Summit Lake Paiute Tribe

Natural Resources Department

Annual Newsletter

April 2022

Photo Credit: Rachel Redding

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Photo: Dustin Hannasch

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Photo: Rachel Redding

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Roads and Conditions

On March 22, 2022 the SNOTEL weather station recorded 14.9 inches of accumulated precipitation, and temperatures ranged from highs around 50 to lows around 3 degrees Fahrenheit. The SNOTEL Station has recorded continuous presence of snow since on December 10, with the deepest amount recorded as the current 31 inches.

Although we are thankful for the little snow we have gotten, it has left roads wet, muddy, and in some cases impassable. The road to the Reservation that runs past Soldier Meadows Ranch is rutted and washed out along the route, and is completely impassable at the base of the Reservation.

Access to the Reservation is also impassible from the north by Idaho Canyon. Additionally, at this time, many of the roads within the Reservation are impassable due to snow drifts and will be extremely muddy once the snow melts. Travelers are advised to use extreme caution. Bring a shovel in case of getting stuck, and extra food, water, and appropriate clothing in case you need to wait for or get help. Be sure to tell someone your travel plans and when to expect to hear from you.

Returning Employees

James Waddell, Fish and Wildlife Biologist

Hello, my name is James Waddell, and I am beginning my fourth year as a Fish and Wildlife Biologist with the Natural Resources Department. I have a master's degree in Natural Resource Management from Oregon State University, and I have over 15 years of field experience working on several diverse projects ranging from bear and wolf research to private consultation with government agencies. I am captivated by natural resource management issues with particular concern regarding the conservation of threatened and endangered species.

I am excited to continue projects investigating bat and bird species diversity on the Reservation this summer and I am proud to serve the Summit Lake Paiute Tribe in their efforts to conserve these species and the landscape upon which they rely.

Dustin Hannasch, Fish and Wildlife Biologist

Hello! My name is Dustin Hannasch. I feel both great honor and privilege to be one of your Fish and Wildlife Biologists. I am beyond excited to return to The Summit Lake Reservation for my third year! For my third year I look forward to continuing to help manage your Lahontan cutthroat trout. I have been lucky enough, over the last two field seasons, to have experienced first-hand what an absolute treasure these fish are.

I have spent much of my time working with a diverse handful of other fish species in states such as Colorado, Montana, Idaho, Wyoming, and California. I can assure you that these are the most awe-inspiring creatures that I have ever worked with. Being with these fish and being immersed into their pristine surrounding habitat, I admit I have fallen in love with this prodigious place. I look forward to serving you all for another year in 2022! I love what I do at Summit Lake but when I do have free time I like to fish, hunt, mountain bike, hike, mountain bike, rock climb, rollerblade, longboard, paddleboard, swim, snorkel, garden and cook.

Rachel Redding, Fish and Wildlife Biologist

It's great to be back! The past two seasons have flown by, and I am still happy to be a part of the Natural Resources Department as one of your Fish and Wildlife Biologists. I am thrilled to continue my work here as the head of the Sage-Grouse Project where I am fully dedicated to the conservation of this iconic species. I am also the lead on the Paleoclimatology and Public Outreach Programs. This year I am also co-leading the fisheries, climate, and bat projects.

I am a Nevada native, born and raised in the Reno/ Sparks area. My previous career experiences have taken me to almost every remote corner of Nevada, and I cannot get enough of this beautiful place. I graduated from the University of Nevada, Reno with a Bachelor's in Wildlife Ecology and Conservation. After graduation I began working on the USGS Greater Sage-Grouse Project, where I earned my place as a Crew Lead on my second season. My true passion lies in the great outdoors, and when I am not hiking through the sage, you can usually find me out at the lake with some friends, relaxing in some natural hot springs, or snowboarding down the mountain.

Wyatt Plumlee, Natural Resources Program Coordinator

Hi everyone! I'm Wyatt, the Tribe's new Natural Resources Program Coordinator. I started working for the tribe June 7, 2021. I graduated from Sierra Nevada University in Incline Village, NV with my Bachelor of Science degree in Environmental Science with a concentration in Natural Resource Management. I am a former wild land firefighter and I have worked at the Grand Canyon; Paradise Valley, NV; Midas, NV; Ely, NV; and I have worked a little bit in Alaska. I am currently working on getting my Master of Emergency and Disaster Management degree from American Military University.

I get to work on so many different projects for the Tribe. Some projects I am leading include complete the Tribe's Treatment as a State Application for the EPA, installing the vertical profiler on the lake, planning emergency procedures and programs, updating and carrying-out the wildland fire plan, and maintaining the Tribal Vehicles. I planned the install and procurement of the Tribe's new weather station and installed it October 2021. The weather station's data (wind, temperature, and other measurements) are available at https://www.summitlaketribe.org/weather.html. I also get to assist Dustin, Rachel, Cory, Audrey, Madison, Parker, James W., and James S. with their various projects.

Please email me at wyatt.plumlee@summitlaketribe.org if you have any questions or concerns!

New Hires

Audrey Dufresne, Natural Resource Technician

Hello! My name is Audrey Dufresne and I'm super excited to join the team as a Natural Resource Technician this year! I am originally from Davis, California but since attending UNR I have fallen in love with Reno and the surrounding area.

I recently graduated May 2021 from the University of Nevada, Reno with a degree in Environmental Science emphasizing restoration and conservation and minoring in Spanish. Through my studies and experiences, I have found a deeper desire to restore and maintain our natural ecosystems. After spending the summer traveling, I am eager to finally put my degree to work and assist Rachel Redding in the conservation efforts of Sage Grouse Project. I am also excited to gain valuable experience assisting with the various other natural resource projects around Summit Lake. In my free time I enjoy playing rugby, camping, painting, and spending time with family and friends. I am also passionate about traveling and experiencing new cultures.

Parker Land, Natural Resource Technician

Hello! My name is Parker Land and I am honored to work at Summit Lake as a Natural Resources technician this upcoming season! I am currently finishing my last semester at UNR and will graduate with a Bachelor of Science in Biology with a minor in Electrical Engineering in May 2022. Growing up in the Reno/Tahoe area, alpine and desert lake ecosystems have always had a special place in my heart. While in college I have worked for various research labs including the Aquatic Ecosystems Analysis lab at the University of Nevada Reno and the Castle Lake Limnological Research Station in Northern California. I am very interested in blending whole-ecosystem studies and limnological techniques with natural resource management. When I'm not working, I spend my time hanging out at lakes, skiing, mountain biking, and hiking in the Tahoe area and beyond! I feel privileged to work for the Summit Lake Paiute Tribe and for the opportunity work up close with beautiful Lahontan Cutthroat Trout

Madison Hutchinson, Environmental Specialist

Hello everyone, I am so excited to join the team and become your next Environmental Specialist! I will be graduating from the University of Nevada, Reno this May with a Bachelor's in Environmental Science and a focus on Ecology and Sustainability. I am a Reno/Sparks local but have done other work in Wyoming and Hawaii. I have worked with The Desert Research Institute here in Reno, and this summer I had the pleasure of working on a ranch studying the ecological relationships between cattle weight gain and prairie dog colony size.

