



# Red Lake Band of Chippewa Indians' Wetland Program Plan

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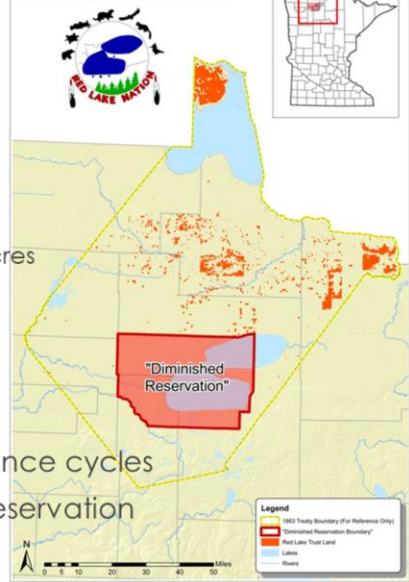
United South and Eastern  
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Good afternoon everyone, my name is Tyler Orgon and I'm a Biologist with the Red Lake DNR Water Resources program in north central Minnesota. Colin had reached out to me and asked if I could share our experiences with putting together a Wetland Program Plan. I'll start off by saying that I was handed our Wetland Program Plan back in 2015-2016. We already had a plan in place but it needed to be updated through the use of a Wetland Program Development Grant. But first, a little background on the Red Lake Indian Reservation. Please feel free to stop me or ask questions, but I'll try to keep this relatively short and sweet.

## Background

- ▶ Closed Reservation
- ▶ Resources
  - Total land holding in excess of 835,000 acres
    - ~308,000 acres forest
    - ~241,000 acres freshwater lakes
    - ~541,000 acres of mixed wetlands
    - ~371 miles of rivers and streams
- ▶ Manage resources based on subsistence cycles
- ▶ Importance of wetlands within the Reservation

### Red Lake Reservation & Restored Ceded Lands



The Red Lake Indian Reservation is one of two closed reservation in the United States. The Red Lake Band owns 59% of all Indian land in Region 5, with a total land holding in excess of 835,000 acres. Of those acres, forest, lakes, wetlands and streams dominate the landscape, with very little agricultural practiced within the Reservation boundary. Historically, the Red Lake Band have been deeply connected to the Tribe's land and water resources. The wetlands on the reservation provide members with a suite of different uses expanding from a subsistence cycle of hunting, fishing, and gathering of resources (such as manomin or wild rice) to cultural and medicinal purposes. The Red Lake DNR Water Resources Program currently employs 7 staff members from biologists and a director to field technicians and seasonal interns. The 7 of us are responsible for managing not only the 6<sup>th</sup> largest freshwater lake in the US, but also miles of rivers and streams and over 100 other small freshwater lakes, and wetlands. With that said we have try and manage our wetlands appropriately and feasibly.

## Wetland Program Plan 2016-2020

- US EPA's Core Elements Framework (CEF)
  - Monitoring and Assessment
    - Develop an updated wetland inventory
    - Analyze existing monitoring data
    - Develop methods to monitor all wetland types (RFQA)
    - Establish historical nutrient conditions in open water wetlands
  - Regulatory Activities including 401 Certification
    - Clean Water Act Section 404 and 401 Certification
- Voluntary Restoration and Protection
  - CWA 106 Pollution Control
  - CWA 319 NPS Pollution and Treatment Similar to State
  - Rapid Floristic Quality Assessment Index (RFQA)
- Water Quality Standards for Wetlands
  - Maintain a comprehensive wetland inventory

In developing our Wetland Program Plan, the US EPA requested states and tribes to utilize the US EPA's Core Elements Framework. And this is what we had come up with. In a 4 year span, we said that we would plan to develop an updated wetland inventory for the diminished Reservation (the largest conterminous portion), analyze existing monitoring data from open water wetlands, develop methods to monitor all wetland types, establish historical nutrient conditions in open water wetlands, obtain 404 and 401 certification, continue to implement 106 pollution control efforts along with ways to combat Non-point source pollution and obtain treatment similar to state, use a rapid floristic quality assessment index to determine restoration and protection sites, and maintain a comprehensive wetland inventory.



## 2017 WPDG

- ▀ Monitoring and Assessment
  - Development of an extensive wetland inventory
  - Define monitoring objectives and strategies
- ▀ Restoration and Protection
  - Establish goals for a shoreline ordinance
  - Develop guidelines and objectives for restoration and protection sites

In 2017, we were awarded our most recent wetland program development grant. The goals of this grant were to perform a couple of our objectives from our Wetland Program Plan. Those tasks involved the development of an extensive wetland inventory through the use of GIS (more specifically ArcMap), define monitoring objectives and strategies for all wetland types, develop/improve a shoreline ordinance to follow during construction practices, and develop guidelines and objectives for restoration and protection sites.

## 2017 WPDG Monitoring and Assessment



The reason for developing an updated wetland inventory was to establish reference condition by spatial extent. The last update for the reservation and most of Minnesota was done by the Fish and Wildlife service back in the 1980s, so the Tribe felt like it was important to determine if our wetland acres were increasing or decreasing over time. In order to perform this task, we used GIS (more specifically ArcMap) to develop a compound topographic index. This index is built on algorithms to highlight wet or hydric soils. So, after this layer was created, I had to manually digitize the boundaries of this layer while referring to multiple aerial photos, soil and forestry layers. After everything was digitized, you can see that there was fairly substantial wetland acreage missed during the last update which was likely due to the technology and topographic scale or resolution available at the time. The last step in the monitoring and assessment portion of the inventory was to go and get our feet wet. I had digitized over 1500 separate wetland polygons and I ground-truthed 10% at random. Ground-truthing efforts in conjunction with new spring leaf-off photos showed that our digitizing efforts to be approximately 80% accurate. The way our ground-truthing efforts worked, was by arriving at the plot, determining if the area was seasonally wet and performing a quick vegetation assessment before saying whether or not the digitized wetland was in fact a wetland.

