

Resources and Development Committee of the 24th Navajo Nation Council and the Division of Natural Resources Drought Tour

July 12-16, 2021



INTRODUCTION

The Resources and Development Committee of the 24th Navajo Nation Council (RDC) and staff from the Navajo Nation Division of Natural Resources conducted a drought tour across the Navajo Nation on July 12, 2021 through July 16, 2021. The purpose of the Drought Tour was to get a first-hand view of drought conditions and hear from community members and chapters on the impacts they are seeing with range conditions, livestock health, water resources, wildlife resources, and other natural resources and how the people are being impacted in their daily lives.

The tour route (itinerary attached) started in Window Rock, AZ and went to the following communities: Kinlichee, Ganado, Burnside, Greasewood, Indian Wells, Dilkon, Birdsprings, Leupp, Cameron, Bodaway/Gap, Tuba City, Pinon, Chinle, Many Farms, Rough Rock, Chilchinbito, Kayenta, Tsegi Canyon, Dennehotso, Rock Point, Round Rock, Lukachakai, Buffalo Pass, NAPI, Huerfano, Counselor, Pueblo Pintado, Whitehorse Lake, Crownpoint, and Dalton Pass. Throughout the tour, representatives met with community members, local officials, and other organizations to discuss drought impacts across the reservation.

Participants on the tour included representatives from the 24th Navajo Nation Council, Office of the Speaker, Navajo Nation Division of Natural Resources (DNR), the Bureau of Indian Affairs (BIA), the Office of the President and Vice President (OPVP), District Grazing Committee, Farm Board, Land Board, and chapters. Copies of the sign-in sheets are attached to this report.

The following is a summary of each day of the tour:

Monday - July 12, 2021

Navajo Nation Department of Fish and Wildlife's (NNDFW) Climate Change Program (CCP) began the Navajo Nation Drought Tour with RDC in Kinlichee, Arizona to visit a stream gauge that monitors the volume of water that is running in the stream. The stream gauge was installed by Navajo Nation Water Resources (NWR). Carlee McClellan, Senior Hydrologist Department of Water Resources (DWR), explained the data collected is important to monitor because the amount of water flowing in the Kinlichee stream corresponds to the amount of water that feeds into Ganado Lake.



Severely low water levels at Ganado Lake, AZ

The tour continued to Ganado Lake Dam where representatives from. The RDC members heard from different Navajo Nation Departments including NNDFW, Navajo Nation Department of Agriculture (NNDA), and DWR on the drought impacts in Ganado and surrounding areas. The departments along with BIA presented on the drought impacts affecting Ganado Lake. Ryan Barton, Hydrologist from DWR and Carlee McClellan talked about how Kinlichee stream feeds into Ganado Lake and because of drought, the lake is not being recharged and the water levels are extremely low. They stated the lake is likely going to dry up in the coming weeks. DNR Deputy Division Director, Vangie Curley-Thomas being from Ganado area talked about the history of Ganado Lake and how it serves as a source of water for farmers through the irrigation processes. Ivan Becenti from Department of Agriculture talked about the condition of the range around the Ganado Lake area. He stated the area is severely overgrazed and that invasive plant species such as noxious weeds will start to out compete the native vegetation and take over the land as range vegetation cover. To conclude the talk, RDC members each address areas of

concern with questions and comments. Informal discussions were held on how drought, a result of climate change and overgrazing, is greatly impacting the Ganado and surrounding areas. This impact is causing the land to become barren and desert-like.

RDC continued on the Drought Tour to Leupp Arizona. We arrived at one of Water Resources' weather station in Leupp, Arizona. Carlee McClellan discussed the purpose of the weather station and the need for improvements and upgrades to their pre-existing structures. Carlee stated that the Navajo Nation is a black hole when it comes to climate data meaning that there is no climate data on the reservation. He talked about how this data can be vital to the Navajo Nation for future climate analysis that can help understand drought and other natural phenomena. Informal discussions were centered around the weather station's measurements and monitoring of weather and how it collects and stores the data generated. RDC requested a proposed budget to purchase a complete weather station with installation and software upgrades that could be beneficial for collecting data.



Leupp, Arizona: Weather Station Demonstration with Water Resources



Dine Native Plants Program native seed propagation project at North Leupp Family Farms

The Monday tour concluded at North Leupp Family Farms (NLFF). NNDFW's Natural Heritage Program presented on the Dine Native Plants Program. Kelsey Jensen, Wildlife Technician with NNDFW, and Jesse Mike, Forester with NNDFW, discussed how the program collects native seeds from across the Navajo Nation to grow in the green house, a controlled environment, to use in restoration project areas to help reclaim areas on the reservations that are devastated by drought conditions, overgrazing, and erosion. Jesse talked about how native plant species are key to restoring the land to its natural sustainability processes. Kelsey then explained how native plants are tolerant to drought and are crucial to

range health. They continued to state that the Native Plants Program needs to continue their work gathering seeds and storing it in the native seed band. Jesse also pointed out the continued activity of growing Navajo native grasses is needed for future restoration projects across the Navajo Nation. These native plants are not only great for soil stability but are beneficial in preserving native plants and seeds that are becoming harder and harder to find due to overgrazing and warming temperatures across the reservation.

Tuesday: July 13, 2021

Day 2 of the Drought Tour we met in Cameron, Arizona and visited a farming location East of Highway 89, adjacent to the Little Colorado River. Guy Horsen and Stan Robbins, community members, expressed their concerns for access to water. Guy Horsen stated that one of the local water sources was vandalized and repairs are delayed due to the lengthy procurement process. This has become a huge hinderance in their operations as the time frame in which the process is finalized puts a hold on the entire operation.

Stan Robbins recommended that there needs to be a process in which there is a streamlined system for Navajo farmers that are wanting to provide a food resource to the local school systems and surrounding institutions. RDC members expressed that this was a good way to encourage Navajo community-based farms, encourage food sovereignty, and also establish a new economy in times of drought. Additionally, Stan Robbins expressed the need for a local market for Navajo farmers to be able to sell their produce to Bashas Diné Family Markets. These Navajo farmers are utilizing their farms and water available, however there is little to no market to sell their produce.

