTO knows that radiation can be and is viewed from both a western science and a Native American perspective. These alternative and competing perspectives are key for understanding the cultural foundations of American Indian responses to the mining, processing, use, transportation, and disposal of radioactive materials. At some level of analysis from an Indian perspective, all radioactive waste is basically the same problem to Indian people. Subtle differences in classification from a Western science perspective of radioactive waste only mask and do not significantly modify the basic cultural problems of radioactive waste for Indian people and their traditional lands.

The Angry Rock is a concept used by Indian people, involved in DOE funded radioactive waste transportation and disposal studies, to quickly summarize the complex cultural problems associated with what happened to this known mineral when it was improperly taken and used by non-Indians. The notion of an Angry Rock is premised on the belief that all of the earth is alive, sentient, speaks Indian, and has agency. When the elements of the earth are approached with respect and asked for the permission before being used they share their power with humans. The reverse occurs when they are taken without permission – they become angry withhold their power and often using it against humans. Thus, uranium is an Angry Rock. Uranium has been known and carefully used by spiritual specialists and medicine persons for thousands of years (Lindsay et al. 1968). The following American Indian elder quote from a DOE funded report (Austin 1998) begins to explain this perspective:

We are the only ones who can talk to these things. If we do not make sure that we talk to those things, then they are going to give us more bad harm, because it is already happening throughout the country. Those are the reasons why the Indian people say ... like uranium for one, uranium was here since the beginning of this Earth, when it was here we knew uranium at one time. And still it is used, but then they got a hold of it and made something else out of it. Now it is a man made thing, and today it accumulates waste from nuclear power plants, it accumulates more, it has its own life. Radiation has said to us at one time "If you use me make sure you tell me before you use me why you are going to use me and what for. " And we never said anything to that uranium at all, and we put something else in there with it, which shouldn't belong with it. It gives it more power to eliminate the life, of all living things on this planet of ours. Those are the reasons, why the Indian people always say, and I know because I have been there. The rocks have a voice...

Although from a Western science perspective radiation can be isolated and contained by conventional techniques, the Angry Rock has the power to move and cannot be contained by barriers. Indian people who have dealt with the Angry Rock for thousands of years note that there are traditional ways to deal with the uranium the natural rock if used by trained Indian specialists, but these may or may not work with the Angry Rock of modern radiation waste.

Another elder noted:

Songs ... we are the ones who should be talking to those things. Radiation is going to take all of our lives, it is continuously moving over the land. The land don't want it, nobody wants it. And today, we are doing a bad thing by using radiation on each other. Radiation is something that should not be used to kill animal life...

Another elder noted:

And can it be contained? As it's transformed it can be, I think it can be contained physically but not spiritually, and again I think spiritually as it's been altered because it's in that energy field because it's been altered. The spirit, that's where it can do its harm in an altered form. It doesn't do any good to anybody. And there you're just in the wrong place in the wrong time, it does influence plants and animals, minerals and air, the spirit of any area it passes through. The reason somebody is sick. I don't think it's necessary to talk about how each one of these is influenced, it just is.

Another elder noted:

As far as the transportation of waste there's a lot of unknowns and we don't know what the consequences are. We know there are many sicknesses that come out from people that have been contaminated by nuclear waste and as far as Indian people go, we show respect to the land, show respect to other people, for the animals, the plants, the rocks. The power of the rock – Just looking at Chemehuevi Mountain, it's a very spiritual mountain from this perspective right here. When I look out towards the mountains and I don't just see a mountain, I see a place of power, I see a place where I can go and meditate and speak with the Creator directly and ask for prayers and blessings for people directly. Just like anything else, you have to give prayers all the time because the creator is here to watch and protect over us. I feel that we wouldn't have come this far if he wasn't here to watch over us and we are here to pray and we are here to protect the other resources.

Another elder said:

I can envision the animals standing back once it goes through for the first time and they recognize that there's a danger that they would move away because of fear. That they would no longer be there and that there's something bad coming down the road and they disperse and move away into different corridors. Kind of like a dust storm, they disperse and move further and further away. I see it from the animals' standpoint, they're a lot smarter than us and they've been doing this for longer than us and their senses are more keen and I think the animals would get back and it would create dead zones throughout the country. Through these corridors or transportation routes of course at the site there will be those that are curious who want to go see.

