

APPENDIX C
AMERICAN INDIAN ASSESSMENT OF RESOURCES AND
ALTERNATIVES PRESENTED IN THE SWEIS

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**Prepared by the American Indian Writers Subgroup
of the Consolidated Group of Tribes and Organizations**

“The land, air, and water are living entities. This is what all indigenous people know, understand, and acknowledge as the foundation and center of our existence. We believe we have been created in these lands. Because of this birth-right and tie to our ancestral land, the CGTO believes we have undeniable rights to interact with its precious resources, and a continuous obligation to protect it. The balance given at Creation involves Indian people, who are charged with interacting in culturally-appropriate ways with the animals, plants, minerals, air, and water. Without Indian people to care for these resources, there can be no balance. These resources cannot achieve the purposes given to them by the Creator.

The opportunity given to the CGTO to contribute our assessment and recommendations to this SWEIS is a highly positive step the DOE has taken toward voicing Indian concerns. As you read our input, you will discover these lands are part of the traditional Holy Lands of the Southern Paiute, Western Shoshone, and Owens Valley Paiute and Shoshone people (Stoffle et al. 1990). As Indian people, we are obligated to manage the land and its resources for seven generations. This means we evaluate and guide our actions in terms of what they could do for or to the next seven generations. The CGTO takes this obligation very seriously and has provided information in Appendix C so we can continue to fulfill our responsibility to care for these lands.

American Indian Writers Subgroup

Summary

Appendix C contains the American Indian assessment of resources and alternatives presented in the *Draft Site-Wide Environmental Impact Statement for the Continued Operation of the Department of Energy/National Nuclear Security Administration Nevada National Security Site and Off-Site Locations in the State of Nevada* (SWEIS). Appendix C has been prepared by the American Indian Writers Subgroup (AIWS) for the Consolidated Group of Tribes and Organizations (CGTO).

Since the beginning of time, the area encompassing the Nevada National Security Site (NNSS) (formerly the Nevada Test Site [NTS]) and the TTR has been a central place in the lives of American Indian tribes. Our land contains resources that are crucial for the continuity of American Indian culture, religion, and society.

In consideration of our strong ties and deep understanding of these lands and their resources, DOE invited the CGTO to participate in the development of the *Final Environmental Impact Statement for the Nevada Test Site and Off-Site Locations in the State of Nevada* (1996 NTS FEIS). The CGTO has had a long-standing relationship with DOE, and is comprised of 17 tribes and organizations representing the Southern Paiute, Western Shoshone, and Owens Valley Paiute and Shoshone people. Each of these groups has substantiated cultural and historic ties to the NNSS and the surrounding areas (Steward 1938; Stoffle and Evans 1988).

Our participation in the 1996 NTS FEIS was based on the American Indian Consultation Model¹ for government-to-government interactions among DOE and culturally affiliated American Indian Tribes, which was considered an innovative approach by Federal agencies at that time. Concurrently, the CGTO created Appendix G for the 1996 NTS FEIS and provided italicized text for selected FEIS sections. Building on the success of the CGTO's involvement with the 1996 NTS FEIS, DOE invited the CGTO to assess the alternatives analyzed in the SWEIS and the resources potentially affected.

The CGTO knows American Indian people are charged by the Creator to care for and interact with the environment and its resources in culturally-appropriate ways to maintain balance. American Indian's further believe these lands and their resources contain life-sustaining characteristics that must be properly respected and cared for to ensure harmony. Appendix C contains our assessment and recommendations in an effort to regain balance in the NNSS and TTR area.

C.1 Introduction

Historically, DOE has considered the NNSS to be a safe and isolated place to conduct atomic testing and to dispose of radioactive waste produced at twenty-two other Federal facilities because it is essentially thought to be an empty and ugly wasteland. Conversely, the American Indian people have always believed the NNSS region to be a beautiful holy land filled with special places of power and life-sustaining natural resources.

In response, DOE began long-term research in 1985 concerning the inventory and evaluation of American Indian cultural resources within the NNSS region. This research was designed to comply with the American Indian Religious Freedom Act (AIRFA), which specifically reaffirms the rights of the American Indian people under the First Amendment of the United States Constitution, and to have access to lands

¹ *The American Indian Consultation Model was based on the Consultation Model produced for the DoD Legacy Project (Deloria and Stoffle 1994), which was modified and implemented during the development of the 1996 NTS FEIS. This model was again revisited and implemented by the CGTO in the development of the SWEIS, and is presented in Section 10.2.1.*

and resources essential in the conduct of our traditional religion. These rights are exercised not only in tribal lands but beyond the boundaries of a reservation (Stoffle et al. 1994b).

These ethnographic studies resulted in several reports that record the regional history of American Indian people and contribute to the understanding of the presence of Indian people in the NNSS area (Stoffle et al. 1990c). They identify properties of cultural and religious significance (Stoffle et al. 1989b, 1990b), provide recommendations for reducing potential adverse effects to cultural resources (Stoffle et al. 1988a), and discuss the consultation process (Stoffle and Evans 1988, 1990; Stoffle et al. 1990b, 1991).

These investigations concluded that the NNSS area is part of the traditional Holy Lands of the Western Shoshone, Southern Paiute, and Owens Valley Paiute and Shoshone peoples, who shared them for medicinal purposes, religious ceremonies, food, and places necessary to traditional narratives and religious beliefs.

It also became clear that these lands contain not only archaeological remains left by our ancestors but also natural resources and geologic formations in the region, such as plants, animals, water sources and minerals; natural landforms that mark important locations for keeping our history alive and for teaching our children about our culture. American Indians used traditional sites in the NNSS region to make tools, stone artifacts, and ceremonial objects; many sites are also associated with traditional healing ceremonies and power places.

Several areas in the NNSS region are recognized as traditionally or spiritually important. For example, Fortymile Canyon is an important crossroad where trails from such distant places as Owens Valley, Death Valley, and the Avawatz Mountain come together. Black Cone, in Crater Flats is an important religious site that is considered to be an entry to the underworld (AIWS 2005). Prow Pass continues to be an important ceremonial site and, because of this religious significance, tribal representatives recommend that DOE avoid affecting this area (Stoffle et al. 1988). Oasis Valley was historically an important area for trade, and continues to be a place recognized for ceremonial use. Other areas are considered important based on the abundance of artifacts, traditional-use plants and animals, rock art, and possible burial sites. Despite the current physical separation of tribes from the NNSS and neighboring lands, American Indians continue to value and recognize the meaningful role of these lands in their culture and continued survival.

The CGTO has consistently expressed its concern about environmental impacts resulting from DOE activities at the NNSS. In response, DOE has routinely used conventional methods in an effort to address these impacts. Although the CGTO has been and continues to be concerned about physical impacts, our deep concerns have also been based in terms of those rooted in spiritual and cultural impacts. One of our key struggles is that DOE and Indian people have largely talked past each other because each uses different cultural definitions of radioactivity and all it has and continues to impact.

The Stoffle and Arnold (2003) study that followed reaffirmed the disconnect among DOE and the tribes and concluded that Indian people expressed three basic ideas – we have been in these lands since Creation, non-Indians have failed to appreciate the importance of these lands, and radioactivity is viewed differently in Indian culture. To scientists, radioactive minerals are well understood with specific measurable physical properties, which if one prepares properly for them, are largely safe for use and disposal in a wasteland like the NNSS. Contrary to this belief, American Indian people explain radioactivity as an angry rock—a spiritual being that has been taken from its home without its permission, used in ways it does not agree with, and is being returned to the land without reducing its anger. The angry rock is alive and as sentient as humans are, because it is both powerful and spiritual. As a powerful spiritual being, the angry rock constitutes a threat that can neither be contained nor controlled by conventional means. It has the power to pollute food, medicine, and places, none of which can be used afterward by Indian people. Spiritual

impacts are even more threatening, considering the angry rock would be transported along highways before ultimately being disposed of at the NNSS, thereby affecting animal creation places, access to spiritual beings, and unsung human souls. One of the most troubling conclusions reached by the study is that Indian people believe radioactivity has the potential to be transported along the path to the afterlife (Stoffle and Arnold 2003).

Indian knowledge and use of radioactive minerals in western United States goes back for thousands of years. Areas with high concentrations were called dead zones and placed off limits to average Indian people. Such areas were places of power or energy and could only be visited or the minerals used under the supervision of specially-trained Indian people that are sometimes referred to in the English language as shaman or medicine men. The DOE would benefit from this knowledge.

The CGTO knows that we, as Numic people, are traditional people. Traditional people are those who live a long time in one location and do not destroy the natural environment, themselves, or their way of life. Humans become traditional through a time-intensive process of co-adaptation in which both the people and their environment co-evolve to produce a sustainable way of life. At some level the people and the environment reach unification. As Numic people, we are co-adapted with our traditional lands and these lands are spiritually and physically co-adapted with us. This relationship has been documented through the various studies funded by the DOE. Traditional people are often uniquely threatened by pollution that has the potential of eliminating either our residency in or use of our homeland; thus, we are a special type of people at risk (Stoffle and Arnold, 2003).

Consolidated Group of Tribes and Organizations (CGTO)

In 1994, sixteen tribes and tribal organizations culturally affiliated² with the NNSS region formally aligned themselves as the CGTO to reinforce our cultural affiliation rights and to prevent the loss of ancestral ties to the area. The CGTO consists of officially-appointed tribal representatives who are responsible for presenting our respective tribal concerns and perspectives to DOE. Subsequent consultation efforts were expanded to 17 tribal groups and organizations in late 1994 to include the Ely Shoshone Tribe.

Presently, the CGTO consists of the following tribes and official Indian organizations:

- Southern Paiute
 - Kaibab Paiute Tribe, Arizona
 - Paiute Indian Tribe of Utah
 - Moapa Band of Paiutes, Nevada
 - Las Vegas Paiute Tribe, Nevada
 - Pahrump Paiute Tribe, Nevada
 - Chemehuevi Indian Tribe, California
 - Colorado River Indian Tribes, Arizona
- Western Shoshone
 - Duckwater Shoshone Tribe, Nevada
 - Ely Shoshone Tribe, Nevada
 - Yomba Shoshone Tribe, Nevada
 - Timbisha Shoshone Tribe, California/Nevada

² *In anthropological terms, the concept of cultural affiliation means that an ethnic group (or groups) has an established history of prior occupancy and use of a region's lands and resources (Stoffle and Arnold, 2003).*

- Owens Valley Paiute and Shoshone
 - Benton Paiute Tribe, California
 - Bishop Paiute Tribe, California
 - Big Pine Paiute Tribe of the Owens Valley, California
 - Lone Pine Paiute-Shoshone Tribe, California
 - Fort Independence Paiute Tribe, California
- Other
 - Las Vegas Indian Center, Inc., Nevada

Of these groups, 15 are Federally recognized tribes³. The Pahrump Paiute Indian Tribe, which consists of a group of Southern Paiutes living in Pahrump, Nevada, has applied for Federal tribal recognition but to date has not received it. In addition, the Las Vegas Indian Center is not a Federally recognized tribe. It is an organization that represents urban Native Americans residing in Las Vegas and Clark County, Nevada.

One of the most enduring achievements of the CGTO has been the development of a model for tribal consultation in southern Nevada, and the formation and evolution of the CGTO as a consulting body working on behalf of its tribal members (Stoffle et al. 2001). This model has and continues to serve as the basis for American Indian consultations throughout federal agencies, including but not limited to DOE, the U.S. Fish and Wildlife Service, the National Park Service, and the U.S. Department of Defense.

Another achievement of the CGTO lies in its recommendation for “preservation-in-place.” This CGTO recommendation prompted the DOE to adopt a “preservation-in-place” policy whereby artifacts are avoided and left undisturbed without collection, wherever feasible. In another case, DOE initiated a program based on CGTO’s recommendation whereby American Indian monitors would be employed on archaeological projects to ensure that American Indian sensitivities are considered, especially during artifact collection.

The CGTO convened a subcommittee, called the American Indian Writers Subgroup, whose recognized role and responsibility is to closely follow specific issues and to report back to the CGTO. The CGTO members then report back to their respective tribal governments or Indian organization governing bodies. Official responses from tribal governments and governing boards are then submitted to DOE or additional guidance is provided back to CGTO representatives.

American Indian Writers Subgroup (AIWS)

In 1995, the CGTO convened the AIWS and designated individuals to represent the three main tribal groups to document our viewpoints on the NNSS area. Specifically, the CGTO-sanctioned role and responsibility of the AIWS was to represent the seventeen tribes and Indian organizations in the development of the 1996 FEIS, and to write Appendix G to that document. The purpose and scope of Appendix G was to represent the American Indian perspective of the actions proposed and analyzed by DOE for the NNSS, and to consider and address the resources potentially impacted.

In October 2009, DOE responded to the CGTO recommendation to replicate tribal involvement in the 1996 NTS FEIS and participate in the development of the SWEIS. The AIWS reaffirms the general

³ Defined by the U.S. Department of Interior as, “Any tribe, band, nation, or other organized group or community of Indians, including any Alaska Native village... which is recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.” (25 U.S.C. 3001[7]) A list of Federally recognized tribes is maintained by the Bureau of Indian Affairs for the U.S. Department of Interior.

concepts presented in Appendix G and the American Indian perspective presented in italics within discrete sections of the 1996 NTS FEIS. In its development of Appendix C to the SWEIS, the AIWS has focused its attention on the alternatives and activities introduced in DOE's Notice of Intent to develop an environmental impact statement, and the information provided in the SWEIS for the proposed activities, alternative actions, and resources impacted.

C.1.1 Purpose, Scope, and Obligation

Appendix C contains the American Indian assessment of resources and alternatives presented in the *Draft Site-Wide Environmental Impact Statement for the Continued Operation of the Department of Energy/National Nuclear Security Administration Nevada National Security Site and Off-Site Locations in the State of Nevada* (SWEIS). Appendix C has been prepared by the AIWS at the direction of the CGTO.

In consideration of our ties to these lands and their resources, DOE asked the CGTO to review the SWEIS, and develop text for Appendix C and throughout the SWEIS to enable DOE to comply with the intent of Executive Order 13127, "*Consultation and Coordination with Indian Tribal Governments*," and DOE Order 144.1, "*Department of Energy American Indian Tribal Government Interactions and Policy*." DOE Order 144.1 outlines seven principles regarding decision making and interaction with Federally recognized tribal governments. It requests that all Departmental elements ensure tribal participation and interaction regarding pertinent decisions that may affect the environmental and cultural resources of tribes.

Consultation between the CGTO and DOE (representing the United States government) was conducted during DOE's development of the 1996 FEIS, and documented in Appendix G and throughout pertinent resource sections within the FEIS. Similar to Appendix G of the 1996 FEIS, the CGTO's participation during current consultation efforts is not limited to the alternatives presented in the SWEIS, but also integrates relevant recommendations made by Indian people for the survival and sustainability of important American Indian resources such as land, water, air, plants and animals.

American Indian people believe these resources contain life-sustaining characteristics that must be respected and cared for to ensure harmony. The CGTO knows that American Indian people have been charged by the Creator to interact with these resources in culturally-appropriate ways to maintain balance. The CGTO takes this responsibility very seriously and has developed Appendix C in an effort to once again achieve this obligation for the NNSS area. Appendix C represents the official views of the tribal governments and governing boards represented by the CGTO.

C.1.2 American Indian Participation in the SWEIS

The American Indian Writers Subgroup was comprised of the following representatives from the CGTO, with assistance from the Desert Research Institute:

Gerald Kane	Bishop Paiute Tribe	Owens Valley Paiute
Richard Wilder	Fort Independence Indian Reservation	Owens Valley Paiute
Betty Cornelius	Colorado River Indian Tribes	Chemehuevi
Lalovi Miller	Moapa Paiute Tribe	Southern Paiute
Maurice Frank-Churchill	Duckwater Shoshone Tribe	Western Shoshone
Jerry Charles	Ely Shoshone Tribe	Western Shoshone
Richard Arnold	Desert Research Institute	Southern Paiute
Brenda Bowlby	Desert Research Institute	

C.1.3 Acknowledgement

Since the early 1980's, DOE has supported systematic American Indian studies representing tribal elders' perspectives about the cultural significance of the lands and the resources of the NNSS. The CGTO and DOE continue to receive praise for their efforts to preserve American Indian culture and protect resources through the NEPA process. American Indian consultation procedures, described further in Section 10.2.1 of this SWEIS, have and continue to serve as a model for involving American Indians in both current and future NEPA efforts. The CGTO believes these efforts, combined with DOE's commitment to include the tribes in the SWEIS, will facilitate other Federal agencies to include Indian tribes and organizations into their NEPA processes, comply with DOE Order 144.1 and EO 13175, and to enable American Indian tribes and organizations to better protect their holy lands, cultural resources, and sustainably-manage American Indian resources.

C.2 American Indian Assessment of Potentially Affected Resources

The following text closely follows the outline of issues and resources as they arise in the body of the SWEIS. However, Indian people think in terms that involve Indian use of resources in the ways that nature intended. Indian use of resources requires balance-keeping strategies whereby both people and nature are sustained by each other. This means that resources must co-exist, and Indian use of these resources are often intertwined. For example, impacts to water resources also impact biological resources, which may in turn, impact geology and soils, and so forth. Because of this holistic view, discussions of these resources often overlap each other and may be repeated in other sections within Appendix C.