Joelynn Ashley, Navajo Nation Water Rights Commission, expressed the need for all permittees to downsize their livestock herd. Ashley stated we are in a ‘mega drought’ that has no end in sight and we have to preserve the water that we do have for future generations. Livestock owners need to understand that this is a pressing issue for many Navajos around the reservation. This sparked conversation from the RDC that every chapter should develop a drought plan to address their local issues and provide recommendations for solutions in their respected chapter.



Stan Robbins shows RDC members water sources near the community farm in Cameron, AZ

After the Cameron visit, the tour traveled to Bodaway-Gap chapter house, where we met with Chapter President Dorothy Lee and Chapter Vice President Lee Yazzie. They stated they have windmills that are not working, and earthen dams that need to be repaired. The Bodaway-Gap area is very arid, and with limited access to water and wells, the need for water is pressing to community members in the area. Community members expressed the need to downsize livestock herds and the Navajo Nation needs to address the problem of overpopulation of feral horses in the area. The tour group then visited a well that overlooks the Bodaway/Gap community. It was apparent that the well was utilized heavily by the community and many people came to fill up their water tanks while we were at the well. An elderly woman filling her water tank, stated she hauls water multiple times per day for livestock and home use. The well was designated specifically for livestock use, however she stated she uses it for home use because there is no other source of water available.

The tour moved over to the Tuba City Chapter House where we met with NNDFW’s Wildlife Manager, Leanna Begay. Ms. Begay discussed her past studies that dealt with the migration of sand dunes on the reservation and she stated that one third of the Navajo Nation is covered with sand dunes. She discussed different types of sand dune formations, and also presented some remediation strategies. This sparked discussions about proposing releasing emergency funds across the Navajo Nation to help communities mitigate the effects of drought. We visited a household on the northwestern portion of Tuba City to see a home being threatened by encroaching



Tuba City home encroached by sand dunes. The home is located on the right-hand side of photo, next to the tree.

sand dunes. With less vegetation on the ground, this means there is less soil stability causing more soil migration to occur.

The next stop was Pinon Chapter where we met Chapter officials from Pinon, Black Mesa, Forest Lake, Hard Rock, and some local community members. Local grazing officials discussed their concerns about overgrazing and the lack of water in their chapter areas. Community members discussed issues they face in their chapters such as lack of water, access to working wells, damaged windmills, and the need for feral horse removal. A concern that was made was a natural spring

that has been contaminated because of feral horses. However, one individual from Forest Lake stated that she didn't approve of how horse round-ups are currently conducted. Community members also stated that they are seeing the aquifers decrease slowly and that they have to travel further for water. A community member expressed great concerns over the issue of Peabody Coal Mine and what affects came after they pumped billions of gallons from the aquifers. It was stated that they came and stole the resources of the people and left without helping the community. They also requested status on the Agriculture Infrastructure Fund (AIF) supplemental funding for livestock feed and requested emergency drought funding.

Wednesday - July 14, 2021

The tour group visited the Chinle stream gauge, near Canyon De Chelly. DWR presented the tools and instruments they use to collect water flow data from the stream. This data is very important to understand the volume of water flowing throughout the Navajo Nation. As stated in previous days by Carlee McClellan, DWR, the Navajo Nation is in a 'black hole' of information. The reason being is that the Navajo Nation is fairly new to collecting data where as other entities have been collecting data for decades. Data collection is important to share with other entities about what is happening on the reservation. More data means that there are more statistics for the Navajo Nation. DWR has stated how the department is lacking funding for proper equipment in the field, including stream gauges, rain catchment systems, and weather stations. These are important systems that go hand in hand that play a crucial role in collecting data and sending information to satellites that collect and analyze in real time. All systems stated above could be accessed via satellite, but with outdated systems it makes collecting data harder because individuals need to go out to the data site to manually download information making it very time consuming.

From the stream gauge the tour group stopped at Many Farms Lake, which has dried up due to drought. Roland Tso, District Grazing Committee, expressed concerns for rangeland health and water resources in the area. He summarized his efforts to educate and convince livestock owners to downsize their livestock herds and let the land rest. He also expressed concerns regarding the feral cow/horse problem on the reservation and the need to rehabilitate the watersheds feeding into Many Farms Lake. He stressed the need for proper management and accountability from government entities to repair the damage to the rangeland and other natural resources. Accompanying Mr. Tso was Katherine Arthur, President of the Many Farms Chapter. Katherine Arthur stressed the need for clean drinking water for sick and elderly residents in the area as they have no access to potable water. From their talks at the lake, we as a nation really need to stress the downsize of the feral horses and cows along with livestock throughout the reservation. The need comes at a pressing time when drought is plaguing our nation and the need for water is becoming more and more of an issue.

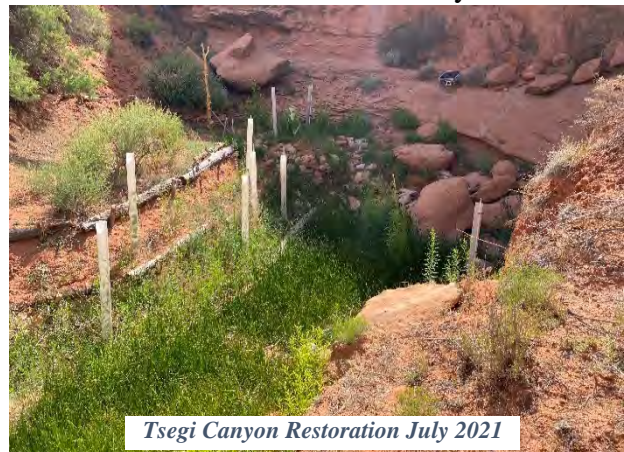


District Grazing Committee member, Roland Tso shows effects of drought to RDC, Many Farms Lake is dried up.