When I am not working, I like spending time sightseeing, playing with my dog, and relaxing with a good tv show/movie. I am thrilled for this opportunity and to learn more about our great Nevada Environment!

Photo: Dustin Hannasch

Photo: Wyatt Plumlee

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Housing Department Updates

SLPT Housing Department currently has the following assistance programs. These programs are HUD funded programs. In order to be eligible for these programs, you must meet the income criteria, background requirements, and must be a SLPT Tribal Member.

Down Payment/Closing Cost Assistance: Eligible in Nevada, California, Oregon, Washington, Arizona and Idaho. This assistance will provide a tribal member with up to $25,000.00 to assist with the down payment and closing cost of a home. Tribal Member must secure a home loan. This assistance can be paired with a 184 Loan.

Tenant Based Rental Assistance (TBRA): Eligible in Nevada only. Assistance is up to $500.00 per month for one (1) calendar year. Applicants may reapply after the initial calendar year, all applications will be treated case by case.

Security Deposit and First Month's Rental Assistance: Eligible in all US States. Assistance will provide up to $1,500.00 for Security Deposit and up to $1,500.00 for First Month's Rent. This program can be paired with TBRA.

Sports Registration and Equipment: Eligible in all US States. Assistance will provide up to $500.00 per tribal member minor between the ages of 4-17. Assistance can be used on the registration fee and needed sporting equipment. This assistance can be used twice per tribal member minor within one (1) calendar year.

Job Training: Eligible in all US States. Assistance is for eligible tribal members who need employment certifications and are unable to assume the cost. SLPT Administration Office has computers that can be utilized by the tribal members at any time for personal use or training.

Housing Management Services: Assistance provided covers various items such as searching for an apartment, housing counseling for homeownership, rental, credit management, and budgeting.

If you have any questions regarding Housing, please contact Austin New Moon, Housing Program Manager at (775) 827-9670, cell (775) 447-5716, or via email austin.newmoon@summitlaketribe.org and don't forget to like and share the Housing FB Page!

Emergency Housing Programs

US Department of the Treasuries Emergency Rental Assistance Program (ERAP): Applications are no longer being accepted. Funds have been 100% expended. We are hopeful for another reallocation and will update the website if any additional funding is received.

US Department of the Treasuries Homeownership Assistance Fund (HAF): Applications are being accepted for Homeowner Tribal Members who are experiencing financial hardship due to COVID-19. This program is income based, and can provide financial relief for mortgage and utility payments. Applications are for one (1) month of assistance at a time for up to six (6) months of assistance within one (1) calendar year.

Indian Housing Block Grant American Relief Plan (IHBG—ARP): Funding was received in the amount of $35,007; we are currently creating policy and an application for this program. This program can assist tribal member renters with three (3) months worth of rental and utility assistance. This program is first come, first served and will be open for applications as long as funding is available.

SLPT Food Pantry: Pantry items are picked up weekly. Pantry is open Monday-Friday 8 am to 5 pm and on the 3rd Saturday of each month during the Regular Council Meetings. Please bring your own bags/boxes.

Applications for all programs can be found at https://www.summitlaketribe.org/housing.html

Hunting and Fishing Regulations

Fishing limits for 2022 were established by the Tribal Council at the February 19, 2022 meeting:

- **3 fish allowed per adult Tribal member and 1 fish allowed per minor Tribal member per year.**
- Tribal members must be present on the Reservation to take their limit of fish.
- Except for spouses of Tribal members, fishing by non-tribal members is prohibited.
- A non-tribal member married to a Tribal member may assist their spouse in fishing or fish in place of their spouse, as long as the Tribal member is present on the Reservation. Their take in fish per year is limited to the number of fish to which the Tribal member is entitled.
- Mahogany Creek is closed to all fishing in and above the fish trap and 100 yards below the fish trap (marked by the fence crossing the stream) from March 1 to June 15.

- **All of Mahogany Creek is closed to fishing from September-December 2022.**
- Tribal members may use dip nets and fishing poles to catch fish. The use of live bait, chumming, gaff hooks, spears, traps, wire fences, or other implements to take fish is prohibited.

Remember- the fish you catch could potentially have been tagged. Please have a Tribal employee scan your catch before cleaning it. PIT (Passive Integrated Transponder) tags are small, bead-like capsules inserted just below the skin of a fish. Tribal members fishing this spring should bring their fish to the Tribal Compound to be scanned for the presence of a PIT tag so that it can be removed before eating. The diagram on the next page shows where PIT tags are located in fish.

Photo Credit: Rachel Redding

Game Animals

- Hunting within the exterior boundaries of the Reservation is permitted to Tribal members provided that hunting is conducted in a safe manner.
- A non-tribal member married to a Tribal member may assist their spouse in hunting or hunt in place of their spouse, as long as the Tribal member is present on the Reservation.
- Firearms are not to be discharged within 300 feet of buildings, land assignments, or areas known to be occupied by Tribal members or employees. Firearms are not to be discharged from motorized vehicles, or at night.

Sage-grouse

At the February 19, 2022 meeting the Tribal Council supported the continuation of the sage-grouse hunting moratorium for 2022 in light of the ongoing sage-grouse population study. Based on preliminary data from the study, the sage-grouse population is showing indications of a concerning downward trend.

Fisheries Management and Activities

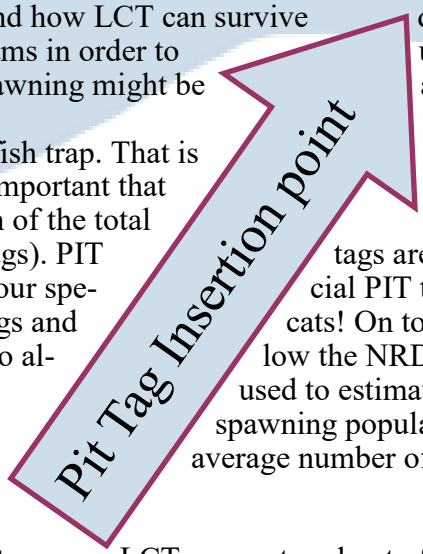
Throughout 2021, the following fisheries management activities were completed:

- The fish trap on Mahogany Creek was in operation during the spawning season
- Paleoclimate research and a climate model
- Fyke net (lake) surveys
- Mahogany Creek electrofishing
- Juvenile LCT monitoring
- Hydrophone data download and re-deployment
- Remote monitoring of the watershed and climate

The fish trap was in operation from April 17 until June 17, 2021. During that time 669 Lahontan cutthroat trout, *Oncorhynchus clarkii henshawi* (LCT) were captured moving upstream. The average number of fish captured at the fish trap since 1978 is 1,169. Although the 2021 count of fish was not below average, we still are not seeing a decline like the decline seen during the spawning run which followed the extreme dry winter of 2012. The fish appear to be doing well; despite the unprecedented loss of water that is happening at the lake. Summit Lake has dropped nearly 14 feet in the last 9 years.