C.2.1 Land Use

As discussed in Section C.1, Introduction, the NNSS area is part of the traditional Holy Lands of the Western Shoshone, Southern Paiute, and Owens Valley Paiute and Shoshone peoples. The lands were central in the lives of these people and were mutually shared for religious ceremony, resource-use, and social events (Stoffle et al. 1990a and b).

American Indians consider the NNSS lands and the surrounding area to contain not only archaeological remains left by their ancestors but also countless natural resources and geologic formations, such as plants, animals, water sources and minerals; natural landforms that mark important locations for keeping our history alive and for teaching our children about our culture. American Indians rely on these lands for medicinal purposes, religious activities and ceremonies, food, recreational use, and integral places described in traditional narratives and religious ceremonies.

The NNSS area and nearby lands were significant to the Western Shoshone, Southern Paiute, and Owens Valley Paiute and Shoshone people. For many centuries, the NNSS area has been a central place in the lives of American Indian tribes, continuously used by these tribes from antiquity to contemporary times. Until the mid-1900s, traditional festivals involving religious and secular activities attracted American Indian people to the area from as far as San Bernardino, California. Similarly, groups came to the area from a broad region during the hunting season and used animal and plant resources that were crucial for their survival and cultural practices. As one elder noted, "*Land is to be respected. It sustains us economically, spiritually, and socially.*"

The CGTO maintains we have Creation-based rights to protect, use, and have access to lands of the NNSS and the immediate area. These rights were established at Creation and persist forever. Despite the loss of many traditional lands on the NNSS to pollution and reduced access, Indian people have neither lost our ancestral ties nor have we forgotten our responsibilities in caring for it.

One elder from the Moapa Paiute Tribe in Nevada responded to the potential impacts of radioactive contamination of his traditional land as follows: *“You non-Indians can move if you pollute the land on which you live, but we were created for this place, so we must face whatever happens here. We cannot move and continue to be Paiute people – this is our land – we are this land.”* (Stoffle and Arnold 2003) This view is shared by other culturally-affiliated tribes within the CGTO.

During the past decade, representatives of the CGTO have visited portions of the NNSS and have identified places, spiritual trails, and cultural landscapes of traditional and contemporary cultural significance. 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 trail and ceremonial landscape near a large water tank. These actions by DOE are considered positive steps towards facilitating co-stewardship arrangements between DOE and the CGTO to help co-manage important Indian resources of the NNSS and to regain balance.

In order to fulfill the Holy Land use expectations, the CGTO recommends continuing to identify special places, spiritual trails, and landscapes and setting aside these places for unique co-stewardship and ceremonial access. For example, studies have begun regarding the identification of places, spiritual trails and cultural landscapes in the Timber Mountain Caldera. We strongly encourage DOE to pursue these studies. When completed, these will add an American Indian cultural component that will contribute to the currently recognized importance of this National Natural Landmark.

According to tribal elders, *“The CGTO knows that ethnographic studies conducted at the NNSS have assisted DOE in incorporating a cultural component to understand that natural phenomena are dynamic, interacting processes and offer opportunities and limitations to human use. It helps federal land managers understand the cultural component of the land--such as song scapes, story scapes, spiritual trails--and its complexity. Until these ethnographic studies are completed, there will continue to be uncertainty regarding the full extent of this cultural component and the true impacts to the land from DOE’s activities at the NNSS.”*

C.2.2 Infrastructure and Energy

Although infrastructure and energy are analyzed in the SWEIS, the CGTO does not believe it is necessary to provide our assessment of these resources at this time.

C.2.3 Transportation

Indian reservations within the region of influence are located in remote areas with limited access by standard and substandard roads. Should an emergency situation arise resulting from NNSS-related activities, including the transportation of hazardous and radioactive waste, it could result in the closure of the main transportation artery to that land. If a major (only) road into a reservation closes, numerous adverse social and economic impacts could occur. For example, Indian students who have to travel an unusually high number of miles to or from school could realize delays or separation from their families or support systems. Delays could also occur for regular deliveries of necessary supplies for inventories needed by tribal enterprises and personal use or medical supplies. Emergency medical services en route to or from the reservation, and purchases by patrons of tribal enterprises could be dramatically impeded. Potential investors interested in expanding tribal enterprises, as well as on-going considerations by tribal governments for future or current tribal enterprises, may significantly diminish because of the real and perceived risks from the transportation of hazardous and radioactive waste associated with NNSS-related activities.

Because of these potential transportation impacts relating directly to NNSS activities, the CGTO recommends DOE collaborate with potentially affected tribes to develop emergency response measures regarding transportation.

C.2.4 Socioeconomics

Indian people prefer to live in our traditional homelands. One primary reason for this is because Indian people have special ties to our traditional lands and a unique relationship with each other. When Indian people receive employment near our reservations, we can remain on the reservations while commuting to work. This pattern of employment tends to have positive benefits for both the Indian community and tribal enterprises like housing. The reservation Indian community has the participation of the individual and his (her) financial contribution. The individual payment for housing is tied to income level, so the more a person earns with the job, the more they pay to the tribal housing office, and thus making tribally sponsored housing more economically sustainable and attractive for tribal governments.

When employment opportunities decline on reservations, however, Indian families must often move away from our reservations to seek employment elsewhere. As Indian people move away, Indian culture is threatened because the number of families living on reservations declines. Tribal members who choose to relocate from their reservations impact reservation economies, school, housing, and emergency services. Both schools and economies are impacted because federal funding available to tribes is based on population statistics.

With local employment opportunities such as those offered by the NNSS for eligible tribal representatives, prices of tribal housing rise because they are based on income. If a positive balance between increased income and increased cost of living in tribal reservations is achieved, then both individual members and the tribe benefit from employment opportunities.

Tribal housing programs become jeopardized if vacancies occur in rental properties and dwellings remain unoccupied. If vacancies occur, tribal revenues and federal funding are adversely impacted and making it more difficult to expand housing programs in future years.

Additionally, vacant units require more maintenance. If tribal members are unavailable to occupy a tribal housing unit, then tribes make units available to non-Indians, and this, too, potentially impacts Indian culture. The increased presence of non-Indians on a reservation or in an Indian community reduces the privacy needed for the conduct of certain ceremonies and traditional practices. When non-Indian children are in constant interaction with Indian children, it creates a situation that potentially disrupts the perpetuation of cultural learning opportunities that occur in everyday life.

When Indian people move away from our reservations several dilemmas occur. Typically, Indian people experience a feeling of isolation from their tribe, culture, and family. When an Indian person relocates to an off-reservation area, the individual finds that there are fewer people of their tribe and culture around them. As a result, Indian people must decide on the appropriateness of practicing traditional ceremonies in the presence of non-Indian people. Indian people are continually torn between the decision to stay in the city or return to the reservation to participate in traditional ceremonies and interact with other tribal members. This dilemma occurs on a regular basis and potentially impacts the livelihood and cultural well-being of off-reservation employees and their families. When off-reservation individuals choose to return to our homelands to participate in traditional ceremonies or renew familial ties, they risk losing their jobs or being subjected to disciplinary actions against their children who attend public schools due to excessive absenteeism.

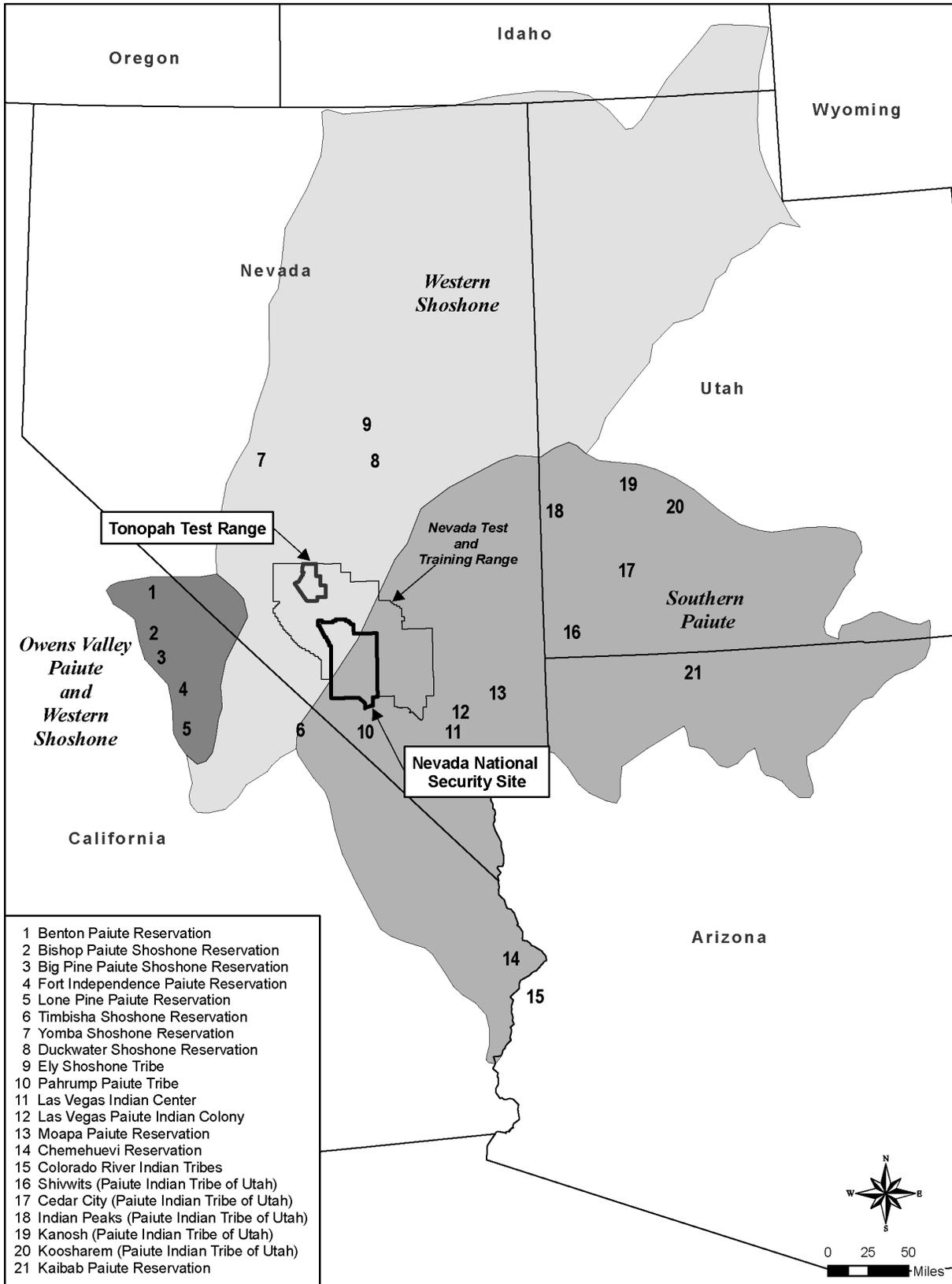


Figure C-1 American Indian Region of Influence for the Nevada National Security Site-Wide Environmental Impact Statement

Under federal and tribal law, American Indian children can be educated in tribally-controlled and federally-certified schools located on Indian reservations (also known as Indian Trust Land). Federal funds are available through the Indian Education Act for the education of Indian children. Compensation from the federal government is provided to any school district that has entered into a cooperative agreement with federally-recognized tribes, whether it be public, private, or an Indian-controlled school.

Small rural Indian reservations must have a sufficient number of people to generate an emergency response capability. The need for emergency services will decline as people move away from the reservation. Tribal members employed in these emergency service occupations may move away because of their marketable skills. Tribal revenues for administration, school, housing, and emergency services will be reduced accordingly, due to a decline in population size.

Many Indian reservations within the region of influence are located in remote areas with limited access by standard and substandard roads. Should an emergency situation occur resulting from NNSS-related activities, including the transportation of hazardous and radioactive waste, it could result in the closure of the main or only transportation artery to our land. If a major (only) road into a reservation closes, numerous adverse social and economic impacts could occur. For example, Indian students who have to travel an unusually high number of miles to or from school could realize delays. Delays also could occur for regular deliveries of necessary supplies for inventories needed by tribal enterprises and personal use. Emergency medical services en route to or from the reservation, and purchases by patrons of tribal enterprises could be dramatically impeded. Potential investors interested in expanding tribal enterprises, as well as on-going considerations by tribal governments for future tribal enterprises, may significantly diminish because of the real and perceived risks from the transportation of hazardous and radioactive waste associated with NNSS-related activities.

Although DOE continues to make strides to diversify their workforce, the CGTO strongly encourages DOE to enhance efforts to hire more Indian people and promote the hiring of Indian-owned businesses to mitigate socioeconomic impacts. We recommend the CGTO serve as a conduit to assist DOE and its contractors in identifying and facilitating employment opportunities for American Indians at the NNSS.

C.2.5 Geology and Soil

When visiting Area 5 of the NNSS in 2009, Indian people observed several traditional use minerals. In particular, Indian people have observed the presence of: (1) Chalcedony, (2) Obsidian, (3) Yellow Chert (otherwise known as Jasper), (4) Black Chert, (5) Pumice, (6) Quartz Crystal, and (7) Rhyolite Tuff. Other traditional use minerals are known to exist in other areas throughout the NNSS.

Minerals are culturally important and have significant roles in many aspects of Indian life. For example, the Chalcedony would have made an attractive offering, which could be acquired here and then left at the vision quest or medicine site located to the north on top of a volcano like Scrugham Peak. Upon return, traditional Indian people would bring offerings back to where we acquired offerings.

Obsidian is a glass-like stone produced by volcanoes. Indian people used a green volcanic glass during curing ceremonies that involved bleeding the patient. Volcanic glass found below Scrugham Peak was used in the first arrow making lessons for young men. Such lessons were held in small rock shelters found along the base of the basalt flow that constitutes Buckboard Mesa. Obsidian flakes were placed before important rock art panels as offering to the spirits that lived on the other side of the passageway provided by the panel. Small obsidian stones, commonly called Apache Tears, have been found on the face of Shoshone Mountain in southern Nevada. This massive deposit of obsidian stones is interpreted by Indian people as being provided by the mountain as both a spiritual backdrop and a location rationale for vision quests (Stoffle et al. 2001).

Volcanic rocks are used in a wide range of ceremonial activities. Indian women enhance the quality of breast milk by squirting it on heated rocks (Stewart 1940; Miller 2004). They are used for medicine society sweat lodge meetings (Zedeno et al. 2001: 146). Indian people call some volcanic rocks “grandfather stones,” a designation that reflects reverence as well as wisdom. Such rocks are sought in special places of power and carried over long distances to serve as the heated stones in sweat lodges.

During the evaluation of the 1996 FEIS, the CGTO noted repeated nuclear testing activities had resulted in severe disturbances to the geology and soils, or minerals, in large portions of the NNSS. This seemingly irreparable damage has made certain areas unfit for human use and inaccessible to American Indians who have relied on the earth and rocks for medicine and religious purposes. Sedan Crater, for example, continues to be a dead site; the spirits of the site and resources on it were destroyed in 1962 and the loss can still be felt by members of the CGTO.

The CGTO visited the NNSS in February 2010 and believes the geology and soils are in even poorer condition than they were during the 1996 FEIS due to the continued drought. Drought conditions, ground disturbing site activities, and damage to the soil from previous underground nuclear testing are significantly enhancing erosion. Negative impacts to these resources are long-lasting.

Activities that alter geologic structure also alter hydrologic systems. Such actions result in changes to important geologic and soil features that directly connect the tribes to their homelands in specific, spiritual ways. These changes require spiritual and cultural intervention necessary for restoring balance.

According to tribal elders, *“Bombs have melted the soil. It turned to glass. . . Severe disturbances are still out there. Everything is still suffering from it. . . All Tribes are in agreement that they want to be here to do what they can to help stop this terrible pressure put on the earth and to sing the songs to help the site and to say prayers. The land has its own songs and when you sing the songs to the land, it’ll sing back to you. These songs must be sung to help heal the earth and to restore harmony and balance.”*

In the 1996 NTS FEIS and in the 2002 NTS EIS Supplemental Analysis, the CGTO continued to express concerns about the removal of contaminated soils, and reasserted the need for religious leaders to conduct balancing ceremonies and healing prayers at these disturbed locations. The CGTO recommended that tribal representatives provide information about the re-vegetation of a portion of the Double Tracks Site located on the TTR. The CGTO maintains our involvement is still necessary for the Double Tracks site as well as for the Clean Slates site located at TTR; however, we are awaiting DOE’s approval to proceed. Because of the long lapse of time since the last visits, the CGTO believes it is necessary to revisit and re-evaluate site conditions.

In general, the mitigation measures proposed by DOE for geology and soils include erosion control through stabilization and re-vegetation. The CGTO is concerned about the unnatural erosion control methods proposed by DOE. In particular, the CGTO struggles with activities that require relocating rocks and soil from where originally placed by the Creator and are being used contrary to the Creator’s intention. Indian people know that relocating the soil in a culturally-unacceptable manner can cause adverse impacts to the environment such as the increased potential for noxious weed growth. This could potentially threaten nearby native vegetation and harm Indian people and wildlife that rely on this vegetation for survival.