The tour reconvened in Kayenta and traveled into Tsegi Canyon to a natural spring restoration site accompanied by BIA Natural Resource Specialists, Renee Benally and Casey Francisco. The Tsegi Canyon restoration site is a prime example of what rest and livestock deferment can do to the landscape. It is a great example as to how unmanaged feral horses/cows can be detrimental to the land. This restoration site has been years in the making



Tsegi Canyon Restoration October 2020



Tsegi Canyon Restoration July 2021

from planning to the enactment of the plan to what it is today. The CCP assisted in erecting fences that are wildlife friendly in September 2020. In October 2020 the NNDFW's CCP and Diné Native Plants Program assisted Fred Owen Phillips Consulting (FOPC) with creating Zuni bowls (rock structure creating water settlement), one rock dams (rock structures across a streambed slowing water flow), planting native grasses, collecting and planting cottonwood/willow poles to increase soil stability and decrease erosion. After the October project local ranchers and BIA removed feral horses and cows from the restoration site.

The next site visited in Tsegi Canyon was a spring further upstream where the team built Zuni bowls, along with one-rock dams, and dispersed native grass seeds and planted cottonwood/willow poles around the area. The reason for creating the one-rock dam structures was to help



Tsegi Canyon Restoration October 2020

retain water in the area to promote recharge to the aquifers. Prior to creating one-rock dam structures, water and sediment would be lost to run off. Now, with the creation the small structures like one-rock dams it allows

more water to be retained creating bank stabilization and native vegetation growth. Both spring sites have seen significant growth in cottonwood and willow trees along with native grasses.



Tsegi Canyon Restoration July 2021

From the nine-month period when restoration efforts began there has been a dramatic difference in the amount of vegetation that has regrown in this area. The restoration site shows, clearly, the detrimental effects feral horses and cows have on the land due to unregulated/uncontrolled grazing. With a little rest the landscape can begin to heal and the Tsegi Restoration project is a prime example to what could be done to help Navajo lands heal. Think of the change that can be done to the other natural springs across the Navajo Nation if we exclude feral horses and cattle from watersheds and riparian areas.

Thursday - July 15, 2021

The drought tour met with chapter and community members at Kayenta Chapter House. Various chapter officials spoke about the effects of the drought and how the different communities in the area are dealing with the problem. One example is that local ranchers are voluntarily downsizing their livestock herds in response to the lack of water and forage. After the community members spoke about the effects they are experiencing from the ongoing drought and stated that the riparian areas are in need of restoration as some of the native plants



Livestock stand around a dry water trough and on barren ground 1 mile east of Baby Rocks, AZ

being used for ceremony and traditional structure are disappearing. Kayenta community members are also worried about the firewood they collect as some locations are being restricted and other places are drying up and dying. This is a direct consequence from climate change as the forested areas are receiving less precipitation to sustain them in the drought. They also stated that there should be water restrictions on people that live within the township as people in the surrounding areas are being restricted by NTUA as a result of the drought. Continuing the discussions, community members stated that there are old, outdated wells that need to be repaired or

replaced depending on how damaged they are. The American Rescue Plan Act (ARPA) also entered the discussion as there was talk about the \$1.8 billion dollars that is going to the Navajo Nation. ARPA funding should be used to repair existing windmills and drill new wells for community use. Chapter officials also recommended an incentive program for livestock owners to sell their livestock. To conclude the community members concerns, they said that this discussion about downsizing livestock is a sensitive subject as many people rely on their livestock to eat, and provide a source of income for their families.

The tour then met at Dennehotso Chapter and were met by Chapter Manager, Greg Bigman and other community members to discuss the effects of drought in the area. Community Members said that they notice that the clouds do not reach their area anymore and just evaporate before reaching the ground (virga process). The community members expressed great concern over the lack of rain in the area. One individual stating that people from other communities are coming to Dennehotso to fill up their water barrels and this individual did not like that. This individual claimed ownership to a windmill, and stated that she owned the water and people were stealing water. This claim is untrue as windmills and water belong to the Navajo Nation for community use. This is similar to claims that grazing permittees view their permit as private ownership to grazing lands and control over access to natural resources. However, it is important to note these perceptions can lead to serious confrontations amongst community members as the drought continues. The RDC emphasized that the priority during this drought is human life, and livestock is secondary.

Next, Jaime Begay, a Wildlife Technician from the NNDFW's Wildlife Management Program discussed her disease study on the three desert bighorn sheep populations in the Utah area of the Navajo Nation. A heavily neglected area of the tour thus far, and an eye-opener as a majority of the people only discussed concerns for their livestock and personal use of water. It is important to note that the drought severity is causing disease outbreaks and pest infestations amongst wildlife, livestock, and the forest tree populations. The drought is also increasing the likelihood of transferring diseases from domesticated livestock to wildlife such as the desert bighorn sheep populations in Utah-Navajo. Jaime described the dead carcasses of animals where there were historically watering holes. The bighorn sheep populations have known about these sources of water for decades and heavily rely on these scarce sources of water. The natural springs in the area are completely degraded from non-stop usage from livestock and feral animals. Jaime stated that there are three bighorn sheep populations in the area, and the Department is heavily concerned for their health. Jaime stated that there are too many donkeys, feral horses, and feral cattle for the land to sustain, causing many bighorn sheep populations to decline.

Delegate Nathaniel Brown stated there are some available funds to address these issues if the Navajo Nation Council allocates funding from the ARPA to address these needs that Navajo communities are experiencing. He stated that there needs to be a waterline from the San Juan River going into the communities in the Northwest Navajo Nation for human consumption, agriculture, and livestock use. Chairman Rick Nez, stated a white paper/assessment of the Drought Tour will be developed.

This will enable the RDC to properly convey the information collected from the Drought Tour to the rest of the Navajo Nation and the Navajo Nation Council.

The next stop on the tour was at a Lukachukai stream gauge where Carlee McClellan, DWR, presented on the importance of collected data on the Lukachukai watershed. There were discussions of how there is a noticeable decrease in flow of the wash as the drought worsens. This location is also a source of water for the local wildlife, but mostly cattle and horses utilize this area. Cattle remains



Cattle remains located in a dry streambed in the Lukachukai area

were found near this location. Discussions led to the need for a restoration plan and funding proposal from DNR. Restoration areas will be identified and prioritized for three years of ARPA funding.

