



Southwest Tribal Fisheries Commission

Fall 2019 Newsletter

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Jicarilla Apache Nation
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Pueblo of Isleta

Pueblo of Laguna

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Nambe Pueblo

San Ildefonso Pueblo

Pyramid Lake Paiute Tribe

Fall 2019 – Executive Director – Adam Ringia

The leaves are starting to turn colors here in Albuquerque, but overall, I think this has been the greenest summer that I have ever seen in New Mexico. Now, as fall arrives, and the smell of roasting green chili is in the air, many of our members turn their thoughts to the hunting season, but that doesn't mean there aren't fisheries activities still going on. From the Commission's perspective, we've had a pretty good year so far, our attendance at meetings seems to be up a bit, we had a successful Aquatic Invasive Species Workshop, we passed five (5!) resolutions so far, officially hired an Executive Director, and are supporting legislation for tribal natural resources funding. The officers have attended a variety of meetings to promote the interests of our members, and are working with State and Federal partners to ensure good communication with our members. In this issue, we have updates from the Mescalero Tribal Fish Hatchery (p. 2), and Pyramid Lake Paiute (p.5); articles on the importance of aquatic invasive species (p.4) and the use of rivers as wildlife corridors (p. 2,4); articles from some of our summer youth at Hopi and Mescalero (p. 3, 6); and some information on Environmental DNA, a booming field in wildlife monitoring (p.7). As always, please let us know if you have any suggestions, or articles to add! Although there are challenges in the road ahead, there are many opportunities as well.

Letter from the Chairman—Jacob Mazzone

Since our last newsletter the Commission has been very busy. Actively engaging partners, cooperators, and elected officials in Washington D.C. With important legislation working its way through the pipeline the Commission has been reaching out to voice our support of two bills, Recovering America's Wildlife Act (RAWA), and Wildlife Corridors Conservation Act (WCCA). These two pieces of proposed legislation, as currently written, could have a profoundly positive influence on tribal fish and wildlife management. I would urge all of you to review these bills and generate letters of support from your organizations.

With the official start of fall almost here there is usually a lot of wrapping up to do, with the field season, preparing for meeting season, and drafting final reports for all of the years activities. Obviously it is also a busy time of the year with hunts, feasts, and last but not least fishing. Get out and enjoy what time there is left in 2019, and

if you have a project or story to tell please submit it to the Commission, we are always looking to add new information and unique stories to the newsletter and meetings. The Commission is just a name without the active participation and engagement of our member tribes, nations, and pueblos.

I hope you enjoy this edition of the SWTFC newsletter, take a few minutes out of your day and give it a read. —Jacob A. Mazzone,



Message from the Vice-Chair – Glenn Selby

First, I'd like to congratulate Adam on officially becoming the Executive Director of the SWTFC. As Interim Executive Director, Adam made great strides in moving the Commission forward, and I'm sure Adam will continue to do good work and represent the Commission in a positive manner. It is an exciting time for the SWTFC and I look forward to working with all of the member tribes and the Board of Directors to move the Commission forward in its mission.

It's an exciting time as we near the end of summer, and welcome cooler temperatures. Not only do I look forward to the opportunity to get out and take advantage of the fall fish bite, but I look forward to getting out in the field and completing fall fish surveys. These fall fish surveys represent the last opportunity to get out in the field before settling into the office to analyze data, write reports, attend meetings, and countdown the days until I can fish again. Personally, I will relish these last few opportunities to be on or in the water, whether it is to survey lakes and streams or to try my luck at angling some big bass.

Fall also means it is time to stock fish again. Anglers everywhere rejoice over the newest crop of future trophy fish being set free to roam our fishing waters.

I'd also like to take a moment to encourage all SWTFC member tribes to continue providing content for the new website and Instagram accounts. Whether its pictures, articles, or project summaries, I know there is good work going on everywhere and encourage you all to share your successes. Who knows, maybe someone sees the good work you have done and it sparks an idea for a project that will benefit fisheries on their tribal lands.