Therefore, the CGTO recommends DOE implement culturally-appropriate stabilization efforts, and re-vegetation techniques using traditional ecological knowledge. Indian people stabilize our land by offering prayers to explain to the soil why we are removing it, and to thank it for its use. We then remove and protect the topsoil for future use. We replace the soil with dirt and gravel from nearby land only after offering prayers, and re-contour the land out of respect to the visual landscape. Indian people continually re-vegetate our land by offering prayers to bless the seeds and the plants so they will grow strong. We

place the seedlings in the direction of the morning sun, and then give thanks for the opportunity to plant them. Our key objective is to protect and restore our ancestral land. We encourage DOE to make provisions for Indian people to participate in its stabilization and re-vegetation to mitigate adverse impacts to geology and soils.

C.2.6 Hydrology

Indian people believe water is a living organism that is fully sentient and willful. The forces of power in the world move along channels and combine into specific nodes or places of power. A common set of these channels follows the path of water. These paths begin at the tops of mountains, especially the highest peaks. Snow and rain falls on these highlands and peaks after being called down by the mountain itself. From this beginning, the water moves downhill in rivulets, washes, and streams. The water often goes underground where it forms similar networks of channels moving in various directions, only somewhat corresponding to what non-native people call hydrologic basins. Water is often attracted to volcanic activity, thus producing significant power places like hot mineral springs.

According to tribal elders, “Water is life. Water is needed by the plants and animals. Indian people bless themselves with it. It purifies the body. Water is medicine and must be respected. American Indians need it to conduct religious ceremonies. It cleans the earth. It has a vast connection to the underground. Water shouldn’t be contaminated or it will die and lose its spirit.”

The CGTO knows we are in a drought because humans have disrespected the earth. It is affecting the balance of our earth’s climate. One inevitable implication of the current 100-year drought is that the surface water⁴ on the NNSS and immediate areas have diminished and become more sporadic. The modification and availability of surface water has the ability to affect all trophic levels on the NNSS.

Each of the discreet underground water basins, or hydrological basins, has its own origin story. One tribal story tells of a discreet underground water network created by Ocean Woman and where she placed her feet. According to this traditional story, there are points where the water emerges at the surface in springs and seeps. It was here that Ocean Woman placed her medicine staff into the ground and water emerged.

At other points, the surface water in low playa lakes meets the underground water channels. These points are like doorways between the surface world and the underworld.

Rain calling is a basic aspect of American Indian life and culture. Rain ceremonies from the spiritual world help facilitate rain production, and were led by rain callers, often called rain shamans or rain doctors in the English language. The rain caller calls upon the rain by singing songs, and is aided by his spirit helper, which is usually in the form of a mountain sheep. The mountains also had important roles in this activity, and were called up to interact with the clouds and the sky to call down the rain.

Even today, individual traditional Indian people can bring rain. One way this is done is 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 this person prays for rain, he tells the stinkbug why he is asking for rain.

If too much rain fell, certain precautions are taken. For example, the children are not allowed to shake willows that will be used for weaving or to kill frogs as this brings more rain. Hummingbirds were not killed for many reasons, but if they are killed, there will be flooding and lightning storms, with lightning killing the person who killed the hummingbird.

⁴ *Surface water is defined here 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 Snow Ceremony was performed to ensure a good winter with heavy snow fall. The spiritual leader, often called a weather doctor in the English language, would call the people together and meet at a special place in the mountains, sometimes near a pine nut gathering area. The spiritual leader would sing songs and offer prayers.

According to Indian tradition, the Snow Ceremony is performed during the late fall when the weather becomes cold. A part of this ceremony involves calling on the Snow Fleas. They represent a special category of American Indian environmental knowledge because they are almost invisible and live at the highest elevations on the mountains. The Snow Fleas are the ones that make the snow wet and absorb into the mountain. Without them, the snow is dry and evaporates quickly, and 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 surround the dancers and scatter the seeds as a gesture of fertilizing the earth. Water is called upon to nourish the soil and the seeds to make them fertile.

Because water is a powerful being it is associated with other powerful beings, such as water babies. Water babies are like the people of the water. They are highly respected by American Indian culture. If water is contaminated, the water babies will move to other areas that are not contaminated. Proof of their existence has been depicted in historic rock drawings throughout Nevada, including one pecked at the volcanic butte at Black Canyon, Pahranaagat Valley.

According to a tribal elder, *“Water babies are important to our culture. They are supernatural. They connect everything and you don’t want to disrespect them. The springs are all connected and they follow the water flow. Water babies are supernatural beings and are the guardians of the water. They can make sounds like a baby, and you don’t want to startle them because they can disturb life. We are taking their native environment away when we drill and contaminate the water. It angers them. When they get mad, there are adverse impacts to wildlife as they can drain you spiritually and physically.”*

Other tribal elders noted, *“Water has been disrespected and therefore it is disappearing. It is a medicine—used to heal and used for healing. It is used for ceremonial purposes in prayer. It is alive and must be awakened. It is spiritual--an essential component to begin religious ceremonies, and part of sweat ceremonies. Historically, water was pure and available to those who respected it. Bathing was a ritual. Now we do not trust the purity of the water because it has been disrespected. Hot springs have been affected and are no longer at the temperatures they used to be.”*

Playas

The CGTO knows that playas occupy a special place in American 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 do not occur anywhere else.

The CGTO knows that 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 how provisions were left there and at nearby springs by previous travelers at camping spots.

According to tribal elders, who were interviewed during previous NNSS evaluations, *“Indian people left caches in playa areas for people who crossed valleys when water and food was scarce. Frenchman 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. . . . Although some people continue to view Frenchman playa [and other playas] as a wasteland, the CGTO knows it is not.”

When humans respect water, it sustains them and life-forms on the surface, but when water is not treated well, it withdraws its life-giving support and returns to the underworld. The CGTO knows that the springs on Pahute and Rainier mesas and near Buckboard Mesa have dried up. Water has returned to the underworld because it has not been treated correctly by the DOE activities. There are places on the NNSS where the rain falls but does not nurture the plants and animals. The CGTO wants to be involved in DOE hydrology studies because if the water continues to be treated in inappropriate ways, it will totally remove itself from the NNSS.

To minimize some adverse impacts to hydrological resources, the CGTO recommends the DOE allow Indian people access to clean the *pohs* and tanks found throughout the NNSS. *Pohs* and tanks are naturally formed geologic features or basins used to bring and gather water from the rain and to nourish the plants and animals. The water within these *pohs* and tanks are central to our ceremonies to restore balance. By supporting the CGTO proposed project to clean the *pohs* and tanks, DOE will help reduce drought conditions. In turn, this project will provide spiritual, cultural, and ecological benefits to the land and the environment, thereby facilitating our obligation of spiritual and ecological rebalancing. Implementation of this process will require Indian people to identify project sites, to inventory and evaluate the conditions, resources, and features of the site, and to design and implement these mitigation measures.

The CGTO also recommends DOE implement mitigation measures for erosion and sediment control through culturally-appropriate stabilization efforts, and re-vegetation techniques using traditional ecological knowledge. Indian people stabilize our land by offering prayers to explain to the soil why we are removing it, and to thank it for its use. We then remove and protect the topsoil for future use. We replace the soil with dirt and gravel from nearby land only after offering prayers, and re-contour the land out of respect to the visual landscape. Indian people revegetate our land by offering prayers to bless the seeds and the plants so they will grow strong. We place the seedlings in the direction of the morning sun, and then give thanks for the opportunity to plant them. Our key objective is to protect and restore our ancestral land. The CGTO encourages DOE to make provisions for Indian people to participate in the stabilization and re-vegetation necessary to mitigate adverse impacts to hydrological resources.

C.2.7 Biological Resources

The CGTO knows the NNSS contains an ancient playa, surrounded by mountain ranges. The runoff from these ranges serves to maintain a healthy desert floor and environment. Animals frequent the area, and there are numerous animal trails. Animals and the places where they live play a significant part in Indian history and lifestyle. The CGTO knows Indian people have lived on these lands since Creation value all plants and animals, yet some of these occupy more cultural significance in our lives. It is widely known that many Indian people still collect and use plants and animals that are found within the NNSS region. We describe these plants, animals, and insects in this section in an effort to demonstrate their importance to our well-being and survival, and their role in maintaining ecological balance to our Holy Land.

The CGTO knows, based on previous DOE-sponsored ethnobotany studies, that there are at least 364 American Indian traditional use plants on the NNSS (see Table C–1). Plants are still used for medicine, food, basketry, tools, homes, clothing, fire, and ceremony – both social and healing. Sage is used for spiritual ceremonies, smudging⁵ and medicine. Indian rice grass and wheat grass are used for breads and puddings. Joshua tree is important for hair dye, basketry, foot ware, and rope. Globe mallow had traditional medicine uses, but in recent times is also used for curing European contagious diseases.

⁵ *Smudging is a spiritual cleansing involving the use of smoke from certain plants during prayers and ceremonies.*

In order to convey the American Indian meaning of these plants, a series of ethnobotany studies were conducted and the findings used to establish 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 analyses and other agency decisions could be assessed from an American Indian perspective.

The CGTO knows, based on previous DOE-sponsored ethnofauna studies, there are at least 170 Indian use animals on the NNSS (see Table C-2). All are culturally important to Indian people.

The CGTO knows if they care for the earth and its resources, the Creator will always provide for them. The NNSS area was among the tribes' places to hunt and trap a variety of animals. It is known that special leaders within each tribe would organize large hunts where many Indian people participated. The Indian people would use these animals for many purposes, including food, bones for tool making, fur for warm blankets, ceremonial purposes, and described in traditional winter stories.

Indian people refrain from eating coyote, wolves, and some birds because these animals are fundamental to stories and songs that teach us life lessons to heal, to build character, and to become better people.

The relationships between the animals, the Earth, and Indian people are represented by the respectful roles they play in the stories of our lives then and now. For example, the NNSS contains a valley where an important spiritual journey occurred. It involved Wolf (*Tavats* in Southern Paiute, *Bia esha* in Western Shoshone, *Wi gi no ki* in Owens Valley Paiute) and is considered a Creation story. Out of respect to our traditional teachings, only parts of this story are 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 Range as well as to lands now called the NNSS. These areas comprise the home of Wolf, whose spirit is still present and watches over Indian people and our Holy Land.

Both the mountain sheep and the stink bug are traditionally used to call the rain. Rain calling is a basic aspect of American Indian life and culture. Rain ceremonies from the spiritual world help facilitate rain production, and were led by rain callers, often called rain shamans or rain doctors in the English language. The rain caller calls upon the rain by singing songs, and is aided by his spirit helper, which is usually in the form of a mountain sheep. Rain could also be called by turning a stinkbug⁶ on his back. The rain will come if the stinkbug allows a person to tickle his belly with a small stick. As this person prays, he tells the stinkbug why he is asking for rain.

Willows, frogs and hummingbirds are also important to Indian people and our respect for the rain. If too much rain fell, certain precautions are taken. For example, the children are not allowed to shake willows that would be used for weaving or to kill frogs as this brings more rain. Hummingbirds are not killed for many reasons, but if they are killed, there will be flooding and lightning storms, with lightning killing the person who killed the hummingbird.

The Snow Fleas are important to Indian people and our Snow Ceremony. The Snow Ceremony is performed in the fall to ensure a good winter with heavy snow fall. The spiritual leader, often called a weather doctor in the English language, calls the Indian people together and meets at a special place in the

⁶ Called "Bee-voos" in Western Shoshone and Wu-who-koo-wechuts in Southern Paiute.

mountains, sometimes near a pine nut gathering area. The spiritual leader sings songs and offers prayers. A part of this ceremony involves calling on the Snow Fleas. They represent a special category of American Indian environmental knowledge because they are almost invisible and live at the highest elevations on the mountains. The Snow Fleas are the ones that make the snow wet and absorb into the mountain. Without them, the snow is dry and evaporates quickly, and 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. A spiritual person sings songs to bring whirlwinds, which surround the dancers and scatter the seeds as a gesture of fertilizing the earth. Water is then called upon to nourish the soil and the seeds to make them fertile.

If any of these plants, animals, and insects, continue to be disrespected, then the hydrological systems and weather patterns will remain unbalanced. The CGTO knows this unbalance has resulted in the drought our land and its resources continue to suffer.

The current 100-year drought has increasingly stressed the physical and spiritual nature of the plants and animals on the NNSS. Its environmental impacts are unprecedented in the history of the operation and management of these lands. The CGTO knows the 100-year drought has modified the abundance and distribution of all animals and plants. The quality, quantity, and distribution of indigenous plants, animals, and insects necessary to sustain a healthy environment and to maintain a productive animal habitat are clearly affected.

Water -- both as free flowing springs and absorbed by plants and distributed to animals -- has diminished. Certain springs have dried up making animals travel into other unfamiliar lands. Food foraging becomes difficult and land dries up. Wildlife has less body fat, which results in shorter hibernation cycles. Indian people have observed that ground squirrels are becoming cannibalistic to survive. Other animals are changing their habits as the environment continues to be impacted by this drought. For example, rabbits are now forced to eat unusual foods like Yucca. According to one tribal elder, "*The cries of some birds have changed since the drought began.*"

Two discrete efforts in which the CGTO and DOE can work collaboratively to manage biological resources include pine nut harvesting, and the relocation and reintroduction of the big horn sheep and desert tortoise.

Pine Nut Harvesting

Pine nut harvesting areas present a unique opportunity to address significant cultural and ecological problems. In times past, the pine nut trees were cared for by pruning and whipping to encourage production and reduce dead wood. The areas under and around the trees were kept clean by using these materials during routine visits, and other traditional use plants in the area were cared for as well. Ceremonies and cleaning activities occurred in the spring and fall each year. The removal of Indian people from accessing these areas has resulted in limitations to passing on traditional cultural and ecological knowledge, and in unhealthy ecosystems. The contemporary concerns with wildfires and invasive species such as cheat grass in the Great Basin are issues that can be addressed proactively through the reintroduction of traditional pine nut harvesting practices. This project can provide spiritual, cultural, and ecological benefits to the CGTO, DOE, and the environment, consequently fulfilling the primary goal of rebalancing. Implementation of this project will require Indian people to identify project sites, to inventory and evaluate the conditions, resources, and features of the sites, and to design the restoration plan. This project would involve annual activities and monitoring of site conditions so that potential benefits can be measured.

Part of the mitigation measures presented by DOE in Section 7 of the SWEIS includes notifying the U.S. Fish and Wildlife Service (FWS) of incidental taking of desert tortoises. The desert tortoise is culturally-significant to Indian people because of its healing powers, longevity, and wisdom. It is integral to our traditional stories, well-being and perpetuation of our native culture. Incidental taking of this traditionally-important animal is particularly disturbing to native people. Accordingly, the CGTO must be notified concurrently with the FWS so that we may conduct the necessary balancing ceremonies.

According to information presented in the SWEIS, DOE will conduct preactivity surveys for cultural and biological resources prior to project initiation. If biological resources such as the desert tortoise or its habitat are determined to be present at the proposed project site, and avoidance of these is determined by DOE to be impossible, it is the CGTO's understanding from the information presented in the SWEIS that project biologists will relocate and reintroduce these impacted biological resources elsewhere. Over the past 14 years, various initiatives have been undertaken to relocate and reintroduce certain animals without participation from the CGTO. In particular, this has occurred with the desert big horn sheep and the desert tortoise near the southern portion of the NNSS.

Relocation and reintroduction of animals that require their adaptation to unfamiliar habitats are considered highly sensitive religious acts and require oversight by Indian people. Relocating animals from where originally placed by the Creator causes tremendous stress to the animals. They are in a new environment, where food and water sources are unknown. These animals have been improperly removed with disregard for their families and all they know. They must now seek the songs, prayers and voices of the Indian people, as they are no longer in their homeland. They are isolated. This depletes their spirit. Without cultural intervention, relocated animals are unable to reproduce, and often die of premature deaths due to loneliness, thirst and hunger. Therefore, animals should not be relocated unless absolutely necessary.

The desert bighorn sheep and the desert tortoise are both culturally sensitive animals to Indian people. Among their many special qualities, when used ceremonially, they have the ability to bring rain and reduce drought impacts. The reintroduction of desert bighorn sheep is a critical issue for us. For relocation and reintroduction of animals to be successful, it is essential to have tribal representatives involved throughout this process.

In the 2008 Draft NTS EIS Supplemental Analysis, the AIWS presented information regarding the successful reintroduction of a gray wolf in Idaho during the late 1970's, which was a collaborative effort between American Indians and a Federal agency. On the day of release, a Federal liaison unlatched the door of the cage and the animal scrambled out. Waiting for the wolf was an American Indian holy man in traditional regalia, sitting on a horse and watching. The wolf and man gazed at each other and the man spoke words welcoming the wolf back to its new home. The wolf stood for a few more seconds and accepted the holy man's encouragement and blessing. Then the wolf turned and ran into the forest. Everyone present was very moved by the welcoming back ceremony. They knew that was the right thing to do. The CGTO believes collaborative projects such as this underscores the need for American Indian involvement whenever plant or animal species transplanted from other locations are reintroduced to the NNSS area.