Roland Tso, Many Farms District Grazing Committee member, spoke about the lack of resources ranchers face when they want to downsize by selling their cattle. The majority of the Navajo ranchers today do not have the necessary equipment and trailers to haul livestock to sales off the Navajo Nation. There is a need for regional livestock sales within the Navajo Nation to minimize the burden of hauling livestock off the Navajo Nation. Roland Tso stated livestock buyers could be brought to the Navajo Nation instead of having ranchers haul long distances to sell livestock. He expressed concern for access to trailers, gas money and more as people transport their cattle to off-reservation auctions. He also said that there were flaws in the way that citations are handled as it's written that livestock owners are given 30 days to adjust their herds, however it takes longer than that to sell them. He also recommended that these citations go directly to the Prosecutor's Office, to ensure enforcement action is taken.

Next, the tour group visited a streambed restoration site behind the Lukachukai trading post. Jesse Mike, NNDFW, demonstrated the types of plants/trees needed to be transplanted and reseeded in Navajo riparian areas. These plants included native grasses and native willows. These plants will act as the structure to hold sediment in place when there is a flooding event. Jesse also said that the root structure of these plants will act as a sponge that reserves water in the soil which sustains the plants that hold the sediment in place, increases biodiversity, and restores the health of the soils. Jesse stated his Program, Dine Native Plants Program is working to restore the watersheds of Lukachukai Wash, Asaayi Creek, and Wheatfields Creek. He stated the natural meandering of the creek has been erased and this caused the degradation of the habitat that native plants and wildlife use. The natural meandering of the streams also allows the sediment to collect instead of rushing down the wash and further eroding the land. One-rock dams and other natural small check dams (like the ones constructed in Tsegi Canyon) can be utilized to slow the velocity of the water and also add to the settlement of the sediment in the stream as pools will collect sediment and debris from eroding the land even more. Jesse Mike and Gabryl Sam, NNDFW, demonstrated the importance of the restoration as the Navajo name for Lukachukai, AZ was a descriptive term meaning 'where the reeds grow.' There were no reeds to be found at the bottom of the dry streambed. Gabryl stated that there needs to be more restoration projects on the Navajo Nation to protect the streams and springs. He also talked about the importance of getting youth to work on these restoration sites, stating that the more youth are involved in projects, the more they will understand the importance of restoring our lands. In return, the youth can be a part of project in their area and will want to protect the area that they helped to restore as they will build a deeper connection to the land.



Jesse Mike stands in the dry stream bed behind Lukachukai Trading Post as he explains the importance of stream restoration and resting the land from overgrazing

Gloria Tom, NNDFW Director, stated that there are numerous solutions to these problems as she recommended getting the Navajo Nation Agriculture Youth Conservation group, and other youth conservation corps involved in these restoration projects. After taking about the youth conservation the conversation entered the discussion of working with the farm boards and NNDA to develop community-based restoration projects, employing the local youth and involving the DNR and the local chapters to work together on restoration sites in different communities.

Delegate Kee Allen Begay, Jr. introduced the idea of incorporating this type of learning into a more formal setting as he proposed to integrate restoration planning, soil science, climate science, climate change, range management, and more into local schools' curriculum, spanning from grade school to tribal colleges. He stated that the Navajo Nation needs to produce more Navajo professionals to address these issues on the Navajo Nation as they will be able to address local issues with familiarity and the public will be more comfortable working with a local rather than an outsider. RDC want to incorporate restoration work into community land use plans.

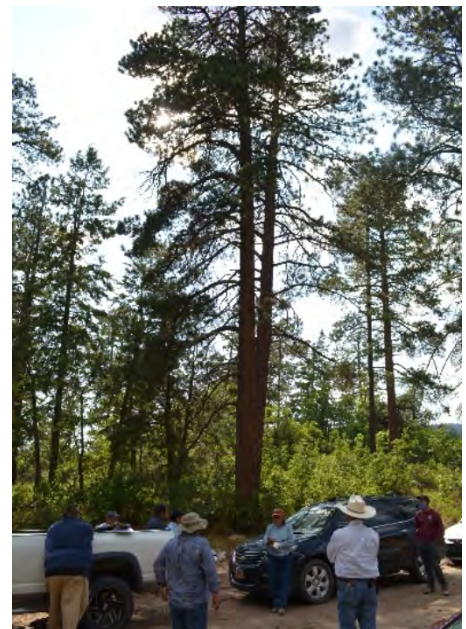
At Buffalo Pass, representatives from Navajo Nation Forestry Department were not available. However, Discussions focused on issues climate change impacts on forest health and forest management.

Gabryl Sam talked about previous research the Navajo Forestry Department conducted in an effort to understand trends and drivers of forest productivity. They utilized Continuous Forest Inventory (CFI) plots by taking tree core samples of study trees to determine effects of climate change on forest health and productivity. The study findings suggest the potential for drought stress on the Navajo Nation forests is considerably high. Discussions then continued to the need for more internships on the Navajo Nation to help Navajo students make the transition to higher learning as well as to add to the low amount of natural resource data collection occurring on the Navajo Nation. It was also stated that there are multiple barriers that exist for Navajo college students to collect data and conduct research on the Navajo Nation. There needs to be an effort to make it easier for students in higher education to work with DNR to collect scientific data and do scientific research in their specific fields of study on the Navajo Nation.

Gloria Tom stated that there needs to be a precedence set as the Navajo Nation forests are in dire need of proper management and are at a high risk of large tree mortalities, bark beetle infestations, disease outbreaks, and overgrazed forest lands.

Roland Tso also stated that he has been noticing that the cattle's behavior from the communities at the base of the Chuska Mountains are changing as they are having increasing difficulty finding their cattle when it comes to rounding them up. He states this is because the lands below are heavily grazed on and degraded, therefore the cattle head into the mountains to find forage and shelter from the Navajo ranchers. He stated that people are moving their cattle into the mountains earlier and keeping them up there longer to graze.