Mescalero Tribal Fish Hatchery News—Shelley Belin

In early 2017, the SWTFC purchased the materials to construct 6 canopy shade coverings over the outside raceways. The purpose of the canopy covers is to protect the rainbow trout from predators, will reduce the growth of algae, and create a stress-free environment for the fish. In April of 2017 the 1st canopy was erected over 2 outside raceways. Soon after, the 2nd canopy went up. After a few adjustments to the coverings and any open spaces, the canopies are proving to serve their purpose. Algae growth has been reduced which, in turn, means less cleaning of raceways which leads to less stress on fish. Fish are daily protected from predators, particularly the Great Blue Herons.



2017 - The 1st canopy that was constructed for the outside raceways.

Today, the construction of a 3rd canopy is underway. The contractor is familiar with this project as they have constructed the previous canopies.



Contractors are preparing the asphalt for the concrete piers that will support the cold frame structure.



US Forest Service Funding Youth reports

With Summer over, receipts are coming in so that the USFS can reimburse the Commission for the youth projects at Mescalero and Hopi. Both tribes encountered some challenges, and will be retaining a youth worker for some additional work to expend their contracts.

Mescalero - Hello my name is Caleb Chee; I am 18 years old and a member of the Mescalero Apache Tribe. I graduated from Mescalero Apache High School in the spring of 2019. I was offered this internship by the Mescalero Tribal Fish Hatchery and US Forest Service. My internship was fun and memorable. There were many projects that my co-workers and I had done that had helped us gain a lot of knowledge.



During my first week at the Smokey Bear Ranger District, it was kind of awkward because it was a new setting and new faces, but everyone was welcoming. After greeting everyone we were assigned to accompany employees from US Forest Service, who took us out into the field. First week projects weren't too difficult, we fixed fences, checked on trick tanks (which are tanks that collect water for wildlife) repaired them (if needed) and we got familiar with some of the roads and land. Week 2 and 3 with the Forest Service was a bit more interesting because we did things like setting up a portable weather station near a protected habitat, did surveys for a Northern Goshawk. We also went to a ranch to check up on a piece of habitat under rehabilitation. We got to work at the Sacramento Ranger Station where we did signage repairs, trail rehabilitation, vegetation surveys (for the Sacramento Mountain checkerspot butterfly), repaired a couple of cattle guards off of Highway 244. For my overall experience, I had a great time. Getting to work with different people and environments was awesome! Many of the projects that we worked on had a purpose and meaning behind it. All of the knowledge and work ethic I have learned will help benefit me in the future. Once again, I would like to say "Thank You" for this opportunity. projects.



Wildlife Corridors

Wildlife corridors have been on the mind of the country lately, with Senator Udall (D-NM) and Representative Beyer (D-VI) introducing the Wildlife Corridors Conservation Act into the House and Senate both in 2018 and 2019, 11 states across the country introducing similar legislation and the Western Governors Association and many other organizations (including the NAFWS and SWTFC) passing resolutions in support of wildlife corridors. In late July I attended a wildlife corridors summit in Taos, directed at the Northern Rio Grande region, but relevant to wildlife corridors actions around the country. The focus of this summit, and all of the activity really, is on big game and hunting, however, one of the things that the SWTFC contributed was the reminder that fish, and river corridors are critical conservation corridors, and an obvious place to establish protected areas, due to their importance, not only to fish and aquatic species, but to life in the southwest, and throughout the country. We were supported in this effort by one of our partners – Trout Unlimited. Trout Unlimited has a great section on their website (<https://www.tu.org/conservation/our-approach/reconnect/>) dealing with the importance of reconnecting streams, and removing barriers to fish passage. (Continued... p.4)

USFS—Hopi Youth Experience

This summer I had the opportunity to work for the Hopi Wildlife Ecosystems Management Program (WEMP) as a college intern. During the summer I was contacted by the director of the Hopi WEMP, Mr. Darren Talayumptewa, who said that there was a position that was going to be opening and it was the first time something like it was going to happen. Since I am currently going into the natural resources field studying Forestry, I thought it would be a great opportunity to gain some experience as later I knew the experience would help me gain skills and knowledge I need after I graduate.