Once reintroduced, the desert bighorn sheep and the desert tortoise must be provided all of the resources and considerations necessary to encourage them to remain in their new location. Resources include spiritual and cultural aspects that must be addressed by tribal specialists and cultural experts, and consideration of other species in the area that may be affected negatively by these relocated animals, or may compete with and impede successful rebalancing. This project can provide spiritual, cultural, and ecological benefits to the CGTO, DOE, and the environment, consequently fulfilling the primary goal of rebalancing. Implementation of this project will require the appropriate cultural experts to identify projects sites, to inventory and evaluate the conditions, resources, and features of the sites, and to design the

restoration plan including off-site resources necessary to support project sites such as landings or birthing places. This project would involve annual activities and monitoring site conditions.

The CGTO recommends DOE mitigate adverse impacts to biological resources through avoidance, culturally-appropriate re-vegetation efforts, reintroduction of native animals, and traditional plant and animal management methods. Indian people have extensive, traditional ecological knowledge and deep concern for the biological resources of the area and should participate directly with DOE to mitigate adverse impacts and protect these resources.

According to tribal elders, “Prior to re-vegetation efforts, we talk to the land to let it know what we plan to do and ask the Creator for its help. We choose our seeds from the sweetest and the best plants, and store them for the winter to dry. When the winter is over, we place the seeds in a moist towel or sock and allow the new plant to sprout. We then plant the sprouts into small containers with soil until they are ready to transplant into the ground. This is a long and delicate process, requiring patience and knowledge passed down from our ancestors. If the plants are struggling to grow, we tag them and move them to face the same direction as the sun.”

The DOE would benefit from this knowledge to enhance their re-vegetation efforts. The CGTO knows DOE struggles with the success rates regarding the density and diversity of native plants during their re-vegetation efforts. A co-stewardship approach to this land with the tribes would enable DOE to enhance their re-vegetation efforts, saving time, money, and resources.

C.2.8 Air Quality and Climate

The CGTO knows that the air is alive. The Creator puts life into the air, which is shared by all living things. When a child is born, he pulls in the air to begin its life. The mother watches carefully to make sure that the first breath is natural and that there is no obstruction in the throat. It is believed if the day of birth is a windy day, it is a good day and the child will have a good life.

According to tribal elders’ perspectives from Area 5 NNSS activities, “. . . You can listen to the wind. The wind talks to you. Things happen in nature. Our people had weather watchers, who are kinds of people who will know when crops and things should be done. They watch the different elements in nature and pray to ask the winds to come and talk about these things. Sometimes you ask the north wind to come down and cool the weather. The north wind is asked to blow away the footsteps of the people who have passed on to the afterlife. That kind of wind helps people, it is positive. The wind also brings you songs and messages. Sometimes the messages are about healing people, a sign that the sickness is gone now from the person, or that it is coming to get that sickness to take it away, or it is coming to bring you the strength that you will need to deal with the illness.”

Air can be destroyed, causing pockets of dead air. There is only so much alive air that surrounds the world. If you kill the living air, it is gone forever and cannot be restored.

Dead air lacks the spirituality and life necessary to support other life forms. Airplanes crash when they hit dead air. During a previous CGTO evaluation of the area, one member of the CGTO compared this Indian view of killing air with what happens when a jet flies through the air and consumes all of the oxygen, producing a condition where another jet cannot fly through it.

As one tribal elder noted, “The spiritual journey of the Southern Paiute Salt Songs are affected as the air quality is not the same as in the days of old. This Salt Singer wonders what is going to happen if the situation isn’t corrected. Southern Paiutes need this spiritual journey to ascend their deceased to the next life.”

As people are emitting things into the air that are unnatural, such as radiation from atomic blasts or dust and debris from decontaminating and decommissioning old NNSS buildings, climatic changes such as droughts are occurring because the air is being disrespected. As the air continues to be disrespected, it perpetuates and intensifies imbalance throughout the environment. This impacts many resources, including the land, soil, water, plants, and animals.

Dust devils in various forms and sizes are culturally significant to Indian people and known to bring harm. The CGTO knows the frequency and intensity of dust devils have increased within the NNSS and the surrounding area. Dust devils contain negative energy, and can disperse hazardous and radioactive contaminants from the soil at the NNSS. Their spirits can bring harm if the air is disrespected and if you watch it or allow them to come near or pass through you. If this occurs, a person will become ill and must seek cultural intervention to heal.

Some Indian people who were present during aboveground nuclear tests at the NNSS believe that the sickness they have come from the radiation. To some of these people, the effects of the radiation were in addition to what happened when the air itself was killed. Some tribal elders believe that even when the plants survived the effects of radiation, the dead air killed many of them or made some lose their spiritual power to heal things.

As noted by tribal elders, “Sheep and other animals are being born out of season, which places them at greater risk from predators and from living full lives. Consequently, their loss adversely impacts our cultural survival, as many of our stories and traditions surround these animals. Weather is out of balance. For example, when it snows, one can also hear thunder. Native people observe the changed nature of the vegetation and blame the atmospheric change on the air quality from the bomb testing on the NNSS.”

The CGTO recognizes that climatic change is occurring and will continue to impact the natural resources of the NNSS and the surrounding region. When rain gauge data are averaged over a decade they can mask the reality that plants and animals are adjusted to regular cycles of rain and snow. Isolated heavy rain events can increase the annual rainfall amounts, but are largely not useful for sustaining life. Plants and animals need the climate to return to its historic, normal annual rainfall that is more evenly dispersed by season.

The CGTO knows that ceremonies have historically helped manage the climate in the NNSS region. Unfortunately, we have not been able to perform these ceremonies since the NNSS area was used for nuclear testing and our Holy Land continues to suffer. To facilitate the healing of this area, DOE must make provisions for the CGTO to access the land and perform these rituals, which are further described below.

Calling the Rain

Rain calling is an important aspect of American Indian life and culture. Rain ceremonies associated with the spiritual world help facilitate rain production, and are led by rain callers, often called rain shamans or rain doctors in the English language. The rain caller calls upon the rain by singing songs, and is aided by his spirit helper, which is usually in the form of a mountain sheep. The mountains also had important roles in this activity, and are called up to interact with the clouds and the sky to call down the rain.

Individual traditional Indian people can also bring rain. This is done by turning a stinkbug⁷ on his back. The rain will come, provided the stinkbug allows a person to tickle his belly with a small stick. As this person prays, he tells the stinkbug why he is asking for rain.

If too much rain falls, certain precautions are taken. For example, the children are not allowed to shake willows that would be used for weaving or to kill frogs as this brings more rain. Hummingbirds are not killed for many reasons, but if they are killed, this brings on flooding and lightning storms, with lightning killing the person who killed the hummingbird.

Snow Making Ceremonies

The Snow Ceremony was performed in the fall to ensure a good winter with heavy snow fall. The spiritual leader, often called a weather doctor in the English language, would call the people together and meet at a special place in the mountains, sometimes near a pine nut gathering area. The spiritual leader would sing songs and offer prayers.

According to Indian tradition, the Snow Ceremony is performed during the late fall when the weather becomes cold. A part of this ceremony involves calling on the Snow Fleas. They represent a special category of American Indian environmental knowledge because they are almost invisible and live at the highest elevations on the mountains. The Snow Fleas are the ones that make the snow wet and absorb into the mountain. Without them, the snow is dry and evaporates quickly, and 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 surround the dancers and scatter the seeds as a gesture of fertilizing the earth. Water is called upon to nourish the soil and the seeds to make them fertile.

Balancing Ceremonies

The earth needs to be rebalanced. The CGTO knows that the air, the climate and all of the Earth's living resources are struggling to adapt and recover from the current drought. As Indian people, we have a responsibility to help them recover and regain balance. According to tribal elders, *"We need to access strategic locations to restore the climate. We need access to conduct balancing ceremonies for the well-being of the people and the well-being of the future—access to the past, the present, and the future. The prayers are far-reaching, and include the environment, people, and everything. The ceremonies and prayers are needed to renew the earth and should be conducted semi-annually by Indian people."*

We recommend that Indian people perform balancing ceremonies to try to restore the balance to the air, the climate, and the Earth's living resources. Ideally, balancing ceremonies are done in the spring and fall, to pray for good crops and to pray for plentiful harvest, respectively. At a minimum, DOE should make arrangements for Indian people to access the NNSS annually to perform these ceremonies. Renewal ceremonies, or balancing ceremonies, such as these have successfully been conducted with other federal agencies for many years, and we strongly encourage DOE to do the same.

C.2.9 Visual Resources

All landforms within the NNSS have high sensitivity levels for American Indians. The ability to see the land without the distraction of buildings, towers, cables, roads, and other objects is essential for the spiritual interaction between Indian people and our traditional lands.

⁷ Called "Bee-voos" in Western Shoshone and Wu-who-koo-wechuts in Southern Paiute.

Views from places are an important cultural resource that contributes 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 ceremony. Views can be of any landscape, but more central viewscapes are experienced from high places, which are often the tops of mountains and the edges of mesas. Indian viewscapes tend to be panoramic and are made special when they contain highly diverse topography. The viewscape panorama is further enhanced by the presence of volcanic cones and lava flows.

Viewscapes are tied with songscapes and storyscapes especially when the vantage point has a panorama composed of multiple locations described by traditional songs or stories. Our traditional songscapes and storyscapes can be compromised if projects like geothermal energy development are pursued. If geothermal resources are altered, our songs and stories will be impacted and will no longer accurately reflect key traditional aspects of the viewscape.

The CGTO recognizes the cultural significance of viewscapes and have identified a number of these on the NNSS. The Timber Mountain Caldera contains a number of significant vantage points with different panoramas including but not limited to Scrugham Peak, Shoshone Mountain, and Buckboard and Pahute Mesas. The CGTO feels revisiting sites within the viewscapes are essential to Indian people to interact with the land, communicate with the spirits who watch over the land, conduct religious ceremonies with prayers and songs, and monitor each site's condition. Special considerations should be given to tribal elders and youth to provide an educational experience and reinforce positive connections with our culture.

Central to the Indian experience of viewscapes is isolation and serenity in an uncompromised landscape. If construction and operation of the proposed activities proceed in a culturally-inappropriate manner, then visual resources within the NNSS area will be adversely impacted, further perpetuating an unbalanced environment. To restore balance to the environment and its visual resources, the DOE must provide access for Indian people to conduct religious and cultural ceremonies to fulfill traditional obligations. In this manner, we can restore and preserve our spiritual harmony as a whole.

The CGTO knows many of the activities described under the proposed action and alternatives, such as those associated with facility construction and environmental restoration, will adversely impact visual resources. For Indian people, the adverse impact to visual resources will most certainly impact the spiritual harmony of the environment as a whole. Facility construction and operation will impede visual resources, and affect the solitude and cultural integrity of the land.

Visual resources may be negatively impacted if proposed solar enterprise zones and geothermal projects are pursued. The CGTO must be part of any additional, future discussions of these projects at a minimum as these may impact visual resources and may degrade traditional and cultural ceremonies.

According to the information presented by DOE in the SWEIS regarding the no action alternative, the CGTO knows the NNSS has been selected to pursue the development of the solar enterprise zone within Area 25. We also understand the project schedule presented in the Memorandum of Understanding between DOE and DOI initiates environmental evaluations in July 2010. The CGTO must be part of any additional, future environmental assessments as this proposed activity will adversely impact visual resources and degrade traditional and religious ceremonies. The visual quality of the landscape will lose its integrity and the viewscape will be marred from the introduction of considerable infrastructure directly visible from U.S. 95. For Indian people, an adversely impacted resource will most certainly impact the spiritual harmony as a whole. Therefore, Indian people will need to perform ceremonies, offer prayers, and sing songs in an effort to mitigate these impacts. If construction proceeds, DOE will need to make provisions for Indian monitors to assess the construction footprint and implement traditional techniques that require minimum ground-disturbing actions.

Fundamentally, the CGTO struggles with the idea of pursuing solar energy as a “cleaner” form of energy and the potential impacts to the Sun. According to some tribal elders, *“The Sun is like a big battery. Once you drain its power, will it die? For those spiritually connected to the Sun, we are concerned about unnaturally harnessing it’s power. We know the Sun was given only so much energy. If the Sun is drained, how will it be replenished? If the Sun goes away, everything will die. The stories and activities of our ancestors are tied greatly to the Sun. Today, our prayers and ceremonies still travel or rely on its strength.”* Because of the complexity and potential implications to the environment, to the cultural and visual landscape, and for our own survival, it is imperative that DOE support an ethnographic study to evaluate the cultural implications of pursuing solar energy on the NNSS. The CGTO also recommends Indian people provide their expertise in the development of the Solar Enterprise Environmental Assessment.

Although DOE proposes to mitigate visual resource impacts by painting structures to reduce visibility, the CGTO knows additional mitigation measures are necessary. The CGTO recommends that landscape modifications, including those associated with environmental restoration activities, be done in consultation with American Indians. Specifically, we recommend DOE make provisions for Indian people to access the land and culturally assess its visual resources. DOE should employ Indian people to participate in annual monitoring of land disturbing activities throughout the duration of the project. The CGTO should also participate in restoring the land, and concealing infrastructure using traditional Indian re-vegetation methods, as we have described in Section C.2.7. Finally, we strongly encourage DOE to make provisions for Indian people to conduct ceremonies, and offer prayers and songs in an effort to re-balance this adversely impacted resource.

C.2.10 Cultural Resources

American Indians consider cultural resources to include not only archaeological remains left by their ancestors but also natural resources and geologic formations in the region, such as plants, animals, water sources, minerals, and natural landforms that mark important locations for keeping their history alive and for teaching their children about their culture.

The NNSS area and nearby lands were significant to the Western Shoshone, Southern Paiute, and Owens Valley Paiute and Shoshone people. The lands were central in the lives of these people and 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. Indian people believe that the natural state of their traditional lands was what existed before European contact, when Indian people were fully responsible for the continued use and management of these lands.

The withdrawal of Nevada’s lands for military purposes in the 1940’s, followed by use of the land by the DOE continued the process of Euroamerican encroachment on Indian lands. Land-disturbing activities followed, thus causing some places to become unusable again for Indian people. On the other hand, many places were protected by this land withdrawal because “pothunters” were kept from stealing artifacts from rock shelters and European animals were kept from grazing on Indian plants. The forced removal of Indian people from the land was combined with their involuntary registration and removal to distant reservations in the early 1940s. Indian people were thus removed from lands that had been central to their lives for thousands of years.

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 interconnected. 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. The following is a list of studies that are required for a complete American Indian assessment:

1. Ethnoarchaeology – the interpretation of the physical artifacts produced by our Indian ancestors
2. Ethnobotany⁸ – the identification and interpretation for the plants used by Indian people
3. Ethnozoology⁹ – the identification and interpretation of the animals used by Indian people
4. Rock art – the identification and interpretation of traditional Indian paintings and rock peckings
5. Traditional Cultural Properties – the identification and interpretation of places of central cultural importance to a people, often referred to as “power places” by Indian people
6. Ethnogeography – the identification and interpretation of soil, rocks, water, and air
7. Cultural landscapes – the identification and interpretation of spatial units that are culturally and geographically unique area for American Indian people. Examples of these include songscapes, storyscapes, and spiritual trails.
8. Ethnoastronomy – includes the identification and interpretation of the universe within and beyond the earth’s atmosphere, and its influence on American Indians and their environment.

When all of these subjects have been studied, American Indian people assess the information and answer three critical questions: (1) What is the natural condition of this portion of our traditional lands? (2) What has changed due to NNSS activities? And, (3) What impacts will proposed activities have on either furthering existing changes in the natural environment or restoring our traditional lands to their natural condition? Tribal governments and organizations must then have the opportunity to review the recorded thoughts of its elders to determine their support of the conclusions.

DOE has supported several cultural resource studies at the NNSS, most occurring as a result of recommendations made by the CGTO in the 1996 NTS FEIS and commitments made by DOE in the subsequent Record of Decision. Many of these studies are cited throughout Appendix C of the SWEIS. These studies were also designed to comply with various federal laws and executive orders, including AIRFA, Native American Grave Protection and Repatriation Act, and Executive Order 13007, *Indian Sacred Sites*.

Through these studies, the CGTO confirmed that American Indians used traditional sites in the NNSS area to make tools, stone artifacts, and ceremonial objects; many sites are also associated with traditional healing ceremonies and power places. Several areas in the NNSS region are recognized as traditionally or spiritually important. For example, Fortymile Canyon was an important crossroad where trails from such distant places as Owens Valley, Death Valley, and the Avawatz Mountain came together. Black Cone, in Crater Flat, is an important religious site that is considered to be an entry to the underworld. Alice Hill, (refine location with acceptable language) is also regarded as a culturally important place (AIWS 2005). Prow Pass was an important ceremonial site and, because of this religious significance, tribal representatives have recommended that DOE avoid affecting this area (Stoffle et al. 1988). Oasis Valley was another important area for trade and ceremonies. In 1993, tribal members visited a rockshelter site containing perishable basketry and crookneck staff on the NNSS, and recommended that the items be left in place, with annual monitoring to assess their condition. Other areas are considered important based on the abundance of artifacts, traditional-use plants and animals, rock art, and possible burial sites.