Effie Delmar, BIA Eastern Navajo Agency, and Ferdinand Notah, Program and Project Specialist, NNDA, said that there are temporary permits that are established to keep ranchers within sustainable forest health parameters. These permits that are issued to particular locations on the Navajo Nation determine how long a rancher can keep their livestock in the mountains. It is apparent that some ranchers leave their cattle in these grazing areas for longer time periods than their permits allow, and the land cannot sustain the number of livestock and animals that forage on the land. There is a need for range health monitoring in the mountains as well as all across the Navajo Nation.



Drought tour group discusses drought impacts on forest health and productivity at Buffalo Pass

Friday - July 16, 2021

RDC members and other Drought Tour attendees met at Navajo Agricultural Products Industry (NAPI) Headquarters. Tour attendees met with Eastern and Northern agency chapters and Land Board officials, and BIA representatives and discussed drought impacts in and around the surrounding areas and chapter regions in Eastern Agency. Chapter officials and Land Board members all agreed the land is severely impacted by drought and overgrazing. Chapter officials and Land Board members all stressed the need to encourage permittees to downsize livestock herds. Nageezi Land Board member, Carlos Arviso, talked about how he has been trying to round up feral horses to help ease overgrazing but because of land status, it is very difficult. Most if not all of Eastern



Eastern Agency drought and overgrazing impacts

Agency is checker board consisting of State, Navajo Trust, Bureau of Land Management (BLM) and private lands. Because of jurisdictional boundaries, feral horses on trust lands often run to other land jurisdictions when being pursued and they cannot be captured. Currently, there is a draft tri-party agreement between the Navajo Nation, BIA, and BLM addressing these jurisdictional issues and the need for formal agreements between these



A breached earthen dam in Huerfano community that was once a source of water for wildlife and livestock. There is a need for standardize engineering designs for earthen dams across the Navajo Nation.

parties. This agreement is not finalized and has not been enacted. Another challenge faced by land users is knowing where the different land status boundaries are. It was recommended that chapters and officials have access to land status boundary maps. The discussion continued with Leo Watchman, NNDA Director, spoke on issues related to overgrazing and drought conditions. He stressed how livestock downsizing is key to restoring native vegetation to the land.

The tour continued to Huerfano Chapter to see the effects of overgrazed land and a washed-out earthen dam. Chapter officials informed the group about how the community earthen dam washed out over 20 years ago. The Huerfano community have been asking for help from the Navajo Nation to restore

the earthen dam, but the dam has yet to be repaired. This earthen dam served as a watering source for all grazing livestock and wildlife in the community. Ivan Becenti, NNDA, continued the talk on range health in that area. He stated that the health of the range was severely damaged and that it needs time to rest and rejuvenate.

The tour continued to Counselor, NM and Daniel Augustine, a Land Board member, from Counselor Chapter met with the tour group to address the impacts of drought in the region. Mr. Augustine stated his community has been in a drought for over 20 years. He conveyed the windmills in his region are nonfunctional and the earthen dams are in dire need of repair. He showed trees dying and said many evergreen trees are infested by bark beetles and



Counselor, New Mexico: Drought Impact Report by Land Board Member

other diseases; all results from drought and other climate change effects. Augustine also talked about how community members confront him about the drought and the need for water, which has been a prominent issue throughout this tour. Augustine also reported feral horses are destroying the land by overgrazing. He stressed that in the Counselor area there are over 240 feral horses. He stated that it is very difficult to address the feral horse problem due to the checker board land status and stressed the need for the approval of the Tri-Party agreement. Augustine stated the need for assistance in developing a Drought Plan to help mitigate the negative impacts of drought in his region.

The tour continued to Pueblo Pintado to see a modern up-to-date weather station that was installed by the University of New Mexico. Carlee McClellan stated that the weather station model in Pueblo Pintado should be the model to use across the Navajo Nation. He reiterated how weather stations are vital to collecting climate data to help mitigate the impacts of drought and serve as a valuable resource to the Navajo Nation. He argued how this type of data can help bring funding to the Nation by data sharing programs with other governmental entities and private organizations. Dr. Lani Tsinnajinnie (PhD) discussed how important it is to have climate data as a resource to help address climate issues in a given region. She stated that this type of data can help address drought impacts and other climate change issues by developing mitigation plans.



Pueblo Pintado, New Mexico: Weather Station Demonstration

The tour continued to Whitehorse Lake Chapter. The group saw firsthand the devastating effects of overgrazing and drought working together to create barren lands. Clyde Yazzie, Whitehorse Lake Grazing Official, talked about the need for livestock downsizing to restore the land. He showed us what drought in conjunction with overgrazing does to impact rangeland. The group then met with Herbert Enrico, Chairperson District 20 Grazing Official and Chairperson for Joint Land Board. Herbert reiterated the need to drastically downsize livestock herds and get control of the feral horse/cow problem on the reservation. He stressed the need to get a hold on the feral horse populations to reduce the negative impacts they are causing on rangeland by overgrazing in the region. He also expressed the need to repair windmills and earthen dams and to address illegal dumping occurring in Eastern Agency.



Whitehorse Lake, New Mexico: Extremely poor range conditions

The final stop on the Drought Tour ended at Dalton Pass at a reclaimed abandoned coal mine site. Abandoned Mine Land Reclamation's (AML) Gilbert Dayzie presented the Dalton Pass reclamation project. The AML department is reclaiming and restoring abandoned mines by creating erosion control structures and fencing. Melvin Yazzie, AML- Principal Mining Engineer, discussed how abandoned mine restoration can channel water runoff.

NNDFW Zoologist Brent Powers and Wildlife Biologist Jessica Fort presented the importance of livestock downsizing and feral horse management. Brent stressed the need to restore overgrazed areas not just for livestock, but also for wildlife. He stated wildlife are stressed because of competition with livestock and feral horse for resources like forage and water. Brent also expressed concern for the loss of species resulting from unregulated land use, such as the Kit Fox population. Brent also stated that immediate action needs to take place as more wildlife populations are declining as a result of loss of vegetation, less water, poor habitat, and unregulated land use. Jessica discussed the impacts of feral horses on the land. She stated that



Dalton Pass, New Mexico: Abandon Mine Reclamation

feral horses consume more forage than any other animal on the Navajo Nation. Jessica provided an estimate of 67,000 feral horses on the Navajo Nation. She stated that the current Navajo Nation feral horse population is consuming 380,000 tons of forage a year. This is enough to fill two massive cargo ships.