For the first two weeks I was stationed at Kaibab National Forest where I worked with Mr. Todd Russell, the wildlife biologist there. On my first day I met Todd at Jacob Lake and he then showed me where I was going to be staying which was the cabins at Jacob Lake managed by the U.S. Forest Service. I thought that the cabins were very homey with a full kitchen, shower, beds and even satellite tv! The following day Todd picked me up and we started our day in search for Goshawks. Todd taught me about Goshawk habitat, behavior and why we were searching for their nests. To find their nests we used data from a study conducted years ago that was uploaded to an iPad and had GPS to find the nests in the forest.

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Why Care about Aquatic Invasive Mussels?

Over the last few months the Southwest Tribal Fisheries Commission has spent a lot of time thinking about Aquatic Invasive Species or AIS. Generally, we have been talking fairly specifically about the threat that Zebra and Quagga Mussels represent to the tribes and to the region, but it is frequently challenging to get people excited about another crisis. Also, for many western states, there aren't any infested/infected waters. So, again, why should we care?

There are plenty of scary numbers, for example: Congressional researchers estimated that an infestation of zebra mussel in the Great Lakes cost the power industry alone \$3.1 billion in the 1993-1999 period, with a total economic impact on industries, businesses, and communities of more than \$5 billion. The Southwest doesn't have Great Lakes on the same scale, however, the water resources that we do have are just as critical if not more so to our survival and well being. We still use our water resources for many of the same things.

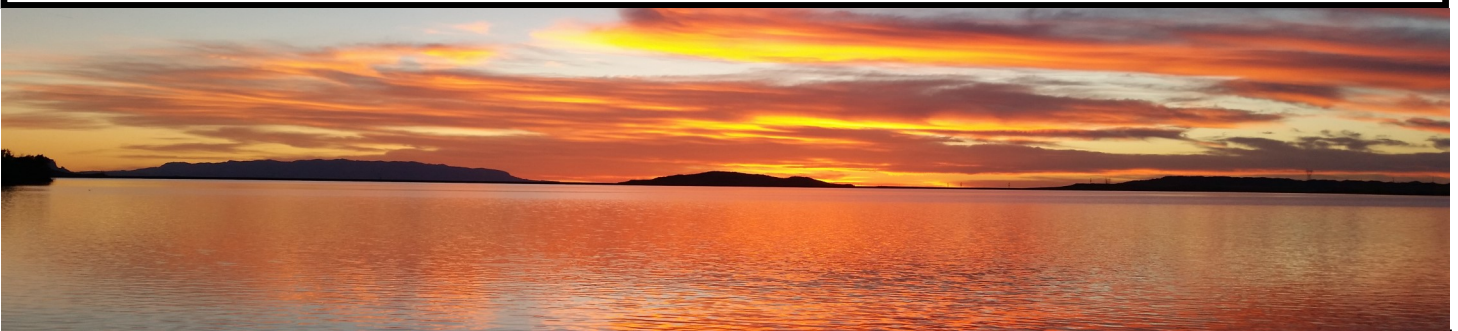
The Idaho Invasive Species Council put together a report in 2009 (<http://www.aquaticnuisance.org/wordpress/wp-content/uploads/2009/01/Estimated-Economic-Impact-of-Mussel-Introduction-to-Idaho-Final.pdf>) that summarizes a variety of these from their perspective, but these potential impacts could affect all states and tribes somewhat differently.

- Hydro Power: The cleaning and mitigation costs to maintain efficient operation will increase operational costs and increase consumer costs as well.
- Drinking Water Intakes: Mussels foul intake piping and water processing infrastructure, increasing maintenance costs and degrading water flavor due to mussel waste and decomposition in water lines.

- Golf Courses: Golf courses are at risk for additional maintenance costs for irrigation systems. Fouling of pipes and pumps and clogged sprinklers are projected to increase operating expenses.
- Boating Facilities: Boating facilities include marinas, docks and boat launches. Increased cost estimates are based on maintenance associated with dock and boat launch fouling.
- Fish Hatcheries and Aquaculture: Pipes, pumps and raceway structures are all subject to increased operations and maintenance costs.
- Boater Costs: Time and potential cost for decontamination and inspection, anti-fouling paints and increased maintenance costs.
- Fishing Use: Potential decrease in fishing due to decreased boater use, mostly from the additional time and cost required.
- Irrigation: Every point of diversion and use are potentially at risk of fouling by mussel establishment decreasing efficiency and increasing maintenance costs.