⁸ *Ethnobotany is sometimes also referred to as ethnoflora.*

⁹ *Ethnozoology is sometimes also referred to as enthofauna.*

The CGTO knows the distribution and density of sites has not changed since the 1996 NTS EIS. We know the largest number of recorded cultural resources is in the northwest part of the NNSS, on and around Jackass Flats, Yucca Mountain and Shoshone Mountain. This is because numerous activities were conducted on those portions of the NNSS within the last 14 years, less attention has been directed to these regions, and adverse impacts to these areas have been minimized.

The CGTO recommends tribal visits to monitor the state of cultural sites located within the NNSS and to offer blessings. The CGTO also recommends tribal visits to areas that have been designated for repatriation, such as the Timber Mountain area, and periodic assessments conducted to comply with NAGPRA. According to a tribal elder, *“When Indian people are buried, they are never meant to be disturbed. Laws, such as NAGPRA, are difficult for Indian people to implement because they force us to come up with blessings and methods to address something abnormal and contrary to ceremonial intent.”*

C.2.11 Waste Management

We continue to strongly oppose the transportation, storage and disposal of radioactive waste at the NNSS; however, Indian people must continue to fulfill our birth-rite obligation to care for our Holy Land and do what we can to try to restore balance to Area 5 and other contaminated locations.

The CGTO knows the NNSS is used to dispose of low-level radioactive waste and low-level mixed radioactive waste (i.e., containing certain hazardous wastes) in Area 5, and non-hazardous waste and debris. Indian people hold traditional and scientific views of radioactive materials and waste. As an example, the former builds on the view that all resources—including the rocks—are alive. Radioactive rocks are powerful, but they can become “angry rocks” if they are removed without proper ceremony, used in a culturally inappropriate way, disposed of without ceremony, or placed where they do not want to be (Stoffle et al. 1989a and 1990c). The practice of dealing with “bad medicine” or neutralizing negative forces is a part of our traditional culture. Indian knowledge and use of radioactive rocks, or minerals, in the western United States goes back for thousands of years. Areas with high concentrations of these minerals are called dead zones. Such areas contain places of power or energy and can only be visited or certain minerals used under the supervision of specially-trained Indian people, who are sometimes referred to in the English language as a shaman or medicine man (Stoffle and Arnold 2003). Therefore, the DOE would benefit from this knowledge if applied correctly.

A head Salt Song singer and religious leader for the Chemehuevi Paiutes once explained the impacts of radiation as follows:

“Our spirits will paint their faces and become angry because they are disturbed by the presence of angry rocks. When we are out there now, it is still and peaceful; it is like being in a church chamber. Radiation will disturb the harmony . . . It will no longer be the same. It will be violated. All the previous songs stories that have been shared in the area will be disturbed. Once a song is sung it continues to be there. When you sing a song you are on the trail – your spirit is making that trip. You are describing where you are at and what is happening. You tell in the song where you are and what you are doing. When people go to these areas today a person can get a song. Previous songs live in the mountains in the canyons. If you were a gifted person that was meant to be an owner of the song you can actually hear it. . . . There are still areas today where you can go and hear the song. Some people hear the songs and it scares them because they do not know what it is. Young people need to be told what it is they are hearing. The places need to be protected from damage so the songs continue to be there for future generations. It is like a delayed echo that never goes away and can come again and again to new people.”

We are very concerned about the tritiated liquids disposed at the NNSS and treated by evaporation into the air from ponds, open tanks, and sewage lagoons. The CGTO is concerned about the ponds drying up and the airborne residue adversely impacting the environment.

According to tribal elders,

“Evaporating tritium like this is not a natural process. The natural environment is altered. The wildlife could drink this contaminated water, birds could land on the ponds, insects and vegetation can become contaminated. This contamination would then adversely impact the food chain. We are concerned the animals will become contaminated or sick if they ingest other contaminated species in the food chain. How can they clean themselves to survive? How can DOE contain this contamination?”

We are also concerned about adverse impacts to the land, animals, plants, water, air, and insects from the waste and noise generated during explosive waste detonation at the Area 11 Explosives Ordnance Disposal Unit. Indian people have witnessed the destructive force of explosive detonations and the resulting destruction to the environment. For example, animals relocate to unfamiliar habitats, which adversely impact their survival rate. Air is adversely impacted, increasing the occurrence of dead air¹⁰. Noise and vibration from the detonations impact the insects, and disrupt vegetation growth.

Indian people know if the earth and environment are being disrespected, such as in Areas 5 and 11, the spirits that protect and watch over these can become upset and respond negatively. This can result in the characteristics of the environment changing, causing animals to leave their natural habitats, reducing the native vegetation¹¹, further reducing water resources, and increasing occurrences of perceived mishaps.

The CGTO is also concerned about transporting hazardous and radioactive waste through American Indian homelands and adversely impacting their health and environment. Many of the Indian land within the region of influence are located in remote areas with limited access by standard and substandard roads. Should an emergency situation resulting from NNSS related activities including the transportation of hazardous and radioactive waste occur, it could result in the closure of a major reservation road. If a major (only) road into a reservation is closed, numerous adverse social and economic impacts could occur. For example, Indian students who have to travel an unusually high number of miles to or from school could realize delays. Delays also could occur for regular deliveries of necessary supplies for inventories needed by tribal enterprises and personal use. Purchases by patrons of tribal enterprises and emergency medical services in route to or from the reservation could be dramatically impeded. Potential investors interested in expanding tribal enterprises and on-going considerations by tribal governments for future tribal developments may significantly diminish because of the perceived risks associated with NNSS related activities including the transportation of radioactive waste.

Finally, the CGTO struggles with the ethics of relocating radioactive waste from other American Indian lands so those people can live without fear of radioactivity. We are greatly concerned about the adverse spiritual, environmental, and health impacts associated with relocating these angry rocks from their current locations to our Holy Land. We believe transporting these to our land perpetuates animosity and discord among tribal governments. We strongly encourage DOE to host a break out session among the culturally affiliated tribes associated with the NNSS and the multi-state waste generator facilities during the 2011 NNSS Generator Workshops to facilitate further discussion and understanding, and each, annual generator workshop thereafter.

¹⁰ For additional information on dead air, see Appendix C.2.8.

¹¹ Reducing the natural vegetation may result in the introduction of noxious weeds.

The CGTO recommends DOE allocate funds and resources for Indian people to conduct systematic ethnographic studies of these waste management programs. If DOE selects the expanded use alternative, the CGTO must conduct a cultural assessment of the Area 3 RWMS prior to new use to mitigate potential impacts.

The CGTO supports DOE's intention to minimize waste within the NNSS area. We encourage the DOE to partner with us to develop and participate in DOE's waste minimization and pollution prevention programs. In particular, the waste minimization efforts described in the SWEIS regarding land commitments must include members of the CGTO to ensure the cultural implications of these decisions are considered prior to implementation.

C.2.12 Human Health

As discussed previously in Section C.2.7, Biological Resources, it is widely known that many tribal representatives still collect and use plants and animals found within the NNSS region. Many of the plants and animals cannot be gathered or found in other places. Consumption patterns of Indian people who still use plants and animals for food, medicine, and other cultural or ceremonial purposes force the CGTO to question if its member tribes are still being exposed to radiation, and possibly hazardous waste located at the NNSS.

The CGTO is aware that, typically, risk assessment models have been used and accepted as a means of mathematically calculating potential risks and assessments to human health and safety. While these models project the potential impacts based on a worst-case scenario, they do not consider the perceived risks which are considered meaningful to Indian people. The lack of knowledge of an unfamiliar concept can lead to a feeling of perceived danger. A perceived danger or hazard associated with something can be very real to Indian people. Indian people view things holistically and believe that everything is interrelated resulting in a cause-and-effect model. This is contrary to scientific models that tend to compartmentalize things from a mathematical point of view, calculating potential risks to health and safety. This viewpoint often does not consider perceived risks, which play an integral role to American Indian cultural beliefs. To address this important issue, DOE listened to the recommendations from our people and commissioned a study in 1998 to evaluate perceived risks of radiation to Indian people. (See C.2.5 for additional information regarding this study.)

Emergency Preparedness

The CGTO knows that some of our member tribes are within close proximity to the NNSS and TTR. These Indian people will be directly, adversely, and potentially irrevocably impacted if an emergency occurs from DOE activities.

Indian reservations within the region of influence are located in remote areas with limited access by standard and substandard roads. Should an emergency situation resulting from NNSS-related activities, including the transportation of hazardous and radioactive waste occur, it could result in the closure of the main transportation artery to that land. If a major (only) road into a reservation closes, access to hospitals and medical facilities could be impeded or cut off entirely. Delays could occur for regular deliveries of necessary supplies, such as food and medicine. Emergency medical services en route to or from the reservation could result in death.

Accordingly, the CGTO recommends DOE collaborate with potentially affected tribes to develop emergency response measures. In particular, we understand DOE has developed the NNSS Emergency Preparedness Plan and an emergency management program. Each tribal government must have a copy of

this plan, and participate in the training and implementation of the emergency management program set forth by DOE and its contractors.

Noise and Vibration

Numic people sing the souls of deceased tribal members to the afterlife in a multiple day ceremony called the Cry. The songs sung are called Salt Songs, a name derived from a spiritual journey taken by two sisters. The path of the journey is punctuated by topographically special places, which are reached at the end of various songs or sets of songs. The interactions between songs and places create a songscape (Stoffle, Halmo, and Austin 1997). The CGTO knows Salt Songs follow a spiritual trail. Salt Songs are still sung by Indian people today.

Noise can be a deterrent and a distraction. Noise upsets the spirituality of the area, negatively impacting the ability of salt songs to be heard. Because the thoughts and focus are interrupted, the balance, harmony, and well-being of the community as a whole become affected.

Increased aircraft activities proposed in the SWEIS will increase the noise and vibration throughout the area. According to one tribal elder, *“Noise and vibrations [from the proposed increased air traffic] will cause the animals to migrate from the area. The animals are placed where they are by the Creator. Forcing them to move results in their loss of power, their life span is shortened, and their very existence is endangered. This could disrupt the entire food chain. If these are used culturally and traditionally for medicines, stories, and songs, then harmony is broken. The Creator put them in their area. If you move them outside of their home, then their spirit dies and will cause undo and irreparable stress. They are grounded in the area. If habitats and animals are disturbed, then the benefit of salt songs and stories are diminished and will harm the culture of our people. The mountain needs to hear our songs, to hear our voices, and to still know that we are here. If we are not out there performing these, then the mountain, the wind, the water, and all of the others will continue to be unbalanced. This needs to be part of the Environmental Restoration process. People don’t understand harmony. This is our destiny and our responsibility. We are all woven together. The spirits are waiting for the Indian people to come back and to talk to them so that they can heal. We believe it is now time to allow the Indian people to begin the healing process. To do this, we propose balancing ceremonies.”*

The CGTO recommends that DOE work with us to develop a schedule to allow Indian people access to specific areas and perform traditional ceremonies. The CGTO also recommends the DOE establish quiet zones near or on the NNSS where and when Indian people are conducting these ceremonies.

Gold Meadows is extremely important to the Indian people. There are known culturally-sensitive resources in the area that must be protected and undisturbed from noise and human intrusion. Noise pollution becomes a disturbance and a hindrance to the singing of Salt Songs. Therefore, the CGTO recommends this area in particular become a no fly zone.

C.2.13 Environmental Justice

Federal agencies are directed by EO 12898, Environmental Justice, to detect and mitigate potentially disproportionately high and adverse human health or environmental effects of its planned programs, policies, and activities to promote nondiscrimination among various populations in the United States. In the Record of Decision for the 1996 NTS EIS, DOE recognized the need to address environmental justice concerns of the CGTO based on disproportionately high and adverse impacts to their member tribes from DOE NNSS activities. In the 2002 NTS Supplemental Analysis, DOE concluded that the selection and implementation of the Preferred Alternative would impact its member tribes at a disproportionately high

and adverse level, perpetuating environmental justice concerns. The CGTO maintains that environmental justice concerns continue to exist.

Of special concern to the CGTO is the potential for holy land violations, cultural survival-access violations, and disproportionately high and adverse human health and environmental impacts to the Indian population. These environmental justice issues need to be addressed in the NNSS SWEIS.

There is no question that the holy lands of Indian people have been, continue to be, and will be impacted by activities at the NNSS. It is also well known that only Indian people have lost cultural traditions because they have been denied free access to many places on the NNSS where ceremonies need to occur, where plants need to be gathered, and where animals need to be hunted in a traditional way. Prior to undertaking or approving activities at the NNSS, the CGTO recommends that DOE comply with EO 12898 and EO 13127 by facilitating tribal access to the NNSS, sponsoring an Indian subsistence consumption study, and sponsoring a study to determine perceived health risks and environmental impacts resulting from NNSS activities to CGTO member tribes.

On February 11, 1994, President Clinton signed EO 12898 which mandated each federal agency to review and achieve environmental justice as part of its mission by identifying and addressing, as appropriate, disproportionately high and adverse human health or environmental effects of its programs, policies, and activities on minority and low-income populations in the United States. Specifically, each federal agency is to (1) promote enforcement of all health and environmental statutes in area with minority and low-income populations, (2) ensure greater public participation, (3) improve research and data collection relating to the health and environment of minority and low-income populations, and (4) identify differential patterns of consumption of natural resources among minority and low-income populations. In addition, the environmental justice strategy shall include, where appropriate, a timetable for undertaking identified revisions and consideration of economic and social implications of the revisions.

The EO requires federal agencies such as the DOE to (1) identify an internal administrative process for developing its environmental justice strategy, and inform the Interagency Work Group on Environmental Justice (IWGEJ) within 4 months from the date of the order; (2) provide the IWGEJ with an outline of its proposed environmental justice strategy within 6 months; (3) provide the IWGEJ with the actual environmental justice strategy within 10 months; (4) finalize the strategy and provide a copy and written description of its strategy within 12 months to the IWGEJ including the identity of several specific projects that can be promptly undertaken to address particular concerns; and lastly, (5) report its progress in implementing its agency-wide environmental justice strategy within 24 months to the IWGEJ.

The CGTO has other concerns that fall within the context of EO 12898, such as subsistence consumption. Subsistence consumption requires the DOE to collect, maintain, and analyze information on consumption patterns such as those of Indian populations who rely principally on fish and/or wildlife for existence. Most importantly, the EO mandates each federal agency to apply equally their environmental justice strategy to Native American programs and assume the financial costs necessary for compliance.

To date, DOE has not shared its design and implementation strategy for Environmental Justice with the CGTO, nor has it identified and analyzed subsistence consumption patterns of natural resources by Indian people within the region of influence. Since the EO specifically addresses equity to Indian people and low-income populations, it is critical that the DOE immediately address the concerns of Indian tribes and communities by conducting systematic ethnographic studies and eliciting input necessary for administrative compliance and in the spirit of the DOE American Indian Policy. This policy outlines seven principles in its decision making and interaction with Federally-recognized Tribal governments. It requests that all Departmental elements ensure Tribal participation and interaction regarding pertinent decisions that may affect the environmental and cultural resources of Tribes. Of particular interest within these seven

guiding principles is (1) Recognize the Department's trust responsibility. (2) Commit to a government-to-government relationship. (3) Consult with Tribes to assure rights and concerns are considered prior to taking actions, making decisions, or implementing programs. (4) Consult with Tribes about potential impacts of proposed DOE actions on cultural resources or religious concerns that will avoid unnecessary interference with traditional religious practices. (5) The Department will initiate a coordinated effort for technical assistance, economic self determination opportunities and training.

In the Record of Decision for the 1996 NTS EIS, DOE recognized the need to address environmental justice concerns of the CGTO based on disproportionately high and adverse impacts to their member tribes from DOE NNSS activities. In the 2002 NTS Supplemental Analysis, DOE concluded that the selection and implementation of the Preferred Alternative would impact its member tribes at a disproportionately high and adverse level, perpetuating environmental justice concerns. The CGTO maintains that environmental justice concerns continue to exist and include (1) holy land violations, (2) cultural survival-access violations, and (3) disproportionately high and adverse human health and environmental impacts to the Indian population.

C.2.13.1 Holy Land Violations

American Indian people who belong to the CGTO consider the NNSS lands to be as central to their lives today as they have been since the creation of their people. The NNSS lands are part of the holy lands of Western Shoshone, Southern Piute, and Owens Valley Piute, and Shoshone people. The CGTO perceives that the past, present, and future pollution of these holy lands constitutes both Environmental Justice and equity violations. No other people have had their holy lands impacted by NNSS-related activities. Prior to undertaking or approving new activities, the CGTO should be funded to design, conduct, and produce a systematic American Indian Environmental Justice study.

C.2.13.2 Cultural Survival-Access Violations

One of the most detrimental consequences to the survival of American Indian culture, religion, and society has been the denial of free access to their traditional lands and resources. Loss to access to traditional food sources and medicine has greatly contributed to undermining the cultural well-being of Indian people. These Indian people have experienced, and will continue to experience, breakdowns in the process of cultural transmission due to lack of free access to government-controlled lands and resources such as those in the NNSS area. No other people have experienced similar cultural survival impacts due to lack of free access to the NNSS area.