RESULTS/ RECOMMENDATIONS

With drought becoming more apparent across the Navajo Nation, the need for immediate action is paramount for saving the Navajo way of life. It is clear that the Navajo people continue to rely heavily on livestock and farming, however the drought combined with mismanaged land and unregulated land usage is threatening the health and wellbeing of the Navajo Nation. Throughout the week, drought tour participants experienced highs and lows in seeing firsthand the devastating effects of drought. Numerous observations of degraded lands combined with no

water, poor vegetation, too many animals on the land and too many people expressing concerns about drought impacts to their livelihood invokes an overwhelming desire to take responsibility for mismanagement of our natural resources. During the course of the week, tour participants observed efforts to correct this mismanagement through land restoration projects and efforts to educate our communities and bring communities together to heal our lands. Although small, these restoration efforts are a large part of the solution, along with downsizing of livestock herds, livestock deferment, immediate removal of feral animals on the landscape, rangeland health and water resource monitoring, infrastructure repair and maintenance, political support, and financial commitment from leadership of the Navajo Nation.

Based upon the results and observations of the Drought Tour, the following recommendations are made to Navajo Nation Leadership:

- Downsize livestock herds – Livestock owners
- Defer livestock grazing for up to 5 years – Livestock owners
- Provide funding to replace outdated water/weather monitoring equipment and water infrastructure - DWR
- Provide incentive programs for livestock owners to downsize their herds - NNDA
- Implement active range management monitoring, including range health monitoring - NNDA
- Establish regional livestock sales across the Navajo Nation - NNDA
- Develop a grazing season for the commercial forests of the Chuska Mountains and Fort Defiance Plateau with active enforcement from DNR law enforcement – DNR/BIA
- Immediately remove feral horses from the land - NNDA
- Develop a land restoration plans and three-year funding proposal from ARPA funding - NNDFW
- Finalize and Implement the Tri-Party Agreement for Eastern Agency – DNR/BIA/BLM
- Each chapter formally adopt a Drought Response Plan – NN Chapters
- Provide chapters with emergency funding for emergency drought response – NN Council
- Incorporate restoration plans in the Community Land Use Plans with Chapters – NN Chapters
- Submit Navajo Nation grazing citations directly to NN Prosecutor’s Office for adjudication – District Grazing Committee/NNDA
- Involve youth in restoration projects - DNR
- Develop a standard, engineered dirt tank design for Chapters to use - AML
- Provide updated land status maps showing the different land status and jurisdictions in Eastern Agency – Navajo Land Department

ACKNOWLEDGEMENTS

The Resource and Development Committee of the 24th Navajo Nation Council and the Division of Natural Resources would like to express their gratitude to the Navajo Nation Chapters, local officials, and community members all across the Navajo Nation who were instrumental in showcasing the impacts the drought is having on the Navajo livelihood.

RDC and DNR would also like to express their gratitude to the Delegates of the 24th Navajo Nation Council, Office of the President and Vice President, the Office of the Speaker, and the Bureau of Indian Affairs for participating in this tour and providing your insight and feedback to discussions and recommendations during the drought tour.

ITINERARY

Navajo Nation Drought Tour

RDC/DNR/NNDFW/Climate Change Program

July 12, 2021 – July 16, 2021

Monday July 12, 2021

Meet at Window Rock, Fairgrounds at 8:00 a.m.

We will proceed along route 264 to Burnside → Cornfields → Greasewood Springs → Indian Wells → Dilkon → Birdsprings → Leupp → Flagstaff

- Kinliche Stream Gauge with Carlee McClellan, Sr. Hydrologist
- Ganado Lake – Low water level
- North Leupp Farms Weather Station (35.335942,-111.004256), with Carlee McClellan, Sr. Hydrologist, DWR
- Native Plant restoration in Leupp with Kelsey Jensen, Wildlife Technician, Native Plants Program and Jesse Mike, Forester, Native Plants Program

Tuesday, July 13, 2021

Meet in Cameron, AZ at Burger King at 9:00 a.m.

We will proceed along Hwy 89 to Tuba City → Pinon → Chinle

- Cameron Farms – Stan Robbins
- Bodaway-Gap Chapter- Met with Chapter President and Grazing Officials
 - Visited water station/well for livestock only, individual stated that she was using for drinking water as well.
- Sand dunes in Tuba City with Leanna Begay, Wildlife Manager, NNHP
- Pinon Chapter House – Community and Chapter Officials stated their concerns

Wednesday, July 14, 2021

Meet in Chinle, AZ at Bashas Shopping Center at 8:00 a.m.

We will proceed along US-191 N to Many Farms → Rough Rock → Chilchinbito → Kayenta → Tsegi Canyon → Kayenta

- Chinle Stream Gauge (36.154738,-109.538185), with Brennan Curtis and Crystal Cordova, DWR
- Many Farms Lake with Roland Tso, Grazing Official and Chapter President

- Tsegi Restoration Project with the Climate Change Team, NNDFW along with Renee Begay and Casey Francisco, BIA

Thursday, July 15, 2021

Meet in Kayenta, AZ at Chapter House Center at 8:00 a.m.

We will proceed along US-160 E and US-191 S through Dennehotso → Rock Point → Lukachukai → Cove → Red Valley → Shiprock → Gadiahi → Farmington

- Kayenta Chapter house with community members and chapter officials.
- Dennehotso Chapter house with community members and chapter officials.
- Lukachukai Stream Gauge (36.474956,-109.356120), with Carlee McClellan, Sr. Hydrologist, DWR
- Restoration Project proposal at Lukachukai Trading Post with Jesse Mike, Forester, NNDFW
- Drought impacts on the forest in the Chuska Mountains at Buffalo Pass

Friday, July 16, 2021

Meet at NAPI Headquarters at 8:00 a.m.