Another elder said:

I don't know what you would do with this rock if it's angry and this is its way of rebelling, getting

back. I think as a Native American I would backstep and ask for forgiveness. Sometimes forgiving is not very easy because there's sacrifices we have to make and there's consequences ... I don't think it can be done as a group, it's an individual thing and each one of us has to go back and ... ask for forgiveness for what has taken place. It's not just only that I think it's going to be more complicated than going out into the mountains and saying, "hey, I'm sorry, I won't do this, I won't do that and I won't bother you anymore. There's a lot of other things that need to be forgiven. The rock is the most precious and it's the largest and it's the one that needs to be forgiven the most. There's a lot of small forgiveness that have to be given before the large rock. I think it's a stepping stone...

... the rocks are angry, yes, they're striking out saying "don't do this to me, don't touch me, don't let this happen. " In a sense you look at it from a spirituality standpoint, it's the spirits of Mother Earth telling us don't mess with Mother Earth.

It remains a matter of debate as to whether traditional means of placating powerful rock-based forces can be used to control or placate radioactive waste. Western scientists have created a problem for Indian people that, despite being very critical to their future, is not easily resolved.

Cultural Resources

The CGTO affirms a commitment to assisting the archaeology program by providing CGTO appointed tribal monitors. These monitors are provided approved guidance and training by the CGTO as well as extensive project orientation by the professional archaeologists. Monitors are trained so they know certain appropriate cultural responses to materials identified during archaeological survey, but they recognize that certain kinds of cultural resources require spiritual specialists who are then called in to evaluate and respond to newly identified cultural resources. In cases where NAGPRA relevant resources are identified then the CGTO is contacted and will set into motion NAGPRA inadvertent discovery protocols (NAGPRA 1990; Stoffle, Halmo, and Dufort 1994; Stoffle, Zedeño, and Carroll 2000). At the end of the monitoring experience, each monitor provides his or her own personal notes and experiences for a summary report that is prepared and submitted to the CGTO.

The CGTO knows the distribution and density of known archaeology sites has not significantly changed since the 1996 NTS EIS. They know the largest number of recorded cultural resources is in the northwest part of the NTS, on and around Jackass Flats, Yucca Mountain and Shoshone Mountain. The reason for this is because numerous activities were conducted on those portions of the NTS within the last 10 years, less attention has been directed to these regions and adverse impacts has been minimized. While this lapse is occurring, NTS decision-makers may consider conducting new projects and investigations. The CGTO recommends that prior to land disturbances of projects a timely American Indian Assessment be completed.

Types of American Indian Resources

The CGTO knows, based upon its collective knowledge of Indian culture and past American Indian studies, that American Indian people view cultural resources as being integrated. Thus certain systematic studies of a variety of American Indian cultural resources must be conducted before the cultural significance of a place, area, or region can be fully assessed. Although some

of these studies have been conducted, in other areas studies have not begun. A number of studies are currently planned. Indian people can fully assess the cultural significance of a place and its associated natural and cultural resources when all studies have been completed and our governments and tribal organizations have reviewed the recorded thoughts of our elders and have officially supported these conclusions. American Indian studies focus on one topic at a time so that tribes and organizations can send experts in the subject being assessed. The following is a list of studies for a complete American Indian assessment:

- Ethnoarchaeology – the interpretation of the physical artifacts produced by our Indian ancestors.
- Ethnobotany – the identification and interpretation of the plants used by Indian people.
- Ethnozoology – the identification and interpretation of the animals used by Indian people.
- Storied Rocks – the identification and interpretation of traditional Indian paintings and rock peckings.
- Traditional Cultural Properties – the identification and interpretation of places of central cultural importance to a people, called Traditional Cultural Properties; often Indian people refer to these as “power places.” Native American Indian properties and interpretations shall be determined by Native American spiritual person when:
 - Cleansing (removing negatives)
 - Purifications/preparations (repatriations and related issues).
- Ethnogeography – the identification and interpretation of soils, rocks, water, and air.
- Cultural Landscapes – the identification and interpretation of special units that are culturally and geographically unique areas for American Indian people.