In 1996, President Clinton signed EO 13007, *Indian Sacred Sites*. The EO promotes accommodation of access to American Indian sacred sites by Indian religious practitioners and provides for the protection of the physical integrity of such sites located on federal lands. The CGTO recommends that open access be allowed for American Indians who must conduct their traditional ceremonies and obtain resources within the NNSS study area. Unfortunately, however, land disturbance and irreparable damage of cultural landscapes, potential TCPs, and cultural resources may render certain locations unusable.

C.2.13.3 Disproportionately High and Adverse Human Health and Environmental Impacts to the Indian Population

It is widely known that many tribal representatives still collect and use plants and animals that are found within the NNSS region. Many of the plants and animals cannot be gathered or found in other places. Consumption patterns of Indian people who still use plants and animals for food, medicine, and other cultural or ceremonial purposes and the issues raised in this study force the CGTO to question if its member tribes are still being exposed to radiation, and possibly hazardous waste located at the NNSS.

C.3 American Indian Assessment of Alternatives

Since the early 1990's, DOE provided opportunities for representatives of the CGTO to visit portions of the NNSS and identify important places, spiritual trails, and landscapes of traditional and contemporary cultural significance.¹² These actions by DOE are considered positive steps towards fulfilling its trust responsibility through facilitating co-stewardship and land management strategies between DOE and the CGTO; however, this is an ongoing process.

The CGTO is concerned about culturally-perceived harmful land disturbing DOE actions described in Chapter 3 and Appendix A of this SWEIS. We are concerned because these actions adversely impact the NNSS land and offsite locations, which in turn affect the American Indian cultural landscape. To avert or minimize these impacts, the CGTO recommends DOE and the CGTO develop co-management strategies to help protect the land by implementing the following actions before continuing with these current or proposed activities:

- Identify those areas that have been disrespected and culturally damaged, so that balance can once again be restored
- Avoid further harmful ground-disturbing activities
- Make mitigation or restorable areas a top priority
- Avert or minimize damage to geological formations important to the cultural and ecological landscape
- Implement collaborative environmental restoration techniques that require minimum ground disturbing activities
- Continue to pursue systematic consultations with American Indians so that potentially impacted resources can be readily identified, alternative solutions discussed, and adverse impacts averted
- Provide American Indian people increased access to culturally significant areas so that we can use our knowledge, prayers, and traditions to effectively restore balance to the natural and spiritual harmony of the NNSS area and offsite locations.

In addition, the CGTO recommends DOE and the CGTO continue to hold annual meetings to discuss current and proposed actions in greater depth, to deliberate potential impacts, and to consider and develop mutually acceptable mitigation measures. This is particularly necessary for those actions requiring additional NEPA analysis, including but not limited to solar and geothermal energy development.

We believe we have been created in these lands. Because of this birth-right and tie to our ancestral land, the CGTO believes we have undeniable rights to interact with its precious resources, and a continuous obligation to protect it. The CGTO takes this responsibility very seriously and has developed our input for the alternatives presented throughout Section C.3 so we may fulfill this obligation.

¹² *Because this is a public document, the exact locations of these areas will not be revealed unless determined necessary during government-to-government consultation.*

C.3.1 No Action Alternative

C.3.1.1 National Security/Defense Mission

The CGTO's concerns and perspective regarding the National Security/Defense Mission is presented here, which summarizes our views and applies to all aspects of this mission, including those pertaining to the Stockpile Stewardship and Management Program; the Nuclear Emergency Response, Nonproliferation, and Counterterrorism Program; and the Work for Others Program. According to tribal elders, *"There is always going to be testing. Areas such as U1a support underground testing is where the affects are evaluated. There are programs and facilities where stockpile stewardship and management activities are currently performed. The CGTO knows that DOE maintains and conducts experiments and testing at various locations throughout the NNSS. We continue to be concerned about these activities and their impacts to the cultural landscape. Our involvement is essential to restoring and maintaining the balance to the land and its resources."*

The CGTO understands the National Security Defense Mission includes complying with the nuclear weapons test moratorium of 1992, which precludes new underground nuclear testing. We also understand DOE is required to maintain a state of readiness to resume nuclear tests if so directed by the President. The CGTO continues to be intensely opposed to underground nuclear testing. In consideration of our ancestral ties and proximity to the land, the CGTO must be informed prior to any preparations for testing so we can protect the spiritual and physical health of our people.

The CGTO understands the fundamental intent of the Nonproliferation and Counterterrorism projects is to promote world peace and reduce the need to use the NNSS and its offsite locations for nuclear weapons production, storage, assembly, and testing. However, the CGTO believes these activities may increase the number of weapons stored, disassembled, and disposed. These dangerous conditions may result in the land becoming angry and further contaminated, thereby impeding our ability to access important resources on our ancestral land.

The CGTO knows from past experience, but not formal study, that military training exercises and weaponry tests can adversely impact cultural resources. Military people move across the land on foot and in vehicles without either the time or the purpose to pay attention to the plants that are being disturbed, the animals that are being dislocated, or the archaeological material and other important resources underfoot.

Often geographically distinctive power places or culturally-sensitive areas are targeted without regard or knowledge of the significance to Indian people. Military exercises involving aircraft disrupt the harmony within the cultural landscape. Cultural resources may be damaged when conventional weapons are fired nearby. The environmental setting is disrupted from the noise and vibrations associated with these military operations and overflights. Noise and vibrations upset the spirituality and solitude of the area, negatively impacting songscapes and storyscapes. When the thoughts and focus are interrupted, the balance and well-being of the community as a whole become affected.

C.3.1.2 Environmental Management Mission

The CGTO's concerns and perspective regarding the Environmental Management Mission are presented under the Waste Management Program (Section C.3.1.2.1) and the Environmental Restoration Program (Section C.3.1.2.2), as appropriate.

C.3.1.2.1 Waste Management Program

The CGTO understands that current and proposed waste management activities identified under the Environmental Management Mission include high-hazard experiments involving nuclear material and high explosives, and storing special nuclear materials. The CGTO is aware the NNSS is used to store hazardous waste, and to store and dispose of low-level radioactive waste, low-level mixed radioactive waste (i.e., containing certain hazardous wastes), and non-hazardous waste and debris. After many years, the CGTO continues to be greatly concerned with the ongoing storage and disposal of these wastes at the NNSS, and the transportation of radioactive waste from off-site generators to the NNSS for storage and disposal.

We understand the radioactive and hazardous waste described in this SWEIS are defined in scientific terms and governed by state and federal regulations. Indian people hold both complex traditional and scientific views of these materials and waste. As an example, the former builds on the view that all resources--including the rocks--are alive.

To scientists, radioactive rocks are well understood with specific quantifiable physical properties. Scientists believe if they manage radioactivity in a purely scientifically appropriate manner, they are largely safe for use and disposal at the NNSS, an area often perceived by non-Indian people as a barren wasteland.

American Indian people believe radioactive rocks are powerful. However, contrary to scientific belief, we know that radioactive rocks can become “angry rocks” if they are removed without proper ceremony, used in a culturally inappropriate way, disposed of without ceremony, or placed where they do not want to be (Stoffle et al. 1989; Stoffle et al. 1990). The angry rock constitutes a threat that can neither be contained nor controlled by conventional means. It has the power to pollute food, medicine, and places, none of which can be used afterward by Indian people. Spiritual impacts are even more threatening, considering the angry rock would be transported along highways before ultimately being disposed of at the NNSS, affecting animal creation places, access to spiritual beings, and unsung human souls (Stoffle and Arnold 2003).

Indian knowledge and use of radioactive rocks, or minerals, in the western United States goes back for thousands of years. The DOE would benefit from this knowledge. Areas with high concentrations of these minerals were called dead zones and placed off limits to average Indian people. Such areas were places of power or energy and could only be visited or the minerals used under the supervision of specially-trained Indian people that are sometimes referred to in the English language as shaman or medicine men.

According to tribal elders, *“We are not sure how long Nellis and the NNSS have been facilities, and how much waste has been created, stored, and transported. This information is necessary for the CGTO to fully understand how significant the people and our resources may have been affected, and to prepare ceremonies, prayers, and culturally appropriate mitigation measures to attempt to restore balance. For example, Sunrise Mountain is a very significant mountain. Behind this mountain is a significant cave, Gypsum Cave, which some Indian people fear. There are traditional stories surrounding this area. The mountain and the cave are both culturally significant. Caves are supposed to hold much power. They are supposed to react with your mind. When you leave a cave, you are much more powerful.”* Gypsum Cave, which is protected and monitored by culturally affiliated tribes and the BLM, is a potential Traditional Cultural Property that may be impacted by the transportation of the waste.

C.3.1.2.2 Environmental Restoration Program

According to tribal elders, *“The Creator placed everything—the land, the rocks, the plants and animals—where they are for a purpose. However, now that the NNSS land is disturbed, we must come up with the appropriate prayers and ceremonies to rebalance the land and its resources.”*

The CGTO views environmental restoration activities attributed to the Environmental Management Mission as a positive effort to rebalance the world. Everything is connected. Individual restoration projects are insufficient alone but are starting points and should be considered as stages or steps in a comprehensive spiritual and ecological restoration program. The CGTO’s view is ideally suited to the spirit of holistic ecosystem management subscribed by the public and many Federal agencies.

Although the CGTO is supportive of restoring the environment, we are concerned about the future plans to decontaminate and decommission (D&D) some buildings that may have asbestos and other contamination, which will be released during the process. Specifically, the CGTO is concerned about potential impacts to the air, water, plants and animals. In addition, nearby tribes may be performing ceremonies and prayers and need to be notified so the D&D process does not negatively impact these important religious and traditional events through elevated noise and vibration levels.

We recommend conducting ethnographic studies involving the CGTO to better understand sites such as, but not limited to, Water Bottle Canyon, Timber Mountain, Shoshone Mountain, and other sites identified by the CGTO. Spiritual and ecological restoration assessments and projects require traditional management practices, and the involvement of tribal cultural experts to be successful. These specialists are needed to conduct initial assessments and site inventories, and to make recommendations for the next steps of the restoration effort. This strategy will result in the identification of resources, features, and other site aspects both tangible and intangible, that are in need of healing and restoration using culturally appropriate steps necessary to achieve restoration and balance.

Members of the CGTO have unique and extensive experience in collaborative spiritual and ecological restoration. We have many examples of successful collaboration among our tribal members and federal agencies. For example, the Big Warm Spring near the Duckwater Shoshone Tribe has been used throughout history for spiritual cleansing and healing. Young men are taken there during the “coming of age” to wash and cleanse themselves. In 2005, in collaboration with the U.S. Fish and Wildlife Service, the Duckwater Shoshone Tribe restored the Big Warm Spring to its original size and removed the non-native fish species. In 2007, during the final phase of the project, tribal members reintroduced the Railroad Valley Spring Fish to the Big Warm Spring in a culturally appropriate manner, successfully completing the spiritual and ecological restoration for this collaborative effort.

There are many potential spiritual and ecological restoration projects on the NNSS in need of attention, all with the goal of balancing the spiritual, cultural and ecological inner-workings of the project places. Based on CGTO experience with environmental restoration projects, we suggest a more aggressive collaborative environmental restoration program. Potential projects for which proposals have been or are being developed for the protection of wildlife, plant resources, and geological features, including the following:

Restoration of Water Bottle Canyon

Water Bottle Canyon is a natural water tank area and an exceptional cultural site. Cultural resources include *pohs*, tanks, rock rings, tonal rocks, and traditional use plants (Stoffle et al. 2006). Any activities in or impacts to a side canyon or to Water Bottle Canyon affect the rest of the canyon system, which is connected through physical and spiritual flows. Presently, the spiritual aspects of Water Bottle Canyon are out of balance and require cultural interactions to bring the canyon back into balance. The cleaning of the

pohs and tanks in this canyon system is one of several cultural practices needed to begin spiritual and ecological restoration. This project can reduce drought conditions, and provide spiritual, cultural, and ecological benefits to the CGTO, DOE, and the environment, consequently fulfilling the primary goal of spiritual and ecological rebalancing. Implementation of this project will require the appropriate cultural experts to identify project sites, to inventory and evaluate the conditions, resources, and features of the sites, and to design the restoration plan. The Project would involve overnight camping, annual activities, and monitoring of site conditions.

Evaluation of Traditional Cultural Property

During the DOE Annual Tribal Meeting with the CGTO, held September 1-2, 2009, the CGTO recommended the DOE support the nomination of a Traditional Cultural Property, previously identified as *Wunjikuda*. The CGTO recommended expanding the studies to enhance previously collected ethnographic information, and determining an appropriate title using knowledgeable tribal elders identified by the CGTO. The CGTO also recommended the DOE sponsor overnight camping activities at this site to elicit additional information from knowledgeable tribal representatives for the submittal of the nomination.

Cleaning Pohs and Tanks

The *pohs* and tanks found throughout the NNSS require cultural practices to function effectively. The *pohs* and tanks at Water Bottle Canyon and Ammonia Tanks, for example, are interrelated and tie each location to each other. Both sites are used to bring water from the rain that is needed and used for ceremonial use to restore balance. American Indian people have Rain Shaman who have the ability to talk to all of the elements responsible for bringing water or rain to the land, people and animals. According to tribal elders, “*When the water arrives, it is approached with great respect and awakened very carefully when prayed upon. In appreciation and in honor of the water’s return, the animals come back, the plants will grow and people will continue to pray--all ultimately leading to balance and restoration of the area.*” Customarily, Indian people cleaned the *pohs* and tanks through the use of songs, stories and prayers. The women cleaned the *pohs* and tanks and were followed by the Rain Shaman who called the rains.

By supporting the CGTO proposed project to clean the *pohs* and tanks, DOE will reduce drought conditions and restore balance to the area. It will provide spiritual, cultural, and ecological benefits to the CGTO, DOE, and the environment, thereby facilitating our obligation of spiritual and ecological rebalancing. Implementation of this project will require the appropriate cultural experts to identify project sites, to inventory and evaluate the conditions, resources, and features of the site, and to design a culturally appropriate restoration plan.

C.3.1.3 Nondefense Mission

There are a variety of current and proposed actions considered under the Nondefense Mission. Many of these are related to the NNSS Environmental Research Park, which allows universities and other federal agencies to conduct research. Other projects involve solar and geothermal energy development, and constructing the Nevada Desert Free-Air Carbon Dioxide Enrichment and the Mojave Global Change facilities proposed in Area 5. The CGTO’s concerns and perspective regarding the Nondefense Mission, including activities associated with the Infrastructure, Conservation and Renewable Energy, and Other Research and Development Programs, are summarized here.

Indian people view each proposed project under the Nondefense Mission as potentially impacting cultural resources. Non-Indian people unfamiliar with the importance of leaving cultural resources untouched may find and collect artifacts or remove plants that are significant to American Indian people. Construction of the proposed solar generating facility in Area 25 involves draining the Sun of its power unnaturally and

making it week. Construction also involves scraping the land, generating dust emissions, facilitating erosion, and impeding visual resources.

All landforms within the NNSS have high sensitivity levels for American Indians. The ability to see the land without the distraction of buildings, towers, cables, roads, and other objects is central to the spiritual interaction between Indian people and their traditional lands. Visual resources may be negatively impacted if proposed solar and geothermal projects are pursued. The CGTO must be part of any future discussions of these projects due to potential impacts to visual resources that may impede traditional and cultural ceremonies.

Only Indian people know which places are appropriate for visits by non-Indian people and how to collect plants, animals, and soil samples so that these activities do not disrupt the land and its associated spirituality. Because of the potential affects to the environment and its resources from Nondefense Mission projects, the CGTO must become an integral part of site-specific studies and develop culturally-appropriate text for future NEPA analyses, including environmental assessments and mitigation plans.

C.3.2 Expanded Use Alternative

The CGTO's concerns and perspective regarding the Expanded Use Alternative include those discussed previously. Under the Expanded Use Alternative, DOE would pursue geothermal electrical generation in a variety of locations depicted in SWEIS Figure A.2.3-1, and solar energy systems and facilities in Areas 6 and 25, respectively.

According to the information presented by DOE in the SWEIS, the CGTO knows the NNSS has been selected to pursue the development of the solar enterprise zone within Area 25. We also understand the project schedule presented in the Memorandum of Understanding between DOE and DOI initiates environmental evaluations in July 2010. The CGTO must be part of any additional, future environmental assessments as this proposed activity will adversely impact visual resources and degrade traditional and religious ceremonies. The visual quality of the landscape will lose its integrity and the viewscape will be marred from the introduction of considerable infrastructure directly visible from U.S. 95. For Indian people, an adversely impacted resource will most certainly impact the spiritual harmony as a whole. Therefore, Indian people will need to perform ceremonies, offer prayers, and sing songs in an effort to mitigate these impacts. If construction proceeds, DOE will need to make provisions for Indian monitors to assess the construction footprint and implement traditional techniques that require minimum ground-disturbing actions.

The CGTO understands DOE is proposing to construct modular geothermal power plants that have a relatively small surface footprint. However, the initial project support activities will reportedly impact 30 to 50 acres. The CGTO also understands that DOE may pursue solar power by constructing a 5-megawatt photovoltaic system, and commercial solar power generating facilities. These proposed solar power electrical generation projects would impact approximately 50 acres and 39,600 acres of land, respectively. The CGTO is particularly concerned with the land and resources potentially impacted by these projects.