We will proceed along Co Rd 7010 to Huerfano → Counselor → Pueblo Pintado → Whitehorse Lake → Crownpoint → Coyote Canyon → Twin Lakes → Window Rock

- NAPI HQ Grazing Officials and Land Board Members along with Leo Watchman, Agriculture Manager
- Grazing Official Mr. Augustine, Counselor, NM
- Pueblo Pintado Weather Station (35.972225,-107.633592), with Carlee McClellan, Sr. Hydrologist, DWR
- Drought impacts on ranchers with Herbert Enrico, District 20 Chairman, Grazing Committee at Whitehorse Lake Chapter
- Drought impacts on springs in Coyote Canyon with Brent Powers, Zoologist, NNDFW

SIGN-IN SHEETS

DAILY TEMPERATURE LOG

DATE	TIME	NAME	Phone Number	TEMPERATURE READING	SYMPTOMS?
7/12/2021	10:22	Cortee M.		97.5	Y/N
1/2021	10:25	Kelvin M.		97.1	Y/N
1/2021		Dilgerman C.		97.5	Y/N
1/2021		Travis Terborgh		98.6	Y/N
1/2021		Garabe		97.5	Y/N
1/2021		Juan Becerra		97.3	Y/N
1/2021		William Stewart		97.5	Y/N
1/2021		Mark Fiskland		96.8	Y/N
1/2021		Levi Tami		97.3	Y/N
1/2021		Kee Allen Begay Jr.		97.7	Y/N
1/2021		Tucell Mackey		97.3	Y/N
1/2021		Tim Evedone		97.5	Y/N
1/2021		Thomas Walker		97.5	Y/N
1/2021		Davis Filford		97.1	Y/N
1/2021		Danavan Quintana		98.6	Y/N
7/12/2021		Chloe		97.7	Y/N
7/13/2021				97.8	Y/N
7/13/2021	9:40	Grady Sam		97.1	Y/N
7/13/2021		William Stewart		97.5	Y/N
1/2021		Marwan Dimilia		98.6	Y/N
1/2021		Chloe Nee		98.6	Y/N
1/2021				98.0	Y/N
1/2021		Tracy Ann Ashley		97.7	Y/N
1/2021		Mark Fiskland		97.3	Y/N

Navajo Nation Drought Tour
RDC/DNR/NNDFW/Climate Change Program
July 12, 2021 @ Pinon Chapter

SIGN - IN SHEET

1	<u>Abbas Tashara</u>	29	<u>Nadine Navindrankura Hual Rock TNA</u>
2	<u>Stella Bizahaloni, Pinon chap</u>	30	<u>Larry Billeh, Pres. BIK Mesa chpt</u>
3	<u>Percyanna C. Brown P.A.</u>	31	<u>Bessie S. Allen - Pinon</u>
4	<u>Rose Lee Black Mesa ^{Chapter} RDC</u>	32	<u>Glenn Choo Black Mesa chptn</u>
5	<u>Laelyn Bizahaloni Pinon chapter</u>	33	<u>HARVEY DEAL (Black Mesa)</u>
6	<u>Dorothy R. Yazzie BIK Man/DYNB</u>	34	
7	<u>Daisy Kingpin Black Mesa chapter/DYNB</u>	35	
8	<u>Carmelita Choe - Pinon Begay</u>	36	
9	<u>Lynn Dean Black Mesa</u>	37	
10	<u>Tawann Begay - Hual Rock Chapter</u>	38	
11	<u>Mark Freeland - 24th NNC</u>	39	
12	<u>Kee Allen Begay JR ^{24th} NNC</u>	40	
13	<u>Rick Nez RDC - 24th NNC</u>	41	
14	<u>William A. Stewart ^{24th} NNC</u>	42	
15	<u>Thomas Walker Jr ^{24th} NNC</u>	43	
16	<u>Melinda Cocco ^{24th} NNC</u>	44	
17	<u>Jimmy Yellowhair ^{24th} NNC</u>	45	
18	<u>Juan T. Begay Jr</u>	46	
19	<u>FRANCIS HOMIE BIK MESA</u>	47	
20	<u>Wilfred Big - NMDA</u>	48	
21	<u>Dannon Curtis - DNR/WMB</u>	49	
22	<u>Roy Beno - Pinon chpt.</u>	50	
23	<u>Jesse Thompson Teeslo - Hual Rock</u>	51	
24	<u>Nicholas Chixchilly - NNDFW</u>	52	
25	<u>Gloria Tom, NN Dept of Fish & Wildlife</u>	53	
26	<u>Ernest Grayeyes - Navajo AMLR Dept.</u>	54	
27	<u>Amos Johnson, BIA/NPL</u>	55	
28	<u>Rudy Shebala NN DNR</u>	56	

DAILY TEMPERATURE LOG

DATE	TIME	NAME	Phone Number	TEMPERATURE READING	SYMPTOMS?
7/14/2021	9:50AM	Nicholas Christy	NNDFW	97.5	Y/N
1/2021		Grace Sam	NNDFW	97.3	Y/N
1/2021		Dean Grandle	BIA-Chinle	97.3	Y/N
1/2021		Peter Lefebvre	BIA-NRO	96.9	Y/N
1/2021		Glenn Town	NNDFW	97.5	Y/N
1/2021		Melinda Grace	Speakers Office	97.5	Y/N
1/2021		Haunette Street Wilson Street	NN Council-RDC	97.3	Y/N
1/2021		Davis Filfred	NNDFW OPUP	97.1	Y/N
1/2021		Hermond Daniels	NN Council-RDC	97.1	Y/N
1/2021		Keith Howard	NNDFW	97.1	Y/N
1/2021		Brennan Curtis	Water Resources	97.5	Y/N
1/2021		Rickie Nez	NN Council-RDC	97.5	Y/N
1/2021		Mark Freeland	RDC	97.5	Y/N
1/2021		Wilfred Piquay	NNDA	97.3	Y/N
1/2021		Kristen Bitts	NNDA	97.1	Y/N
1/2021		Kee Allen Piquay	NN Council-RDC	97.5	Y/N
1/2021		Thomas Wadell Jr.	NN Council-RDC	97.3	Y/N
1/2021		Cristina Concha	Water Resources	96.4	Y/N
1/2021		Gilbert Payne	Newsp. Hall - Rec. Dept.	97.7	Y/N
1/2021					Y/N
1/2021					Y/N
1/2021					Y/N
1/2021					Y/N