Obviously this loss of water is a concern but it may be something that has happened at Summit Lake in the distant past; possibly multiple times! To find out, the NRD in conjunction with The University of Nevada (Reno) initiated a paleoclimate study that will be ongoing for 2 more years. A paleoclimate study means that we will take a look into the past to see what Summit Lake and the surrounding area was like thousands of years ago. The main goal is to find out how Summit Lake, its tributaries (Mahogany Creek and Snow Creek), plants, and therefore the LCT responded to wet and dry periods of the past. Knowing how the ecosystem responded to wet and dry times of the past will help us to understand how LCT can survive dry periods into the future. The future can be modelled with computer programs in order to understand the way that the Summit Lake ecosystem is trending and how spawning might be affected.

Not all LCT that spawn on Mahogany Creek are captured at the fish trap. That is because some fish like to spawn below where we can capture them. It is important that the NRD understands how many fish spawn each year. Thus, an estimation of the total spawning run is calculated from passive integrated transponder tags (PIT tags). PIT tags are tiny tags that have a unique number associated with it that can be read by our special PIT tag readers. They are the same type of tags that are in your micro-chipped dogs and cats! On top of being a valuable tool for estimation of spawning fish every year, they also allow the NRD to track fish movement throughout the fishes' lives. To add, PIT tags are used to estimate the population of LCT in the both the lake and the stream. The entire spawning population in 2021 was estimated to be 1,252 fish. That is almost right at the average number of spawning LCT seen in the last 6 years.



Using nets called fyke nets that are placed into the lake from boats, LCT are captured out of the lake. Lake sampling, as this survey is known to NRD staff, has been done yearly since 2015. These surveys are completed in order to estimate the total number of LCT that live in the lake. Fish are captured, measured, weighed and checked for a PIT tag. If they do not have a PIT tag already, one is implanted by NRD staff. Fish are then released unharmed back into the lake. The NRD does this ever spring (before the spawn begins), the summer, and the fall. In 2021 throughout the entire year, 330 LCT were captured and released.

In order to better understand the stream population of LCT, non-lethal electrofishing surveys were conducted in Mahogany Creek. Electricity is delivered into the water from what is called a backpack electrofishing unit. The electricity stuns a fish asleep long enough for NRD staff to capture a fish. They typically recover quickly. Once captured, length and weight are measured and PIT tags are checked for and implanted when necessary. The fish are then returned to the creek unharmed.

Small nets called “miniature fyke nets” were placed into Mahogany Creek from May 5 until November 18, 2021. These nets were located near the mouth of Mahogany Creek and set up in a way that they exclusively captured small LCT, not adults. Fish captured had their length measured and were checked for PIT tags. They were then released unharmed.

Hydrophones are a recent addition in Summit Lake. Hydrophones are underwater devices which “listen” for fish who have had a tag implanted that these devices can hear. There are now 7 hydrophones “listening” for LCT and 17 fish with tags that can be heard by the hydrophones. The data will be used to inform NRD staff on what habitat fish utilize within the lake at various times throughout the year.

In addition to monitoring the fish directly, NRD staff continues to track the effects of climate change on the LCT fishery. This work is accomplished using in-stream monitoring devices that continuously record stream temperature and amounts of water present at various locations on the Reservation and surrounding lands. We also use a weather station on Mahogany Creek and up the Snow Creek drainage to monitor climate variables.