Considering just these industries probably leaves out a few, but overall will impact everyone in the region. When you talk to your people about the issue, figure out where their concerns are and tailor your education to make it real for them – increased costs/decreased efficiency of water to traditional crops, increased competition for water rights, clogged drinking water pipes, closed lakes for fishing, everyone has the potential to be impacted.

Another thing to remember, is to keep your message positive and attainable, this is a threat the states have been moderately successful in controlling for more than a decade, and research is being done to make control more efficient and effective, but more resources can protect everyone better!



Corridors—(Continued from page 3)

One of my favorite lines from the article is “A river ecosystem is healthiest when it is integrated and whole, with mainstem, tributaries and floodplain connected, offering diverse habitat that serves a range of fish needs, from shelter to food.” I think any fish or wildlife biologist can get behind that statement.

There should be a note of caution as well, as we remove barriers and re-establish connectivity, we need to be cognizant of the risks to native species from non-native and invasive species. As we work to reintroduce native species to our streams, and to keep invasive species from moving into new areas, we need to pay attention and avoid facilitating the movement of those threats into protected areas.

In support of wildlife corridors, the SWTFC has passed a resolution supporting the Wildlife Corridors Conservation Act, and will be sending letters to our congressional representatives to promote the inclusion of tribes in the legislation. Special thanks to Senator Udall (D-NM) and Representative Beyer (D-VA) for introducing this bill.



Pyramid Lake Fisheries ~ 2019 Summer Report (Sutcliffe, Nevada)

Near the shores of Pyramid Lake in Sutcliffe, Nevada, a decontamination facility is nearing the process of being completed to check boats for Aquatic Invasive Species (AIS) prior to launching in Pyramid Lake. The Tribe received funds from BIA, BOR, NFWF, and other sources over the years to build this structure. A water ozone/reclamation system is the last piece of equipment needed to be installed for this facility to be ready for operation. The Tribe is currently working on a fee structure, Tribal AIS ordinance, and has implemented AIS language in the Tribe's current Boating/Fishing regulations. Tribal AIS staff are currently undergoing training and preparation to operate this AIS station.

Cui-ui (*Chasmistes cujus*) have been federally listed as 'endangered' since 1967.

After capturing and spawning adults, Pyramid Lake Fisheries staff reared and released approximately 1 million Cui-ui larvae this past summer. Averaging 10mm in length, the larvae were released into the Truckee River, where they will migrate 3 miles back into Pyramid Lake. Obligate stream spawners, Cui-ui are found nowhere else in the world, except in Pyramid Lake, where they can live to be over 50 years.



After a successful spawning season, Pyramid Lake Fisheries staff obtained approximately 1 million eggs this past Spring, resulting in approximately 550,000 Lahontan

Cutthroat fry (*Oncorhynchus Clarkii henshawi*). To prevent overcrowding in the hatchery, staff released approximately 115,000 small fry into the lower Truckee River. Approximately 400,000 fry are currently being reared at Numana hatchery to be released into Pyramid Lake later this year. Approximately 2,000 mature Lahontan Cutthroat Trout (LCT), several over 18 to 20 pounds, were counted and released to spawn naturally into the Truckee river this past Spring. USFWS installed rotary traps to estimate LCT fry



returning back to Pyramid Lake. Thanks to Creator for the abundant snow pack, who provided much needed attraction flows for all spawning Pyramid Lake fish, and sustained flows throughout the summer/fall.

Poonedooa (until we meet again)

Daniel Mosley
Executive Director
Pyramid Lake Fisheries
<https://pyramidlakefisheries.org/fishmap.html>



(Continued from page 3.)

Once we located a nest or nests, we used a call box to make a Goshawk call to see if the nests were active or not. We also used binoculars to look into the nests which were mainly found in the tops of trees. We searched for Goshawks most of the time that I was there at Kaibab. I did get to see a few Goshawks toward the end of my time there. Todd and Ryan, who also worked with the wildlife with the Forest Service, switched off taking me to different places in the Kaibab Forest in search of Goshawks.