Day #4 RDC Drought Tour
DAILY TEMPERATURE LOG

DATE	TIME	NAME	Phone Number	TEMPERATURE READING	SYMPTOMS?
7/15/2021	11:40AM	Nicholas Christilly	NNDW	98.6	Y/N
1/2021		Carter McChesney	Water Resources	98.4	Y/N
1/2021		Darrell Felt	↑	97.8	Y/N
1/2021		Darlene Yezic	Community Member	98.0	Y/N
1/2021		William Dayne	NAMC RD - Skyrack	98.0	Y/N
1/2021		Jill Spittler	NNDW LaLiga Non-profit	97.7	Y/N
1/2021		Janie Pinyan	NNDW	97.7	Y/N
1/2021		Olivia Tava	NNDW	98.2	Y/N
1/2021		Tuller Bessy	Denker's VP	97.8	Y/N
1/2021		Ferdinand Neta	NNDW Dept Agriculture W/R	99.1	Y/N
1/2021		Victoria Caccia	NNDW - OFFICE OF THE SPK	97.7	Y/N
1/2021		Shania Breaux	LDA - Pickle Net	98.2	Y/N
1/2021		Ronco Hoshale	LDA - Brown	97.7	Y/N
1/2021		Grady Sen	NNDW	97.5	Y/N
1/2021		Perman Curtis	DNR - WMB	98.6	Y/N
1/2021		Greg Bigner	Chapter Manager/Denver	97.5	Y/N
1/2021		Erin Folsie	Community Member	98.0	Y/N
1/2021		Mark Kriebel	RDC -	97.5	Y/N
1/2021		Pickles Noz	RDC	98.7	Y/N
1/2021		Nathaniel Brown	NN Council	98.7	Y/N
1/2021		Terriene Tish	Community Member	98.6	Y/N
1/2021		Patricia Pauline Deswulf	Community Member	97.5	Y/N
1/2021		Michelle Davis	LaLiga Non-profit	98.6	Y/N
1/2021		Wendee Romero	LaLiga Non-profit	98.4	Y/N

Drought Tour

Friday July 16, 2021

NAME	DEPT.	CONTACT
Dave Zeller	NAPI CEO	505-566-2603
Rick Naez	24th NNE RDC	928 287-4725
Bert Sandoval	NNWRC-Shiprock	505-635-8657
Darrell Fatt	NN-WMB	928-515-4107
Carlee McClellan	NN-WMB	928-349-1101
Seraphine Woody	Huerfano Chapter ^{Land} Board	505-635-8567
Wanda Cocco	OOS/LA	WTHM
DAVID FURRER	OPVP/ESA	X7000
Effie Delmar	BIA-ENA	505-786-6101
JAMES DAYZIE	BIA/ENA	505-786-6131
LEONARD HUNT	NNDA	928 871-6605
Ivan Beaud	NNDA	928 871 6635
Ferdinand Notoh	NNDA	928-871-6605
Lambert Chere	BIA-Shiprock	505 368 5090
Kurt	NNDFW	928 561 4916
Roxanne Lee	Upper Fruitland - Grady Rep	505-947-5977
Lisa Marie Byrd	Upper Fruitland V.P.	(505) 686-2224
Dora Smith	Upper Fruitland Sec/Treas	(505) 686-7544
Melvin H. Yazzie	NN DNR-AML	505-368-1228
Kee Allen Begay Jr	24th NNE	602-575-1404
Ferrari Arviso	Nageezi Chapter Member	505 947 8886
Carlos Arviso	Nageezi Land Board	505-330-2175
VERONICA D. PABLO-TSO	Huerfano Land Board	(505) 860-7501
Mack Freeland	m.freeland@nangov-nangov.org	928 259 1420
Plain To	AIN Root Fish in Wildlife at m.pandhu.org	928-871-1111

DAILY TEMPERATURE LOG

DATE	TIME	NAME	Phone Number	TEMPERATURE READING	SYMPTOMS?
7/16/2021	10:40 AM	Victorios Olisadally	NNDW	97.7	Y/N
1/2021		Carlee McWilliam	Water Resources	97.8	Y/N
1/2021		FORNARD NATH	NDA 928-871-6005	98.2	Y/N
1/2021		Melinda H. Yazzie	NNDW	99.4	Y/N
1/2021		Cedric Sam	NNDW	97.5	Y/N
1/2021		Darrell Fatt	Water Resources	97.7	Y/N
1/2021		Lisa Marie Bayard	(505) 480-3224 UFEVD	97.5	Y/N
1/2021		Tom Zambor	904 466-7414	97.5	Y/N
1/2021		Rachael Lee	Hopper Meadow GC	98.0	Y/N
1/2021		Jefferson in Daniels	24th. nnc	98.4	Y/N
1/2021		Earl Sengdonal	NNDW	98.5	Y/N
1/2021		Galvin Tom	NNDW	98.2	Y/N
1/2021		Scraphing Woody	Land Board 505 635-858	97.8	Y/N
1/2021		Velinda Cooce	ODN/CSA	97.7	Y/N
1/2021		JAMES DAYZIE	BIAENA 505 786 6131	97.5	Y/N
1/2021		EFFIE DELMAR	BIAENA 505 486 401	96.4	Y/N
1/2021		Thermon D. TSOV	(505) 860-7501	98.7	Y/N
1/2021		Kac A. Bager JR	602-575-1105	97.7	Y/N
1/2021		Donna (Lina)	305 2075	99.5	Y/N
1/2021		KAC A. BAGER JR	NNDW 505 551 476	97.1	Y/N
1/2021		Mark Freund	KDC	97.7	Y/N
1/2021		Rekka Nete	RDC Clinic	98.7	Y/N
1/2021		Ferran Arviso	505 478 800 Nageezich	97.5	Y/N
1/2021					Y/N