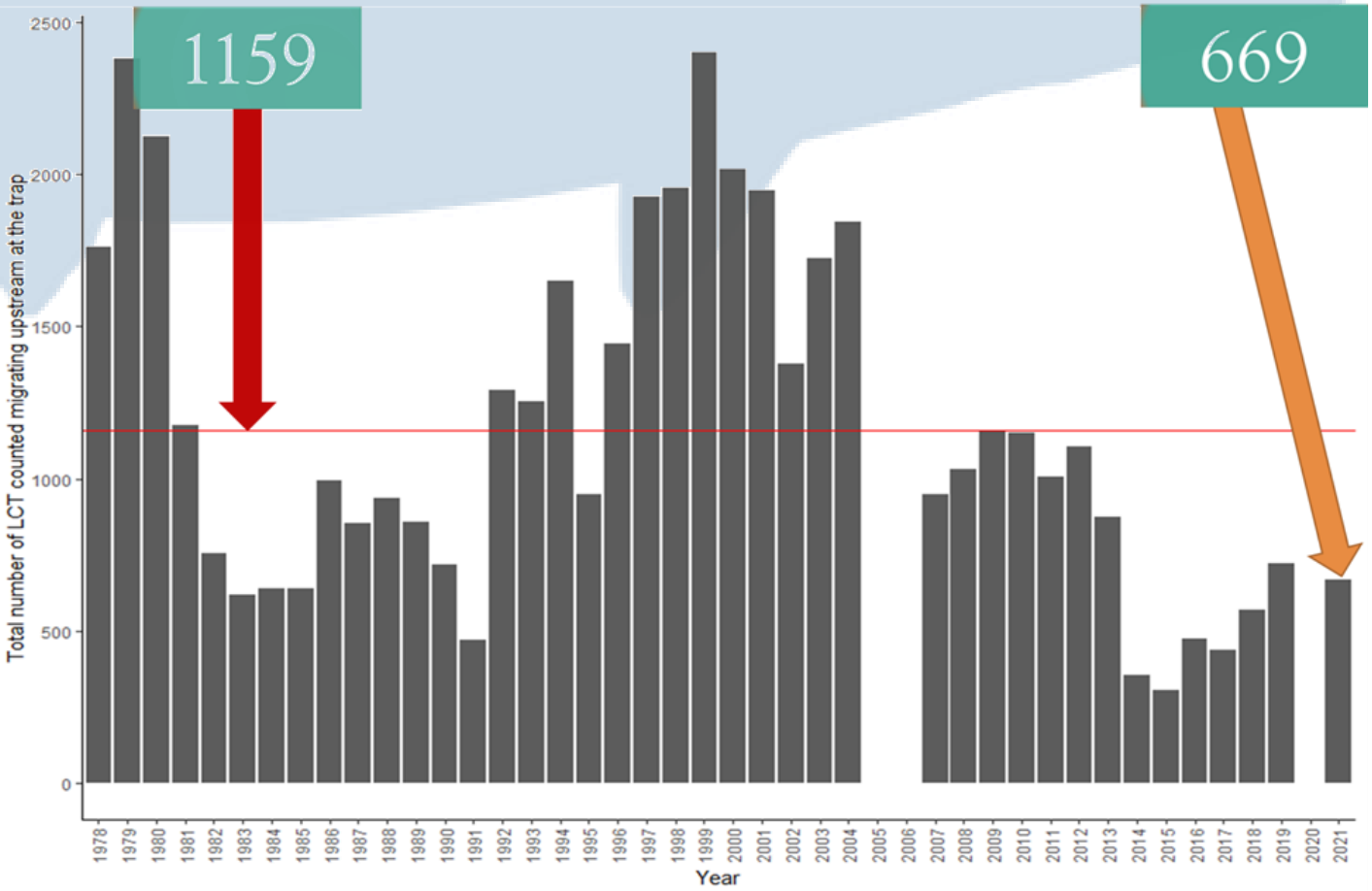


Figure 1. Average number of LCT caught going up-stream in Fish Trap is 1159. The number of LCT caught going up-stream in 2021 was 669.

The Sage-Grouse Study

Greater Sage-grouse (*Centrocercus urophasianus*) are the largest of seven grouse species in North America and occupy sagebrush-steppe ecosystems, which dominate the western portion of the continent. Sage-grouse were historically found throughout sagebrush communities in 16 states and along the southern border of three western Canadian provinces. The current core of sage-grouse populations includes areas of Colorado, Idaho, Montana, Nevada, Oregon, and Wyoming, with remnant populations in other states. Today, sage-grouse occupy less than 50% of their historic range. This is mostly attributed to habitat legion of factors that all contribute to degradation, and fragmentation. Some of these factors include wildfire, invasion of nonnative flora and fauna, grazing pressures, energy development and mining, agriculture and rural/ suburban development, disease, and climate change. Because of these sources of habitat degradation and their contribution to sage-grouse population declines, sage-grouse have been petitioned multiple times for listing under the Endangered Species Act. To date, they have yet to be listed, largely in part due to state and federally enacted conservation efforts and monitoring programs throughout the west.

Tribal members have observed a sharp decline in sage-grouse populations on the Reservation over the past few decades. In the past, sage-grouse were commonly seen in groups of 30-40, but presently when a sage-grouse is observed, they are very rare and with a small group of three to five birds. This has cause for concern and in response, the Summit Lake Paiute Tribe Natural Resources Department began a sage-grouse study. In this study, birds are captured, outfitted with VHF/ GPS collars, and morphometric measurements recorded in the interest of monitoring seasonal movements, nest success, and habitat use. The goal is to regularly monitor their lek attendance, seasonal movements, nest success, brood success, and mortality events. This data will help inform the tribe on what habitat on or near the reservation are important for sage -grouse and to inform where mitigation efforts should be implemented. Additionally, this data will help the Tribe to understand the population status of the local sage-grouse that may inhabit the reservation.

Lek Counts

In 2020, the NRD team contracted Owyhee Air Research Inc to conduct highly accurate aerial infrared searches and censuses of leks around the Reservation. These surveys are non- invasive and allows for surveys across large areas of land by utilizing a gyro-stabilized sensor mounted on a fixed-wing aircraft. Owyhee Air Research's sensor systems can detect heat signatures associated with sage-grouse from over two miles away, thus reducing impacts on displaying birds; and fixed-wing aircraft can fly higher, faster, and earlier than traditional helicopter surveys, further increasing the amount of survey area that can be covered while simultaneously doing so at reduced cost, reduced disturbance to wildlife, and an increased safety margin.

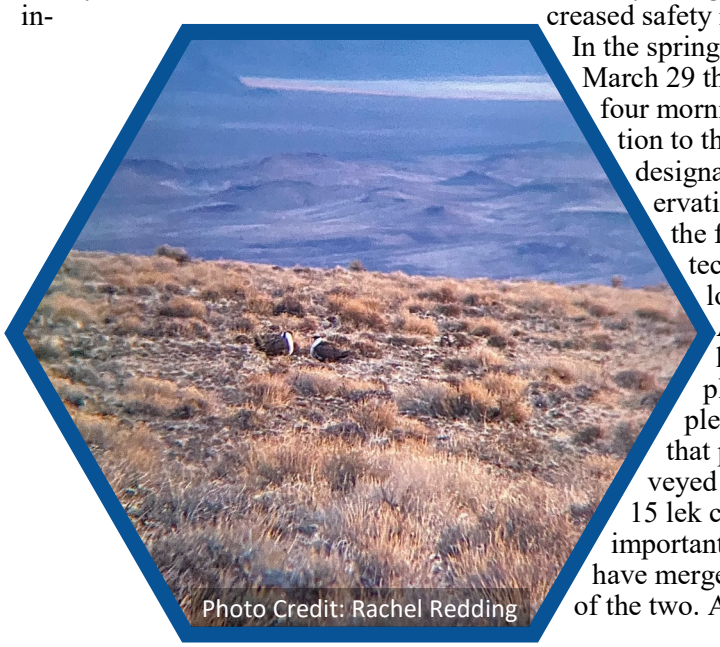


Photo Credit: Rachel Redding

In the spring of 2021, Owyhee Air conducted lek count surveys from March 29 through April 1. Due to budget constraints, the survey lasted four mornings and approximately 92,225 acres were surveyed. In addition to the designated survey area, 11 leks that were not within the designated survey area, but were located near the Summit Lake Reservation, were each surveyed a minimum of two times throughout the four-day survey. During this time, Owyhee Air Research detected sage-grouse on five separate instances at three different locations, including at a previously unidentified lek.

As a back up to the aerial surveys, ground surveying of the leks were performed by NRD staff. Ground surveys took place from March 15 through May 15, with the goal of multiple surveys at each lek throughout the entire lekking season so that peak lek attendance will be observed. Seven leks were surveyed by staff on the ground with a total of 15 surveys. 14 of those 15 lek count surveys detected sage-grouse present on the lek. One important observation suggests that Bitterroot and Bitterroot 2 Leks have merged into one lek, this is most likely due to the close proximity of the two. A newly discovered lek this year yielded the highest count,

47 grouse present, 25 males and 22 hens. This lek will remain a priority in future lek count surveys. In combination of all surveys, both ground and aerial, 12 leks were counted in 2021.There was a total of five leks that found zero birds present, three of those leks are now believed to be inactive, while the other two need to be further surveyed.