Todd also arranged for me to spend a day with the timber crew and silviculturist that worked in the forest and I really enjoyed it. I also attended a helicopter safety training which took place out in the forest at a helipad. Overall, the time I was at Kaibab was a memorable one and I enjoyed it. The drive to the site was quite a distance, but I enjoyed it. Both Todd and Ryan



were very knowledgeable and explained to me a lot of information about not only the wildlife there, but also about what it is like working for the U.S. Forest Service. Todd introduced me to some of the people who worked at the ranger station there in Fredonia. Ryan knew the forest like the back of his hand took me to very nice areas of the forest that are not very well known.

For the last part of my summer internship I went to the Blueridge Ranger District. There I stayed in the employee housing and was welcomed by the Coconino National Forest Tribal Relations Specialist Jeanne Stevens. There at Blueridge I was working with the Coconino National Forest Service's Fish Biologist Matt O'Neil accompanied by a student who was doing a study on toads there at Blue Ridge. On the first day I was introduced to several of the staff that worked there in the office. We then headed out to see recently burned areas as these areas are a threat to fish in the creeks below. Ash that runs down the slopes during a flood along with other debris can fill the creeks and can kill the fish. Matt explained to us why he must pay attention to this sort of disturbances like wildfires.

We also spent some time checking on transducers that had

been put in previously and were ready to be checked. These transducers had been placed in areas where the water flows to measure peak flows through out the year. Along with checking on transducers we also helped restoration crews like the Grand Canyon Trust crew who were helping restore a wetland meadow there at Blue Ridge. We helped them move rocks and build rock structures called Zuni Bowls to help slow the water down and prevent erosion. The purpose of that work was to slow erosion as the cut in the soil was moving further into the meadow. If the cut did not stop soon it would get larger causing the meadow to no longer hold enough water to slowly release it through future summers.

Toward the last part of my time there at Blueridge we went electro-fishing around Beaver Creek in the southern part of the Coconino National Forest. Matt was very kind in letting me stay at his house for a night just outside Flagstaff so we could have an early start and avoid me having to get up really early and driving down to Beaver Creek. The purpose of the electro-fishing was to remove invasive species of fish from the creek as there was high numbers. Matt, the other student intern and I all took turns wearing the pack and getting into the pools of water with the wand and fishing. The electric current was not meant to kill the fish however, it is meant to stun them to catch the invasive fish in nets. All fish caught were then tallied and measured. Native fish were then returned into the water.

In closing, my time spent at both national forests, although short, were both enjoyable and educating. I had the opportunity to meet many people in various occupations that worked with the forest service like fire managers all the way to archeologists. If I had the chance to do it all over again I would. I would also like to encourage other Hopi college students going into fields involving natural resources to also become an intern. I appreciated the places I visited and worked in as there were many places that I would have never seen before.

Josh Sidney





Science-

Environmental DNA has been a recent topic of interest—granting the opportunity to detect rare species through DNA shed into the environment. The technology is still being developed, and markers for more species are in the works. There is a lot of potential for the future. In the spring of 2015 the journal Biological Conservation published a special issue only on this topic.

Biological Conservation, Special Issue: Environmental DNA: A powerful new tool for biological conservation
Volume 183, Pages 1-102 (March 2015)

Overview: Conservation relies on our ability to detect and monitor populations and their threats. For aquatic species, this challenge is increased by the difficulty of seeing animals in the aquatic environment, especially rare species that occur at low densities. To improve detection of hard-to-find species in aquatic ecosystems, scientists are employing an innovative molecular approach using environmental DNA, or eDNA.

Even when an aquatic animal can't be seen or heard, it leaves traces of itself in the water by shedding skin, excreting waste, releasing gametes and decomposing. Investigators can collect a water sample to detect the target species' DNA and determine whether the species has recently been in the water body. Environmental DNA has proven to be a sensitive, accurate, and cost-efficient tool for species detection in aquatic environments and is especially attractive because it's non-invasive and poses no risk to aquatic animals.

The powerful potential of eDNA techniques has led to an growing wave of studies using eDNA in freshwater and marine systems. To date, eDNA has successfully detected at-risk fish, amphibians, reptiles, mammals and invertebrates, as well as invasive species and water-borne pathogens that may threaten them.

<https://www.sciencedirect.com/journal/biological-conservation/vol/183>

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