When all of these subjects have been studied, then it will be possible for American Indian people to assess three critical issues: (1) What is the natural condition of this portion of our traditional lands? (2) What has changed due to DOE activities? And (3) What impacts will proposed alternatives have on either furthering existing changes in the natural environment or restoring our traditional lands to their natural condition? Indian people believe that the natural state of their traditional lands was what existed before 1492, when Indian people were fully responsible for the continued use and management of these lands. The NTS and nearby lands were central to the Western Shoshone, Owens Valley Paiute, and Southern Paiute people. The lands were central in the lives of these people and so were mutually shared for religious ceremony, resource use, and social events (Stoffle et al. 1990a and b). When Europeans encroached on these lands, the numbers of Indian people, their relations with one another, and the condition of their traditional lands began to change. European diseases killed many Indian people; European animals replaced Indian animals and disrupted fields of natural plants; Europeans were guided to and then assumed control over Indian minerals; and Europeans took Indian agricultural areas. Despite the pollution and destruction of some cultural resources and the physical separation from the NTS

and neighboring lands, Indian people continue to value and recognize the central role of these lands in their continued survival.

Recognizing this continuity in traditional ties between the NTS and Indian people, the DOE in 1985 began long-term research involving the inventory and evaluation of American Indian cultural resources in the area. This research was designed to comply with the American Indian Religious Freedom Act (AIRFA), which specifically reaffirms the First Amendment of the U.S. Constitution rights of American Indian people to have access to lands and resources essential in the conduct of their traditional religion. These rights are exercised not only in tribal lands, but also beyond the boundaries of a reservation (AIRFA 1978; Stoffle et al. 1994; Stoffle, Halmo, and Dufort 1994). To reinforce their cultural affiliation rights to prevent the loss of ancestral ties to the NTS, 17 tribes and organizations have aligned themselves to form the CGTO. This group is formed by officially appointed representatives who are responsible for representing their respective tribal concerns and perspectives. The CGTO has established a long standing relationship with the DOE. The primary focus of the group has been the protection of cultural resources.

The DOE and the CGTO have participated in cultural resource management, including the Yucca Mountain Project (Stoffle 1987; Stoffle, Evans, and Halmo 1988; Stoffle, Olmsted, and Evans 1988; Stoffle, Evans, and Harsbarger 1989; Stoffle et al. 1989; Stoffle, Halmo, and Olmsted 1990; Stoffle et al. 1990a; Stoffle et al. 1990b; Stoffle and Evans 1988; Stoffle and Evans 1990; Stoffle and Evans 1992), the Underground Weapons Testing Project (Stoffle et al. 1994), the Rock Art Study (Zedeño et al. 1999), the Water Bottle Canyon Interpretation and Traditional Cultural Property Study (Arnold et al. 1998; Stoffle, Van Vlack, and Arnold 2005) and the Timber Mountain Caldera Study (Stoffle et al. 2006). These studies are used in this GTCC EIS, along with the collective knowledge of the CGTO, as the basis of the comments in the 1996 NTS EIS, 2002 NTS SA, and the current SA. The cultural resource management projects sponsored by the DOE have been extremely useful for expanding the inventory of American Indian cultural resources beyond the identification of archaeological remains and historic properties.

Visual Resources

Views are important cultural resources that contribute to the location and performance of American Indian ceremonialism. Views combine with other cultural resources to produce special places where power is sought for medicine and other types of ceremonies. Views can be of any landscape, but more central views are experienced from high places, which are often the tops of mountains and the edges of mesas. Indian views tend to be panoramic and are special when they contain highly diverse topography. The viewscape panorama is further enhanced by the presence of volcanic cones and lava flows. Views are tied with songscapes and storyscapes, especially when the vantage point has a panorama composed of multiple locations from either song or story. Key to the Indian experience of views is isolation. Successful performance of ceremonies (whether by individuals or groups) is often commemorated by the building of rock cairns and by storied rocks and paintings. The CGTO tribes recognize the cultural significance of views and have identified a number of these on the NTS. The Timber Mountain Caldera contains a number of significant points with different panoramas, including Scrugham Peak-Buckboard Mesa and the Shoshone Mountain massif.

Waste Management

The CGTO requests an analysis of the hydrological and ecological impacts of the existing water diversion dike of the current Radioactive Waste Management Complex in Area 5. The DOE recognizes that this is a very flood prone area, with major flooding episodes occurring about every 23 years. Indian people visiting this site observed that even though the current dike has been built recently and thus not experienced a 23-year flood, it has diverted and consolidated sufficient runoff that a small arroyo has been established. The Indian people visiting this site believe that the existing dike has unnaturally stressed down-slope plants and animals who now do not receive normal sheet runoff. The Indian people visiting the site believe that by concentrating the runoff, the dike has reduced the amount of water absorbed during normal sheet runoff because the consolidated runoff moves more quickly and only flows in the new and developing eroded arroyo. It is believed by the Indian people visiting the site that were a GTCC facility to be established east of the current RWMC then the dike would necessarily have to be extended causing an even greater runoff shadow and an even greater developing arroyo. The desert tortoise in the area will have to move out of this larger runoff shadow and may be concentrated in the area of Frenchmen Playa. Moving their living areas towards the playa will expose them to higher levels of radioactivity. The Indian people visiting the site believe that these current and potential impacts should be analyzed, monitored by Indian people, and reported back to the CGTO at the next annual meeting.