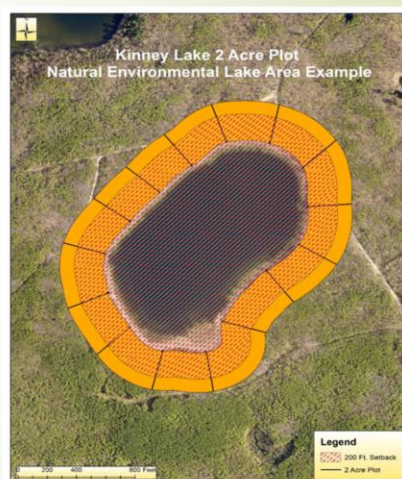
## 2017 Restoration and Protection

### Development of a Shoreline Ordinance

- Special Protection Areas
  - Waters vulnerable to pollution
  - Minimal development
  - Maintain high standards of quality
- Sensitive Management Areas
  - Sensitive due to flooding, steep slopes, erosion, presence of wetlands, or other physical constraints
- Natural Environmental Areas
  - Protect shorelines which are unsuitable for development.

### Prioritization

- Use of updated Wetland Inventory and new aerial photos.



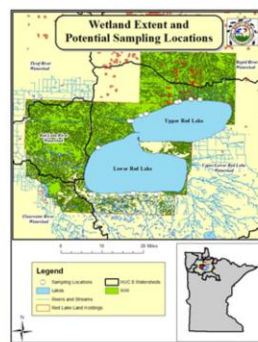
The last objectives we focused on with our last WPDG was developing a shoreline ordinance and wetland prioritization. Currently, there is no zoning laws within the Red Lake Indian Reservation. So the Tribe felt that it was important to have guidelines in place to protect their waters during construction and development practices. We came up with 3 different types of scenarios. Special protection areas were areas where water is vulnerable to pollution, we determined that these areas should have minimal development around their shores and to maintain high standards of both shoreline and water quality. If development were to take place here, we recommended setbacks of 200 feet from the ordinary high water level and plots of a minimum of 5 acres. Special protection areas for the Red Lake Band are generally deep oligotrophic lakes that are in near pristine water quality and are home to stocked trout species. The next scenario were water areas that are sensitive due to flooding, steep slopes, erosion, presence of wetlands, or other physical constraints. We coined these areas as sensitive management areas. The setback from the high water level is still 200 feet, but the plot size decreased to 3 acres. Lastly, the natural environmental areas. These are areas that are established to preserve and enhance high quality waters by protecting them from pollution and to protect shorelands or waters that are unsuitable for development, think small lakes or ponds, wetlands or bogs, or rivers. The setback again is 200 feet from that waterbody and a minimum

plot size of 2 acres.

Lastly under our Restoration and Protection Element, we are working to prioritize wetland sites by performing wetland inventory updates through the utilization of new aerial photography. So what that means is since we have baseline wetland extent, we can use new aerial photography as they become available to compare our wetland extent over the years. If we notice a considerable loss in wetland acreage, we can then actively apply for restoration funding. Ultimately, it comes down to what the Tribe feels is their best interest. There are a couple problem sites that are located north of the Reservation on state land and the Zah Gheeng Marsh within the Reservation. Both projects would be costly in the sense that concentrating efforts on these two projects would result in decades of inaction on other projects.

## 2020-2021 WPDG RFP

- Assess wetland-driven streams
  - General Water Chemistry
  - Mercury Contamination
    - Water Samples
    - Biotic Samples
- Thesis for Graduate Student
- Update Existing WPP
  - Approved for 2016-2020



As many of you may know, the EPA sent out an RFP last August or so that was for Tribal organizations only. This RFP is aimed at developing your wetland program. Due to our newly outdated Wetland Program Plan, we were tasked with coming up with new projects that could build capacity within our wetland program. With my background in Aquatic Biology with an emphasis in Fisheries and a Master's degree in Biology that focuses on mercury contamination within our environment, we wanted to continue to grow that dataset. With this proposal, we are looking to assess wetland-driven streams that are not routinely monitored for general water chemistry and mercury found within the water. A quick background on mercury, mercury is a global natural contaminant that accounts for most fish consumption advisories within the United States. It's well known that wetlands methylate mercury at higher rates than other cover types due to their physical and chemical characteristics and the last mercury study that was conducted within Tribal waters was 2002. So we do not have a good understanding if mercury levels are increasing or decreasing throughout time. With this project, we are hoping to determine if wetlands found around Upper and Lower Red Lake are contributing to a disproportionate mercury load that ultimately end up in a culturally significant food source, the walleye. We are hoping to bring on a Tribal graduate student to help us with this project and use this data to complete their thesis and hopefully get their work published in a scientific journal. Lastly, we



are looking to provide a four year update to our existing wetland program plan. This will likely involve a collaborative effort with the Water Resources, Fisheries, Wildlife and Forestry Programs. The more inter-tribal programs you can collaborate with, the likelihood of funding generally increases.



I hope this presentation helps you understand the different ways you can utilize Wetland Program Development Grants to tackle your goals that are outlined in your Wetland Program Plan. Thank you!

Quick side note: Not sure if this has been brought up yet, but the EPA in conjunction with Tribal stakeholders are working on providing an updated wetland program plan handbook for Tribes just starting out with developing their wetland program. We are hoping to have this handbook available to the public by the end of the year. This handbook will likely reference a lot of work that the Association of State Wetland Managers have provided but will also include case studies that other Tribes have experienced. This Tribally oriented handbook should be a valuable tool for everyone!

Thank you!