Capture Effort

In the spring of 2021, SPLT Fish and Wildlife Biologist successfully captured three hens and outfitted them with a GPS VHF radio collar and uniquely identifying leg band. This was the start of a pilot study using the GPS VHF radio collars. These collars are different than the regular VHF radio collars because the GPS part of the collar records a location point twice daily can may be downloaded using a device capable of long-range downloads. While it is still important to regularly monitor radio collared sage-grouse, the GPS VHF radio collars allows for some time to pass in-between tracking efforts while still collecting important data. The regular VHF radio collars do not record any data automatically, so sufficient tracking efforts are a must. Fall Capture efforts were also a success. 15 sage-grouse were captured (10 female, 5 male). The hens were outfitted with a VHF radio collar and a uniquely identifying leg band, while the males were only outfitted with a leg band. Total capture efforts for the year produced 18 new birds on record. 12 of the newly captured sage-grouse were captured on the Reservation. The rest were captured nearby active lek locations surrounding the Reservation.

Photo Credit: Rachel Redding

Radio Telemetry Monitoring

Staffing was limited this season due to the COVID-19 pandemic, so time allotted to tracking sage-grouse was also limited. Several attempts were made to locate the radio collared sage-grouse, which included scouting every mountain top in and around the Reservation and listening from an antenna to try to get a signal, with little to no success. As a result, the NRD team contracted Owyhee Air Research Inc. for telemetry flights in May, August, and November. All but four birds were located via aerial and ground telemetry. Two of those birds have not been heard since 2020, and the other two unfortunately were the GPS VHF radio collars. One of the three GPS VHF radio collars were successfully located, and the GPS points were successfully downloaded. That information proved to be extremely useful.

Mortalities

Over the 2021 field season, only three mortalities occurred. One of the mortalities may have been a slipped collar, as to there was no evidence of the bird or feathers present at the location where the collar was recovered. All three collars were recovered from the field.

Upcoming Plans:

Sometime in late March and April, when the roads are safe enough to travel to the Reservation, trapping and lek counts are the first objectives of the sage-grouse project. The goal for capture efforts is to boost the sample size up to 25 radio collared hens. The goal for lek counts is to be counted 3- 4 times each, from mid-March to mid-May. Once trapping and lek counts are wrapped up, the next step is to continuously monitor the radio collared hens throughout the rest of the season in hopes to find nest and brood locations. These objectives will play an important role in obtaining adequate data for population estimates.

Photo Credit: Rachel Redding

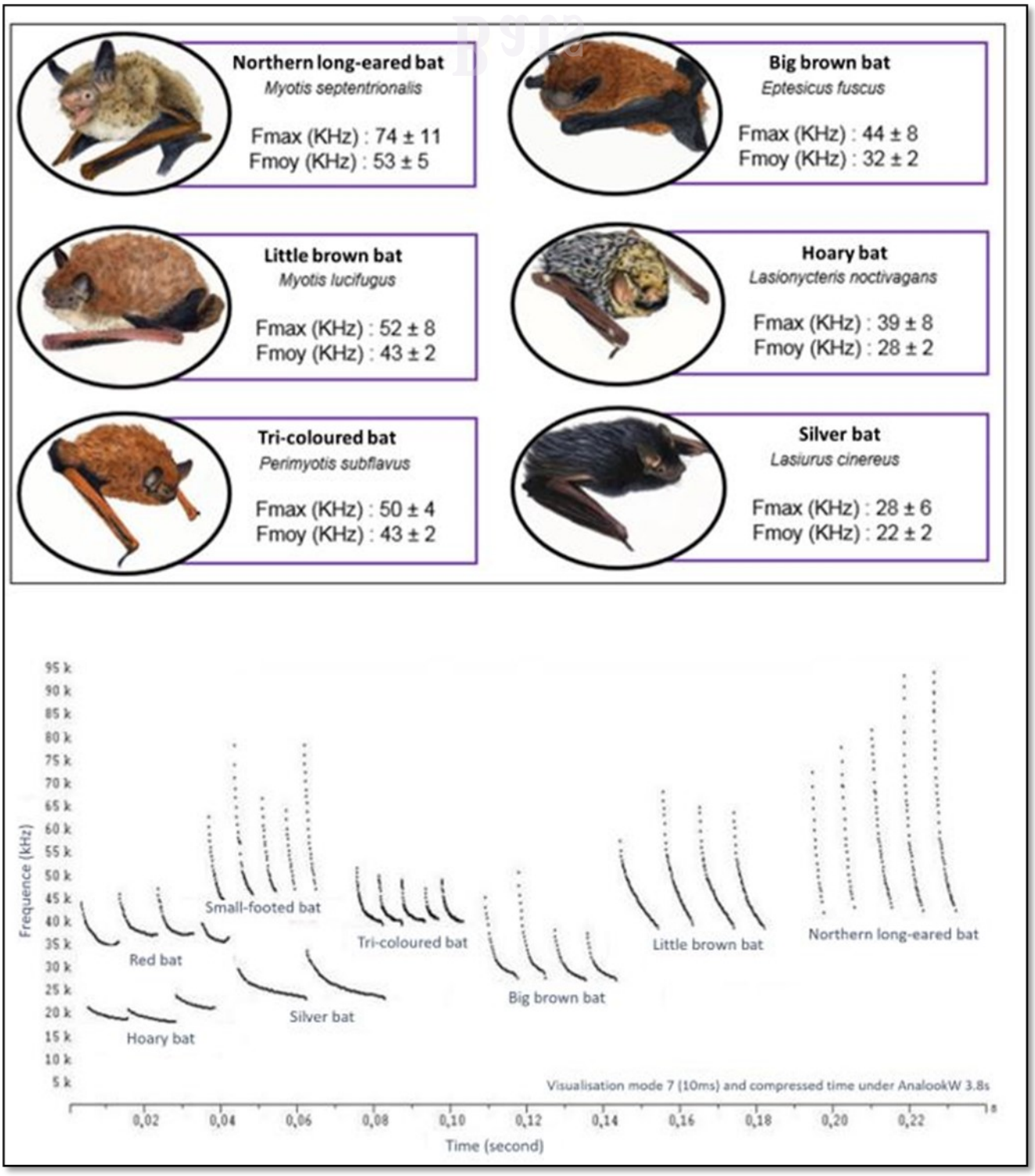
Bat Inventory and Monitoring Project

Bats are a vital part of the Reservation's ecology and occupy a wide range of habitats across the state, such as wetlands, woodlands, farmland, and even urban areas. They can tell us a lot about the environment because they are top predators of insects and are sensitive to changes in land-use practices. Bats navigate and find insect prey using echolocation. They produce sound waves at frequencies above human hearing, called ultrasound. Bats are monitored by using a bat detector that converts the ultrasonic frequencies of their calls into frequencies that humans can use, called sonograms. Each species of bat has a unique call frequency that we use to identify different species, much like fingerprints can be used to identify individual people. The Summit Lake Paiute Tribe Bat Inventory and Monitoring Project has provided the Tribe with important information about the 16 species of bats that use the Reservation.