NTS Waste Management in Perspective

After 11 years of formal transportation studies the CGTO continues to have reservations in regards to the storage of low-level and other hazardous wastes at the NTS and the transportation of low-level waste to the NTS for storage. The CGTO still maintains that what was suggested 11 years ago still exists and affects cultural resources. Disposal diminishes the potential for visitation by members of the CGTO representatives and other Indian people.

The CGTO still believes that the waste should be disposed of in a culturally appropriate manner and that the transportation of low-level radioactive waste poses risks to the people and the environment. Previous reports on this issue document the extent and depth of our concerns for these issues (American Indian Transportation Committee 1998; Arnold et al.1997; Austin 1998; Stoffle and Arnold 2003). Waste disposal activity on the NTS is still ongoing in regards to non-Nevada low-level radioactive waste. The NTS presently uses the Disposal Crater Complex, which is expected to close by 2010. Although the NTS has future low-level radioactive waste disposal pits on standby, there is a possibility that additional craters would need to be developed. Disposal of the following materials is performed at the NTS: Nevada-generated low-level radioactive waste, mixed low-level radioactive waste, greater confinement disposal waste, asbestiform low level radioactive waste, Nevada-generated mixed waste and transuranic waste, mixed transuranic waste. These materials are stored on-site until shipped elsewhere. The CGTO remains on record as opposed to this type of practice as it potentially will limit cultural activities involving the Indian tribes.

Cumulative Impacts

Cumulative Impacts are key to the various Indian peoples connected to the NTS and specifically the proposed GTCC waste facility in Frenchman Flats. These issues have been discussed for more than 13 years with the DOE (See American Indian Writers Subgroup, CGTO 1996) but it remains unclear the extent that the process of negative impacts to Indian people and culture has been mitigated by DOE actions. Still some progress has occurred through appropriate consultation with the CGTO and their subsequent involvement in the identification and management of cultural resources (see earlier discussion of what Indian people define as cultural resources).

According to the CGTO tribes, increased land disturbances associated with all forms of activities and development on the NTS could result in a decrease in access to these areas for American Indians. Limiting access could reduce the traditional use of the NTS and other areas and affect their sacred nature. Increased development at the NTS could increase the potential for greater disturbance and vandalism of American Indian cultural resources. The CGTO tribes believe (See Appendix G – AIWS 1996) that cumulative impacts in the following areas may occur:

- *Holy land violations.* Further destruction of traditional cultural sites, making the water disappear, general treatment of the land without proper respect.
- *Cultural survival.* Decreased ability and access to perform ceremonies.
- *Environmental restoration.* Revegetation of restored lands with native species.
- *Empowerment process.*
- *Radiation risks.* These risks began with nuclear testing. Today, the CGTO tribes perceive that the radioactive risks continue in known and unknown ways underground.

Over the past 17 years of regular consultation between the NNSA/NV and the CGTO tribes, there has been a growing co-management role for the tribes. Their recommendations have been heard and, for the most part, responded to by the NNSA/NV. Indian access to places on the NTS has increased, after an early period of access loss. Unfortunately, each new program that is added to the NTS decreases the amount of space that is available for the practice of Indian religions, ceremonies, and cultural persistence. However, having no programs also can have an impact. For example, even though the mesas are now accessible to Indians for ceremonies, the roads are not maintained because there are no projects on the mesas. This makes access to the ceremonially important areas difficult.

There are still ongoing risks to Indian people from storage and disposal of waste and these will continue. Finally, transportation of radioactive materials is continuing and increasing. It is not clear to the CGTO tribes that, after two American Indian studies of radioactive waste transportation, there has been a meaningful consideration of their concerns. It is not clear to what extent further radioactive waste disposal at the proposed GTCC facility will do to increase

radiation risks to the physical and spiritual dimensions of Frenchman Playa area but some assessment is possible by Indian religious leaders.