Fundamentally, the CGTO struggles with the idea of pursuing solar energy as a "cleaner" form of energy and the potential impacts to the Sun. According to some tribal elders, *"The Sun is like a big battery. Once you drain its power, will it die? For those spiritually connected to the Sun, we are concerned about unnaturally harnessing it's power. We know the Sun was given only so much energy. If the Sun is drained, how will it be replenished? If the Sun goes away, everything will die. The stories and activities of our ancestors are tied greatly to the Sun. Today, our prayers and ceremonies still travel or rely on its strength."* Because of the complexity and potential implications to the environment, to the cultural and visual landscape, and for our own survival, it is imperative that DOE support an ethnographic study to

evaluate the cultural implications of pursuing solar energy on the NNSS. The CGTO also recommends Indian people provide their expertise in the development of the Solar Enterprise Environmental Assessment.

Construction of the solar power electrical generation system and facilities, and the geothermal electrical generation facility will involve scraping the land, irreparably destroying the land and vegetation. Facility construction will facilitate erosion, impede visual resources, and will emit dust and other potentially hazardous pollutants into the air. This will, in turn, impact the land, water, air, plants, animals, and cultural resources, and will affect the solitude of the land.

The CGTO is concerned that DOE's proposed activities unnaturally harnesses the earth's power without understanding the implications of these actions or all that is necessary to begin to prepare the earth and its resources. Numic people have a complex understanding of *power* and believe it is special force that was placed in all things at the time the world was created. It is that spark which keeps the world going and all of its elements thinking, talking, moving, and interacting. This special *power* moves and has the ability to move down hill, often concentrating or pooling in certain places like mineral outcrops, cliffs, and caves. It has characteristics similar to water, and can be understood as having the ability to return to the sky to become like rain and snow, which are called down from the sky by the highest mountains. This special *power* has a rotation of movement similar to the hydrological cycle and has the ability to impact all things (Carroll et al. 2006).

According to information presented throughout the SWEIS, the proposed geothermal electrical generation facilities would use the power of rocks that are hot. Rocks, or minerals, are culturally important and have significant roles in many aspects of Indian life. For example, the Chalcedony would have made an attractive offering acquired and then left at the vision quest or medicine site located to the north on top of a volcano like Scrugham Peak. In particular, Indian people have observed the presence of the following minerals at the NNSS: (1) Obsidian, (2) Chalcedony, (3) Yellow Chert (otherwise known as Jasper), (4) Black Chert, (5) Pumice, (6) Quartz Crystal, and (7) Rhyolite Tuff.

Other traditional use minerals are known to exist throughout the NNSS and offsite locations (see C.2.5). In order to document the cultural significance of these areas, additional ethnographic mineral studies are needed to fully understand the location and importance of these minerals at the proposed project site locations prior to any surface disturbing activities. The CGTO is particularly concerned about the potential impacts or use of these minerals relating to proposed geothermal activities.

Some of the locations proposed for geothermal electrical power plants are recognized as traditionally or spiritually important. In particular, the CGTO is concerned about activities that have the potential to impact Oasis Valley, Amargosa River, Timber Mountain Caldera Complex, Black Mountain, Gold Meadows, Cane Springs, Calico Hills area, Crater Flats, Scrugham Peak, Shoshone Mountain, Devil's Hole, Ash Meadows, and Death Valley. The CGTO is concerned about locating the proposed geothermal project along hydrological basins, whose power is derived from volcanic activity.

We know the forces of power in the world move along channels and combine into specific nodes or places of power. A common set of these channels follows the path of water. From this beginning, the water moves downhill in rivulets, washes, and streams. The water often goes underground where it forms similar networks of channels moving in various directions, corresponding to hydrological basins. Water is often attracted to volcanic activity, thus producing power places like hot mineral springs.

The CGTO is concerned that DOE may impact hot springs in their pursuit of geothermal power. According to information obtained by Dr. Richard Stoffle with the University of Arizona and presented in the report *Black Mountain: Traditional Uses of Volcanic Landscapes* (Carroll et al. 2006), hot springs

come from the earth where volcanic activity still occurs even if the magma cannot be seen on the surface. Such springs are a combination of water and volcanoes producing a special place where both ceremonial and medicine occur. Indian people from Owens Valley have a single origin story for all of the hot springs in the southern Great Basin and northern Mohave Desert. According to traditional stories, a great ball of fire came from the sky and landed at Coso Hot Springs and then splashed to form at once all of the other hot springs.

Hydrological Impacts

According to information presented in the SWEIS, the proposed solar and geothermal projects will require a tremendous amount of water. A modular geothermal power plant alone will require up to 20-acre-feet to initially prime the system.

Indian people believe water is a living being that is fully sentient and willful. Water is already stressed throughout the region. The CGTO is concerned about the use of this very limited and important resource.

Because water is a powerful being it is associated with other powerful beings, such as water babies, a supernatural being that lives in and protects the water. These beings are like the people of the water. They are highly respected by American Indian culture. If water is contaminated and misused, the water babies may cause harm and move to other areas that are not contaminated.

Air Quality and Climate Impacts

Construction of these proposed facilities will impact large areas of land, potentially emitting dust and contaminants. The CGTO knows the air is alive. The Creator puts life into the air, which is shared by all living things. Air can be destroyed, causing pockets of dead air. There is only so much alive air that surrounds the world. If you kill the living air, it is gone forever and cannot be restored. Dead air lacks the spirituality and life necessary to support other life forms. The CGTO is concerned about emitting things into the air that are unnatural, and the potential health and environmental issues associated with these emissions.

Visual Resource Impacts

All landforms within the NNSS have high sensitivity levels for American Indians. The ability to see the land without obstructions like buildings, towers, cables, roads, and other objects is essential for the spiritual interaction between Indian people and their traditional homelands. Visual resources may be negatively impacted if proposed solar and geothermal projects are pursued. The CGTO must be part of any future discussions as these may impact visual resources and may impede traditional and cultural ceremonies.

C.3.3 Reduced Operations Alternative

The CGTO's concerns and perspective regarding the Reduced Operations Alternative include those discussed previously. The CGTO is supportive of a decrease to culturally-perceived harmful land disturbing activities within the NNSS and TTR areas. To successfully reduce operations and restore environmental balance, it is essential to have tribal representatives involved throughout the process to help guide DOE in conducting culturally appropriate activities.

C.4 Mitigation Measures

Only Indian people have traditional ecological knowledge that tells us how and where to interact with the earth and all of its resources to minimize or avoid impacts to the land while maintaining its spiritual integrity. According to tribal elders, *“Indian people have the conviction that the ecology of the natural environment is all integrated. We have been blessed from the beginning of creation as having a unique understanding of being a good steward, and a clear path to care for the land and its resources. The songs, stories, tradition and customs play a profound development of this conviction. It is like the world is a huge stage and there are many cast members all manipulating their intrinsic ties, using their roles to make possible for a successful event.”*

With this in mind, the CGTO is providing DOE recommendations in Section C.4 in an effort to avert or minimize impacts. We must emphasize that recommendations made by the CGTO do not imply we support the proposed actions and alternatives. These are merely our attempt to restore the harmony and balance to the resources impacted or potentially impacted by DOE activities using the NEPA process.

In 1996 and 2000, the DOE invited the CGTO to participate in the development of the NTS/DOE Resource Management Plan (RMP) in an effort to mitigate impacts to resources. The CGTO provided culturally-appropriate resource management strategies for integration on the NNSS based on traditional Indian perspectives. The CGTO long-term objective is to see our existing government-to-government relationship evolve into co-management of the NNSS land and its resources. The key concept driving the RMP is ecosystem management officially recognized in federal guidelines for land management agencies. This fits well with the traditional Indian views regarding maintaining balance and harmony among the land and its resources. Therefore, the CGTO believes the continued development of a RMP is essential to blending elements of the two worldviews. This promotes implementation of culturally-sensitive strategies for land and resource management, which is mutually beneficial to the DOE and the tribes. The CGTO understands the RMP is a dynamic, living document that requires periodic evaluation and updates, as appropriate. Accordingly, the CGTO recommends DOE hold annual update meetings, which would include current and proposed activities at the NNSS, and discussions regarding the RMP, mitigation measures, and their implementation.

C.4.1 Land Use

The CGTO is concerned with DOE’s plans to continue to restrict access and potentially close areas within the NNSS. The NNSS area is part of the traditional Holy Lands of the Western Shoshone, Southern Paiute, and Owens Valley Paiute and Shoshone peoples. The lands are central in the lives of our people and mutually shared for religious ceremony, resource use, and social events (Stoffle et al. 1990a and b).

Since the early 1990’s, DOE has funded representatives of the CGTO to visit portions of the NNSS. Because of this involvement, we have identified places, spiritual trails, and cultural landscapes of traditional and contemporary cultural significance. CGTO remains committed in our assertion that portions of the NNSS must be set aside for traditional and contemporary ceremonial use.

In order to fulfill the Holy Land use expectations, the CGTO also recommends continuing to identify special places, spiritual trails, and landscapes and setting aside these places for unique co-stewardship and ceremonial access. For example, studies have begun regarding the identification of places, spiritual trails and cultural landscapes in the Timber Mountain Caldera. We strongly encourage DOE to pursue these studies, which, when completed, will add an American Indian cultural component that will contribute to the importance of this National Natural Landmark. The CGTO believes these actions by DOE are considered positive steps for facilitating co-stewardship arrangements between our governments to help co-manage important Indian resources of the NNSS and to regain balance.

The CGTO recommends Gold Meadows continue to be set aside for exclusive Indian use because it contains a concentration of significant cultural resources. Similarly, the CGTO recommends DOE set aside Water Bottle Canyon, Scrugham Peak, Prow Pass, Timber Mountain and select areas within Calico Hills and Shoshone Mountain for exclusive Indian use. Efforts should be made to forego any additional land disturbances within these areas and provide access to Indian people. The CGTO also recommends tribal visits to areas designated for repatriation, such as the Pahute Mesa, and periodic assessments conducted to comply with NAGPRA.

C.4.2 Socioeconomics

Although DOE continues to make strides to diversify their workforce, the CGTO strongly encourages DOE to enhance efforts to hire more Indian people and promote the hiring of Indian-owned businesses to mitigate socioeconomic impacts to our people. To facilitate this effort, the CGTO could serve as a conduit to assist DOE and its contractors in identifying and promoting employment opportunities for American Indians at the NNSS.

C.4.3 Geology and Soils

During the evaluation of the 1996 FEIS, the CGTO noted that repeated nuclear testing had resulted in severe disturbances to the geology and soils, or minerals, in large portions of the NNSS. This seemingly irreparable damage has made certain areas unfit for human use and inaccessible to American Indians who have relied on the earth and rocks for medicine and religious purposes.

In general, the mitigation measures proposed by DOE for geology and soils include erosion control through stabilization and re-vegetation. The CGTO is concerned about the unnatural erosion control methods proposed by DOE. In particular, the CGTO struggles with activities that require relocating rocks and soil from where originally placed by the Creator and are being used contrary to the Creator's intention. Indian people know that relocating the soil in a culturally-unacceptable manner can cause adverse impacts to the environment such as the increased potential for noxious weed growth. This could potentially threaten nearby native vegetation and harm Indian people and wildlife that rely on it for survival.

Therefore, the CGTO recommends DOE implement culturally-appropriate stabilization efforts, and re-vegetation techniques using traditional ecological knowledge. Indian people stabilize our land by offering prayers to explain to the soil why we are removing it, and to thank it for its use. We then remove and protect the topsoil for future use. We replace the soil with dirt and gravel from nearby land only after offering prayers, and re-contour the land out of respect to the visual landscape. Indian people re-vegetate our land by offering prayers to bless the seeds and the plants so they will grow strong. We place the seedlings in the direction of the morning sun, and then give thanks for the opportunity to plant them. Our key objective is to protect and restore our ancestral land. This is our ancestral land and we encourage DOE to make provisions for Indian people to participate in its stabilization and re-vegetation to mitigate adverse impacts to geology and soils.

In the 1996 NTS FEIS and in the 2002 NTS EIS Supplemental Analysis, the CGTO continued to express concerns about the removal of contaminated soils and the need for religious leaders to conduct balancing ceremonies and healing prayers at these disturbed locations. In particular, the CGTO recommended tribal representatives provide information about the re-vegetation of a portion of the Double Tracks Site located on the TTR. The CGTO maintains our involvement is still necessary for the Double Tracks site as well as for the Clean Slates site located at TTR; however, we are awaiting DOE's approval to proceed so we may begin to heal these lands.

C.4.4 Hydrology

When water is respected, it sustains all life forms. When water is mistreated, it withdraws life-giving support and returns to the underworld. The CGTO knows the hydrological systems throughout the NNSS have been impacted from the drought. Drainage patterns have been altered from DOE activities and will continue to be impacted if these proceed. There are places on the NNSS where the rain falls but does not nurture the plants and animals. Therefore, the CGTO must be involved with DOE in mitigating impacts to hydrological resources because if the water is treated inappropriately, it will remove itself from the NNSS.

To minimize some adverse impacts to hydrological resources, the CGTO recommends the DOE allow Indian people access to clean the *pohs* and tanks found throughout the NNSS. *Pohs* and tanks are naturally formed geologic features or basins used to bring and gather water from the rain and to nourish the plants and animals. The water within these *pohs* and tanks are central to our ceremonies to restore balance. By supporting the CGTO proposed project to clean the *pohs* and tanks, DOE will help reduce drought conditions. In turn, this project will provide spiritual, cultural, and ecological benefits to the land and the environment, thereby facilitating our obligation of spiritual and ecological rebalancing. Implementation will require cultural experts to identify sites, to inventory and evaluate the conditions, resources, and features of the site, and to implement culturally-appropriate mitigation measures.

C.4.5 Biological Resources

The mitigation measures presented by DOE in SWEIS Section 7.7 focus on avoidance of biological resources, relocation of animal species, and monitoring plants, animals, and their habitats. The CGTO recommends DOE mitigate adverse impacts to biological resources through avoidance, culturally-appropriate revegetation efforts, reintroduction of native animals, and traditional plant and animal management methods. Indian people have extensive, traditional ecological knowledge and deep concern for the biological resources of the area and should participate directly with DOE to mitigate adverse impacts and protect these resources.

According to tribal elders, "Prior to re-vegetation efforts, we talk to the land to let it know what we plan to do and ask the Creator for its help. We choose our seeds from the sweetest and the best plants, and store them for the winter to dry. When the winter is over, we place the seeds in a moist towel or sock and allow the new plant to sprout. We then plant the sprouts into small containers with soil until they are ready to transplant into the ground. This is a long and delicate process, requiring patience and knowledge passed down from our ancestors. If the plants are struggling to grow, we tag them and move them to face the same direction as the sun."

The DOE would benefit from this knowledge to enhance their re-vegetation efforts. The CGTO knows DOE struggles with the success rates regarding the density and diversity of native plants during re-vegetation efforts. A co-stewardship approach with the tribes would enable DOE to enhance their re-vegetation efforts, saving time, money, and resources.

Part of the mitigation measures presented by DOE in this section includes notifying the U.S. Fish and Wildlife Service (FWS) of incidental taking of desert tortoises. The desert tortoise is culturally-significant to Indian people because of its healing powers, longevity, and wisdom. It is integral to our traditional stories, well-being and perpetuation of our native culture. Incidental taking of this traditionally-important animal is particularly disturbing to native people. Accordingly, the CGTO must be notified concurrently with the FWS so prepare our people and the environment for this loss.

Over the past 14 years, various initiatives have been undertaken to restore animal habitats and reintroduce certain animals, such as the desert big horn sheep near the southern portion of the NNSS, without

participation from the CGTO. Modification of habitat or the restocking of animals is considered a highly sensitive religious act and requires participation from Indian people. For these activities to be successful and to restore balance, it is essential to have tribal representatives involved throughout this process.

C.4.6 Visual Resources

All landforms within the NNSS have high sensitivity levels for American Indians. The ability to see the land without the distraction of buildings, towers, cables, roads, and other objects is essential for the spiritual connection between Indian people and their traditional lands. Views from places are an important cultural resource that contributes to the location and performance of American Indian ceremonialism. Viewscapes are tied with songscapes and storyscapes especially when the vantage point has a panorama composed of multiple locations from either song or story.

The CGTO knows that many of the activities described under the proposed action and alternatives, such as those associated with facility construction and environmental restoration, will adversely impact visual resources. For Indian people, the adverse impact to visual resources will most certainly impact the spiritual harmony of the environment as a whole. Facility construction and operation will impede visual resources, and affect the solitude and cultural integrity of the land.

Although DOE proposes to mitigate visual resource impacts by painting structures to reduce visibility, the CGTO knows additional mitigation measures are necessary. The CGTO recommends that landscape modifications, including those associated with environmental restoration activities, be done in consultation with American Indians. Specifically, DOE should make provisions for Indian people to access the land and culturally assess its visual resources. DOE should make provisions for Indian people to participate in annual monitoring of land disturbing activities through the duration of the project. The CGTO should also participate in restoring the land, and concealing infrastructure using traditional Indian re-vegetation methods (See Section C.4.5, Biological Resources.) Finally, the CGTO recommends that DOE make provisions for Indian people to conduct ceremonies, and offer prayers and songs in an effort to re-balance this adversely impacted resource.