Summit Lake Paiute Tribe Reservation Bat Species Profile

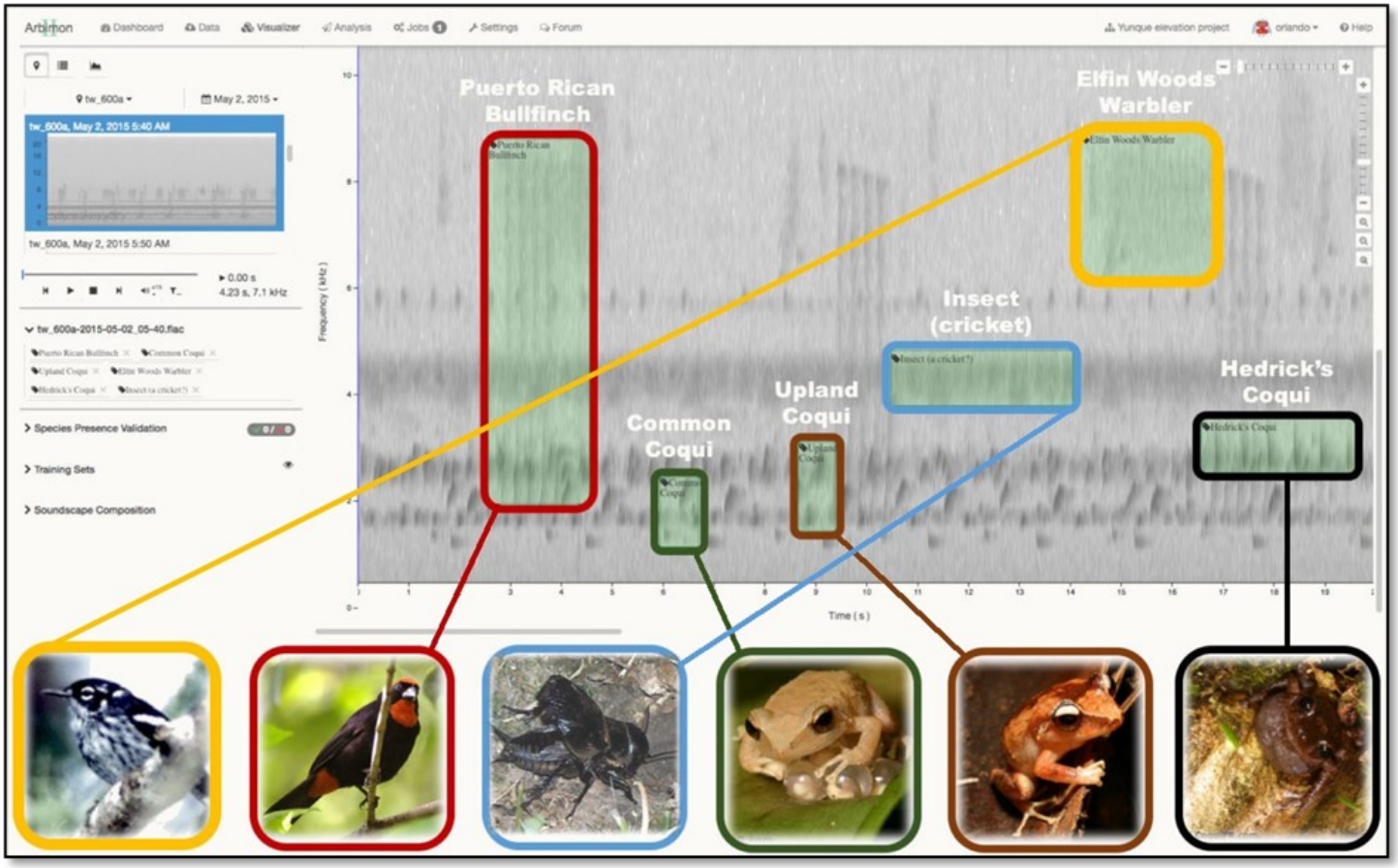
Common Name	Scientific Name	Number of Calls Detected in 2020	Number of Calls Detected in 2021	2020 - 2021 Total Calls Detected
Pallid bat	*Antrozous pallidus*	194	156	350
Townsend's big-eared bat	*Corynorhinus townsendii*	221	247	468
Big brown bat	*Eptesicus fuscus*	433	241	674
Spotted bat	*Euderma maculatum*	147	144	291
Silver-haired bat	*Lasionycteris noctivagans*	952	1,723	2,675
Western red bat	*Lasiurus blossevillii*	22	0	22
Hoary bat	*Lasiurus cinereus*	193	171	364
California myotis	*Myotis californicus*	51	73	124
Western small-footed myotis	*Myotis ciliolabrum*	603	735	1,338
Western long-eared myotis	*Myotis evotis*	3,707	2,923	6,630
Little brown bat	*Myotis lucifugus*	4,476	1,794	6,270
Fringed myotis	*Myotis thysanodes*	120	69	189
Long-legged myotis	*Myotis volans*	59	54	113
Yuma myotis	*Myotis yumanensis*	13	11	24
Canyon bat	*Parastrellus hesperus*	2,075	1,793	3,868
Brazilian free-tailed bat	*Tadarida brasiliensis*	239	614	853

Bats Continued



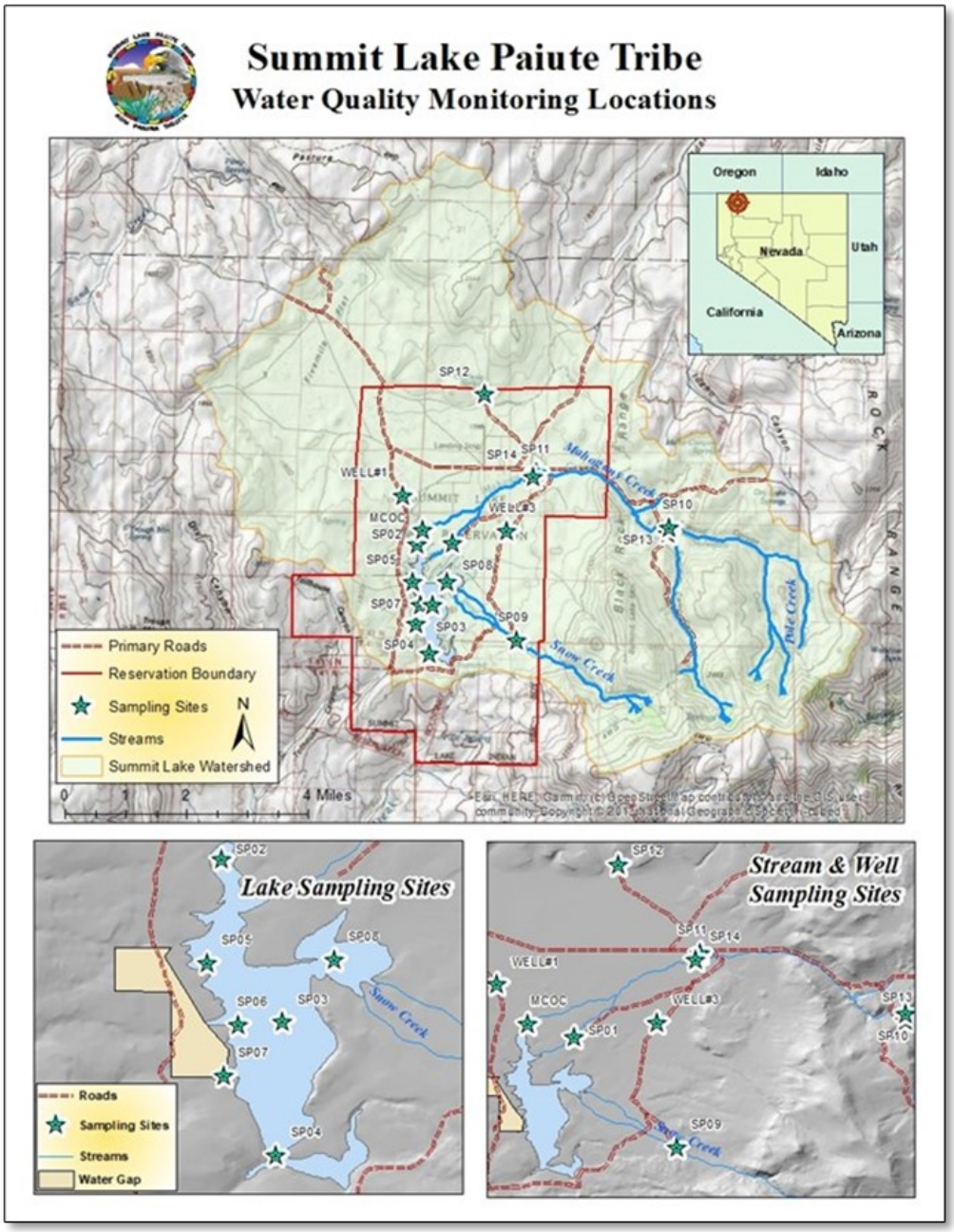
Soundscape Ecology Project

The study of soundscape ecology provides scientists with unique insight into species diversity and habitat conditions. Many animals produce unique vocalizations which can be used to detect their presence on the Reservation, even when they can't be seen. Birds, frogs, and insects are monitored by using a special audio recorder that records sound at specific times of day and night. Audio recorders are often better than cameras because they can record species over larger areas and over longer time frames. Audio recordings are analyzed by computer algorithms to identify specific species' calls, as each species has a unique frequency pattern that can be measured similar to fingerprints between people. Over time, we can learn which species and how many species are present in different habitats which allows us to map biodiversity across the Reservation. Understanding biodiversity over space and through time can help inform us about how to best maintain or restore habitats for future generations.



Water Quality Monitoring Project

The Summit Lake watershed requires the protection of water quality to guard human and environmental health. To address potential pollution issues Tribe developed a Quality Assurance Project Plan that specifies procedures and protocols for a water quality monitoring program. Each Spring, Summer, and Fall NRD staff collect water samples from Summit Lake, Mahogany Creek, drinking water wells, and natural springs. The samples are analyzed in a laboratory for several different water quality parameters such as pH, inorganic nutrient levels (i.e., magnesium, fluoride, iron, etc.), organic nutrient levels (i.e., ammonia, nitrogen, phosphorus, etc.), and bacteria presence. These parameters are graphed and compared to water quality standards that indicate safe and healthy water. Water quality trend analysis has been ongoing since 2009 and has shown all parameters tested to meet or exceed water quality standards with the exception of One Mile Spring, which sometimes has high levels of bacteria due to frogs that live in the spring. Remember to always filter or boil spring water before drinking.



A Note from the Director

Hello Members! My name is James, and since August 2021 I have been your Natural Resources Department Director.

Summit Lake is a special place for many because of its people, location, beauty, the LCT, sage-grouse and other wildlife. I am not new to the Summit Lake watershed as I started working at Summit Lake to study the population dynamics of LCT for my master's degree at UNR in 2015. That work finished in 2018, but I continued to collaborate with my predecessors on additional research projects. So, I had nearly six years of experience working in the Summit Lake before coming on board, and I hope to have many more!

To say I have big shoes to fill is an understatement. My predecessors did a fantastic job putting the Department on a successful trajectory, and I am eager to continue this tradition. As you can see, we have a great team assembled, with interesting personalities and a diverse range of education and experience. We look forward to many accomplishments in the upcoming year! I'm excited to be serving you to achieve the Tribe's Mission!

A little about me - I'm a California transplant but don't hold that against me. After moving here over 20 years ago, it only took a few months for me to fall in love with the city, region, state, and the Great Basin. And since then, I have planted firm roots in the community. Home Means Nevada is not just a slogan - it really means something to me.

After many unfulfilling years in corporate America - unfulfilling because I did not feel what I was doing benefited society - I quit my job to pursue a career as a freshwater ecologist to combine my passions for fish, science, conservation, Nevada, and the Great Basin. Outside of work, my wife, daughter, and I enjoy getting outside to discover the Sierra Nevada Mountains.

I wish you and your families the best for the upcoming year and hope to see you in the future at the lake!

Upcoming Activities

LCT management: managing the spawn run at the Mahogany Creek Fish Trap, capturing fish from the lake and stream for PIT tagging, and monitoring the climate and water quality.

Sage-grouse: continued study of sage-grouse by completing lek counts, collaring birds, tracking collared birds, and collecting fecal samples. If you find a dead sage-grouse or collar, please report it to the Natural Resources Department so that we can add that information to our data.

Vegetation: continued management to preserve the Reservation's native plant community and landscape.

Bats, migratory birds, amphibians: these cool creatures will continue to be monitored via our stationary and mobile sound recording devices.