C.4.7 Cultural Resources

We are concerned about impacts to cultural resources from activities including but not limited to scraping the land; underground testing; drilling; grading; excavation; fencing; subsidence crater development resulting from explosives; live fire; cleanup activities; construction of buildings, roads, firebreaks, and utilities; and building modification, decontamination, or demolition. We are also concerned about proposed improvements to existing roads and facilities associated with new construction activities, and the potential impacts to cultural resources on previously disturbed and undisturbed locations. Finally, we are concerned about vehicular and pedestrian access in areas containing cultural resources and the increased potential for vandalism or unauthorized artifact collection.

The CGTO understands the mitigation measures proposed by DOE to protect cultural resources include avoidance, evaluation and data recovery, and monitoring, as described further under Mitigation Measures 1 through 6 of the NTS Cultural Resource Management Plan (Drollinger and Beck 2010). Accordingly, the CGTO must be an integral part of these mitigation measures so that impacts on American Indian cultural resources can be efficiently minimized or averted. American Indian people know the NNSS landscape in great depth and can help DOE identify and protect plants, animals, geography, archaeological sites, and traditional cultural properties that have been or will be adversely impacted by NNSS programs and activities.

The CGTO recommends that DOE make provisions for Indian people to continue to identify culturally-significant locations so potentially impacted resources can be identified, alternative solutions discussed, and adverse impacts averted. These studies will address and guide DOE in developing culturally-appropriate Best Management Practices to protect cultural resources and more effectively implement Mitigation Measures 1 through 6. To accomplish this, Indian people must be involved with the following actions:

- Assess and determine culturally-appropriate measures to protect geological formations important to the spiritual landscape
- Implement culturally-appropriate environmental restoration techniques that require minimal ground disturbance
- Restore impacted plant and animal species essential to the spiritual and cultural landscape
- Provide American Indian people access to CGTO designated areas so they can contribute their knowledge, conduct purification ceremonies with prayers and offerings to restore the natural and spiritual harmony of the NNSS landscape.
- Complete the TCP nomination process previously recommended by the CGTO in 2009 for Shoshone Mountain and initiated for Water Bottle Canyon.
- Complete the Indian History Project report prepared by the DOE, DOD, and CGTO, which originally began in 2001. Specifically, complete editorial changes to the report (as necessary), publish, and distribute.
- Develop and implement systematic American Indian ethnographic studies to better understand the interconnectedness of the cultural landscape and culturally-appropriate methods to protect the landscape and maintain balance.
- Complete the revegetation effort for the restoration of Clean Slates, which began in 1996.

In addition, the CGTO recommends Gold Meadows continue to be set aside for exclusive Indian use because the area contains a concentration of significant cultural resources. Similarly, the CGTO recommends DOE set aside Water Bottle Canyon, Scrugham Peak, Prow Pass, Timber Mountain and select areas within Calico Hills and Shoshone Mountain for exclusive Indian use. Efforts should be made to forego any additional land disturbances within these areas and provide access to Indian people.

The CGTO agrees with DOE's mitigation measure regarding site monitoring, and recommends Indian people serve as site monitors. At a minimum, the CGTO recommends annual tribal visits to monitor the state of cultural sites located within the NNSS and to offer blessings. The CGTO also recommends tribal visits to areas designated for repatriation, such as the Pahute Mesa, and periodic assessments conducted to comply with NAGPRA.

C.4.8 Waste Management

We continue to strongly oppose the transportation, storage and disposal of radioactive waste at the NNSS; however, Indian people must continue to fulfill our birth-rite obligation to care for our Holy Land and do what we can to try to restore balance to Area 5 and other contaminated locations. The CGTO recommends DOE allocate funds and resources for Indian people to conduct systematic ethnographic studies of these

waste management programs. If DOE selects the expanded use alternative, the CGTO must conduct a cultural assessment of the Area 3 RWMS prior to new use to mitigate potential impacts.

The CGTO supports DOE's intention to minimize waste within the NNSS area. We encourage the DOE to partner with us to develop and participate in DOE's waste minimization and pollution prevention programs. In particular, the waste minimization efforts described in the SWEIS regarding land commitments must include members of the CGTO to ensure the cultural implications of these decisions are considered prior to implementation.

Finally, the CGTO struggles with the ethics of transporting and relocating radioactive waste from other American Indian lands so those people can live without fear of radioactivity. We are greatly concerned about the adverse spiritual, environmental, and health impacts associated with relocating these angry rocks from their current locations to our Holy Land. We believe transporting these to our land perpetuates animosity and discord among tribal governments. Because these decisions adversely impact our land and our relationships with other tribal governments, the CGTO recommends DOE host a break out session for culturally-affiliated tribes associated with the NNSS and the multi-state waste generator facilities during DOE's Annual Waste Generator Conference. These efforts will facilitate further discussion, understanding, and to develop culturally-appropriate mitigation measures.

C.5 Conclusions and Recommendations

Ultimately, the CGTO is concerned about impacts to (1) tribal members and the people they represent; (2) tribal economies and enterprises; (3) flora and fauna which are considered vital to cultural survival; (4) important resources which may be damaged from ground-disturbing activities; and (5) shipments and storage of waste through the traditional Holy Lands of the Western Shoshone, Southern Paiute, and Owens Valley Paiute and Shoshone people.

Indian people have a unique understanding based on traditional ecological knowledge which tells us how and where to interact with plants and animals, water sources, and collect soil samples to minimize impacts to the land while maintaining its spiritual integrity. Because of the potential affects to our ancestral land and its delicate resources, the CGTO must be an integral part of NNSS and TTR activities.

The CGTO has provided recommendations to DOE throughout Appendix C and within our text boxes throughout the SWEIS. In addition to these, the CGTO recommends DOE and the CGTO continue to hold annual meetings to discuss current and proposed actions in greater depth, to deliberate potential impacts, and to consider and develop mutually acceptable mitigation measures. This is particularly necessary for those actions requiring additional NEPA analysis, including but not limited to solar and geothermal energy development.

The CGTO strongly encourages DOE to evaluate the cultural impacts of pursuing solar and geothermal energy because of the complexity and the potential implications to the environment, cultural landscape, and our survival. The CGTO recommends developing culturally-appropriate text for future NEPA analyses, including the environmental assessments and mitigation plans required for these proposed undertakings.

In conclusion, the CGTO must continue to fulfill our obligation to care for our Holy Land. We must gain access and opportunity to conduct ceremonies, and to care for the NNSS and TTR land as the Creator intended and in ways only known by Indian people.

Table C-1 American Indian Traditional-Use Plants Present at the Nevada National Security Site

<i>Scientific Name</i>	<i>Common Name</i>	<i>GC/UTTR</i>	<i>YM</i>	<i>PM/RM</i>
1. <i>Ambrosia dumosa</i>	White bursage	X		
2. <i>Amelanchier utahensis</i>	serviceberry		X	
3. <i>Amsinckia tessellata</i>	fiddleneck		X	
4. <i>Anemopsis californica</i>	yerba mansa		X	
5. <i>Arabis pulchra</i>	wild mustard		X	
6. <i>Artemisia ludoviciana</i>	sagebrush, wormwood	X	X	
7. <i>Artemisia nova</i>	black sagebrush	X		X
8. <i>Artemisia tridentata</i>	big sagebrush		X	X
9. <i>Atriplex canescens</i>	four-winged saltbush	X		
10. <i>Atriplex confertifolia</i>	Shadscale		X	
11. <i>Brodiaea pulchella</i>	desert hyacinth		X	
12. <i>Calochortus bruneaunis</i>	sego lily			X
13. <i>Calochortus flexuosus</i>	mariposa lily		X	
14. <i>Carex spp.</i>	sedge	X		
15. <i>Castilleja chromosa</i>	Indian paintbrush		X	
16. <i>Castilleja martinii</i>	narrowleaf paintbrush			X
17. <i>Ceratoides lanata</i>	winterfat			X
18. <i>Chenopodium fremontii</i>	Fremont goosefoot			X
19. <i>Chrysothamnus nauseosus</i>	rabbitbrush	X	X	X
20. <i>Cirsium mohavense</i>	desert thistle		X	
21. <i>Coleogyne ramosissima</i>	black brush		X	
22. <i>Coryphantha vivipara var.</i>	fishhook cactus	X	X	
23. <i>Coryphantha vivipara var.</i>	foxtail cactus			X
24. <i>Datura meteloides</i>	jimsonweed	X	X	
25. <i>Descurainia pinnata</i>	tansy mustard		X	
26. <i>Distichlis spicata</i>	salt grass		X	
27. <i>Echinocactus polycephalus</i>	cotton-top cactus		X	
28. <i>Echinocereus englemannii</i>	hedge hog cactus	X	X	
29. <i>Eleocharis palustris</i>	Spikerush			X
30. <i>Elymus elymoides</i>	squirrel tail			X
31. <i>Encelia virginensis var.</i>	brittlebush		X	
32. <i>Ephedra nevadensis</i>	Indian tea	X	X	X
33. <i>Ephedra viridis</i>	Indian tea		X	X
34. <i>Eriastrum eremicum</i>	desert eriastrum			X
35. <i>Eriogonum inflatum</i>	desert trumpet		X	
36. <i>Erodium cicutarium</i>	herringbill			X
37. <i>Euphorbia albomarginata</i>	rattlesnake weed		X	X
38. <i>Gaistrum spp.</i>	earthstar		X	
39. <i>Gilia inconspicua</i>	gilia			X
40. <i>Grayia spinosa</i>	spiny hop sage			X
41. <i>Gutierrezia microcephala</i>	matchweed	X	X	
42. <i>Juncus mexicanus</i>	wire grass		X	
43. <i>Juniperus osteosperma</i>	juniper, cedar	X	X	X
44. <i>Krameria parvifolia</i>	range ratany		X	
45. <i>Larrea tridentata</i>	creosote bush	X	X	
46. <i>Lewisia rediviva</i>	bitter root			X
47. <i>Lycium andersonii</i>	wolfberry	X	X	
48. <i>Lichen</i>	lichen		X	X

<i>Scientific Name</i>	<i>Common Name</i>	<i>GC/UTTR</i>	<i>YM</i>	<i>PM/RM</i>
49. <i>Lycium pallidum</i>	wolfberry		X	
50. <i>Menodora spinescens</i>	spiny menodora		X	
51. <i>Mentzelia albicaulis</i>	desert corsage		X	X
52. <i>Mirabilis multiflora</i>	four o'clock	X		X
53. <i>Nicotiana attenuata</i>	coyote tobacco			X
54. <i>Nicotiana trigonophylla</i>	Indian tobacco	X	X	
55. <i>Opuntia basilaris</i>	beavertail cactus	X	X	
56. <i>Opuntia echinocarpa</i>	golden cholla cactus		X	
57. <i>Opuntia erinacea</i>	Mojave prickly pear	X	X	
58. <i>Opuntia polyacantha</i>	grizzly bear cactus			X
59. <i>Orobanche corymbosa</i>	broomrape, wild			X
60. <i>Oryzopsis (Stipa) hymenoides</i>	Indian ricegrass	X	X	X
61. <i>Penstemon floridus</i>	Panamint beard tongue			X
62. <i>Penstemon pahutensis</i>	Pahute beard tongue			X
63. <i>Peraphyllum ramosissimum</i>	squawapple		X	
64. <i>Phragmites australis</i>	cane, reed	X	X	
65. <i>Pinus monophylla</i>	pinyon pine		X	X
66. <i>Prosopis glandulosa</i>	mesquite	X	X	
67. <i>Prosopis pubescens</i>	screwbean		X	
68. <i>Psoralea polydenia</i>	dotted dalea		X	
69. <i>Purshia glandulosa</i>	buckbrush		X	
70. <i>Purshia mexicana</i>	cliffrose			X
71. <i>Purshia tridentata</i>	buckbrush			X
72. <i>Quercus gambelii</i>	scrub oak		X	X
73. <i>Rhus aromatica</i>	skunkbush, sumac			X
74. <i>Rhus trilobata</i> var. <i>anisophylla</i>	squawbush		X	
75. <i>Rhus trilobata</i> var. <i>simplicifolia</i>	squawbush	X	X	
76. <i>Ribes cereum</i>	white squaw currant			X
77. <i>Ribes velutinum</i>	desert gooseberry			X
78. <i>Rosa woodsii</i>	woods rose			X
79. <i>Rumex crispus</i>	curly dock, wild rhubarb		X	
80. <i>Salix exigua</i>	willow	X	X	
81. <i>Salix gooddingii</i>	black willow	X	X	
82. <i>Salsola iberica</i>	Russian thistle	X		X
83. <i>Salvia columbariae</i>	chia sage		X	
84. <i>Salvia dorrii</i>	purple sage, Indian	X		
85. <i>Sarcobatus vermiculatus</i>	greasewood	X		
86. <i>Sisymbrium altissimum</i>	tumbling mustard			X
87. <i>Sphaeralcea ambigua</i>	globe mallow	X	X	X
88. <i>Stanleya pinnata</i>	Indian spinach	X	X	X
89. <i>Stephanomeria</i> sp. <i>spinosa</i>	spiny wire lettuce, gum	X	X	
90. <i>Stipa speciosa</i>	bunchgrass			
91. <i>Streptanthella longirostris</i>	wild mustard		X	
92. <i>Streptanthus cordatus</i>	wild mustard		X	
93. <i>Suaeda torreyana</i>	seepweed		X	
94. <i>Symphoricarpos longiflorus</i>	snowberry		X	
95. <i>Symphoricarpos</i> spp.	snowberry			
96. <i>Tessaria sericeae</i>	arrowweed	X	X	
97. <i>Thamnosma montana</i>	turpentine bush	X	X	
98. <i>Thelypodium integrifolium</i>	wild cabbage		X	

<i>Scientific Name</i>	<i>Common Name</i>	<i>GC/UTTR</i>	<i>YM</i>	<i>PM/RM</i>
99. <i>Typha domingensis</i>	cattail		X	
100. <i>Typha latifolia</i>	cattail	X	X	
101. <i>Veronica anagallis-aquatica</i>	speedwell		X	
102. <i>Vitis arizonica</i>	wild grape	X	X	
103. <i>Xylorhiza tortifolia</i>	desert aster		X	
104. <i>Yucca baccata</i>	banana yucca	X	X	X
105. <i>Yucca brevifolia</i>	Joshua tree		X	
106. <i>Yucca spp.</i>	yucca		X	
107. <i>Yucca schidigera</i>	Mojave yucca, Spanish		X	

NOTE: American Indian traditional-use plants present in the NNSS area are identified in the project reports entitled *Native American Plant Resources in the Yucca Mountain Area, Nevada* (YM) (Stoffle et al. 1989b) and *Native American Cultural Resources on Pahute and Rainier Mesas, Nevada Test Site* (PM/RM) (Stoffle et al. 1994b). This table includes traditional-use plants identified in the Colorado River Corridor Study (GC) and in the Utah Test and Training Range Study (UTTR) that are also present at the NNSS (see 1996 NTS EIS, Table 4-38).

Table C-2 American Indian Traditional-Use Animals Present at the Nevada National Security Site

<i>Scientific Name</i>	<i>Common Name</i>
<i>Alectoris chukar</i>	chukar
<i>Ammospermophilus leucurus</i>	white-tailed antelope squirrel
<i>Amphispiza bilienata</i>	black-throated sparrow
<i>Aquila chrysaetos</i>	golden eagle
<i>Buteo jamaicensis</i>	red-tailed hawk
<i>Callipepla gambelii</i>	Gambel's quail
<i>Canis latrans</i>	coyote
<i>Cicadidae spp.</i>	cicada
<i>Cnemidophorus tigris</i>	western whiptail lizard
<i>Canis latrans</i>	coyote
<i>Colaptes auratus</i>	northern flicker
<i>Crotalus spp.</i>	rattlesnake
<i>Eutamias dorsalis</i>	cliff chipmunk
<i>Felis concolor</i>	mountain lion
<i>Felis rufus</i>	bobcat
<i>Formicidae formicinae</i>	mound-building ant (red and black ant)
<i>Gopherus agassizii</i>	desert tortoise
<i>Haliaeetus leucocephalus</i>	bald eagle
<i>Odocoileus hemionus</i>	mule deer
<i>Ovis canadensis</i>	bighorn sheep
<i>Sauromalus obesus</i>	chuckwalla
<i>Spizella breweri</i>	Brewer's sparrow
<i>Stagmomantis spp.</i>	praying mantis
<i>Sylvilagus spp.</i>	cottontail
<i>Vulpes velox</i>	kit fox
<i>Zenaidura macroura</i>	mourning dove

NOTE: American Indian traditional-use animals are identified in the project report entitled *Native American Cultural Resources on Pahute and Rainier Mesas, Nevada Test Site* (Stoffle et al. 1994b). This table presents only a partial list of traditional-use animals present at the NNSS (see NTS EIS, Table 4-39). To date, no systematic or extensive animal studies have been conducted at the NNSS.

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