Fence Maintenance: some sections of the boundary fence will be repaired to help keep out trespass cattle and horses.

Wildfire: we will be putting up signage, maintaining firebreaks, monitoring fuel loads, and training staff to better prevent or manage wildfires.

Roads: Continued maintenance of the roads in and around the Reservation is key to the safe and efficient travel of our staff, members, and visitors.

Outreach/volunteer events: We created a Facebook and Instagram pages to keep the members informed of our activities at the Reservation, provide educational outreach opportunities, and publicize local environmental events (such as the annual Truckee River cleanup) that may be of interest.

@slptnrd

Save the Date!

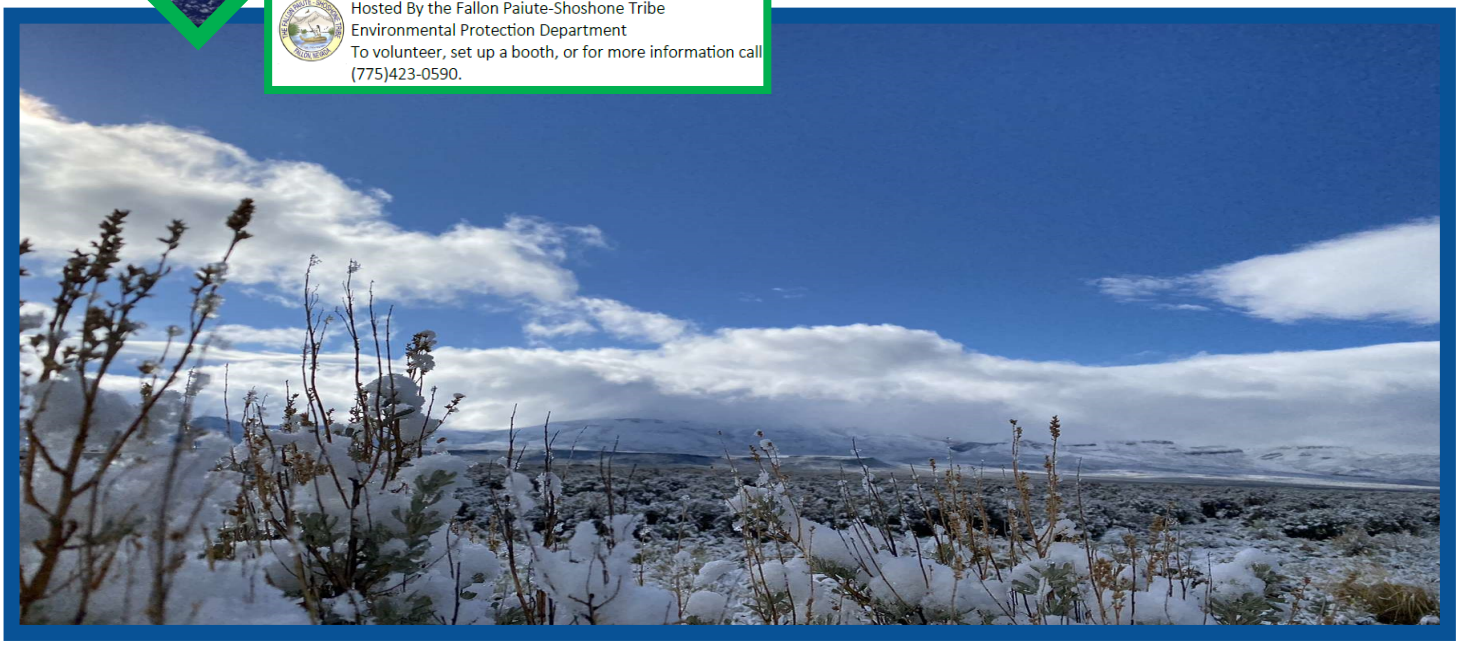
20th annual Earth Day Celebration

"Things ain't what they used to be"

Friday, April 22, 2022

Hosted By the Fallon Paiute-Shoshone Tribe
Environmental Protection Department
To volunteer, set up a booth, or for more information call (775)423-0590.

SLPT will have a booth at the Earth day Celebration from 10am to 2pm at Oats Park in Fallon, NV. Come join the fun and activities!

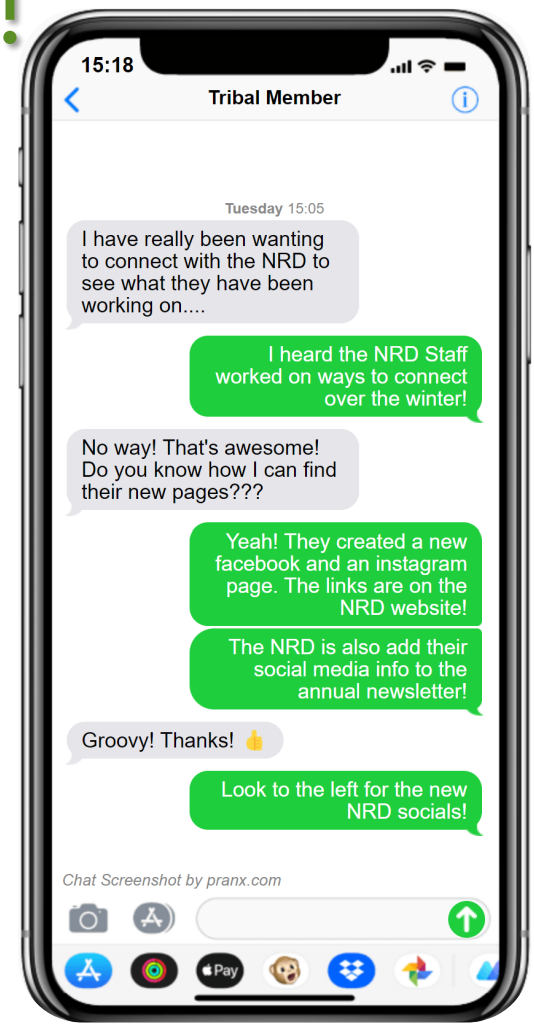


Connect with us!

Over the winter, NRD staff has been working hard at brain-storming ideas and creating ways to connect with Tribal Members! We have established some new pages to keep members up to date!

Things we will be posting:

- ◊ Project Updates
- ◊ Cool pictures from the reservation
- ◊ Videos from the fish trap and other activities
- ◊ Our new "Ask a Summit Lake Biologist Q&A" series
- ◊ Updates from other tribes, organizations, and partners
- ◊ Updates from on events happening around Northern Nevada
- ◊ Many other things too!



Scan the QR Code below on your device to go directly to Facebook!

@slptnrd

www.facebook.com/slptnrd

www.summitlaketribe.org/nrd.html

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