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RED LAKE DEPARTMENT OF NATURAL RESOURCES

MAZINA'IGAN ONJI ODAAKEWIGIMA LETTER FROM DIRECTOR

Boozhoo! As winter weather finally sets in, I would like to reflect back on our 2016 accomplishments. We have a new lake access and dock at Fullers Lake and a new dock at Bass Lake to add to the improved accesses we've completed in the past at Red Lake and Kinney Lake. Red Lake walleye populations continue to remain strong, and we are hearing reports of sturgeon being caught over 50" long! Water and ground water monitoring continue on the entire Upper/Lower Red Lake Watershed and even extending to Lake of the Woods. We are excited to find out what we can learn with the results of our new Paleolimnology and Climate Change research being conducted in Red Lake (see Spring 2016 – Newsletter - www.redlakednr.org). Our Red Lake wildland firefighters were busy on fire details out west this late summer, but also served on crews in November in the Southeast regions of the United States. Our wildlife staff continues to improve wild rice stand densities on the reservation by hand-seeding 5,000 lbs of rice this year. They are tracking several wolves with GPS collars including one that was newly caught late this summer, and are excited to continue working on Golden Winged Warbler habitat in the Narrows and Ridge areas of the reservation. The Environmental Program continues work on monitoring projects for protecting Air Quality and Groundwater Resources as well as other projects such as climate change adaptation, Underground Storage Tanks compliance assistance and inspections, and solar energy projects. Our Environmental staff's goal, as always, is to work for the protection of the environment and the health of our community members.

With accomplishments, we also face new challenges in the natural resources community. Emerald Ash Borer seems to be creeping closer to Northern MN ash forests. Starry Stonewort was discovered in Upper Red Lake at two locations off the Reservation. We will be vigilant for the spread of this and other nearby invasive species. As I am writing this letter, our neighbors just to the south recently discovered zebra mussel larvae in Leech Lake. Changes associated with climate change are likely to keep us on our toes from now into the future. We are working with tribes across Wisconsin and Michigan in order to develop a shared effort to monitor those changes so we can react in a timely manner. We expect to be faced with all these challenges and others that surprise us. We will work hard to ensure that we are ready and will keep the Red Lake community informed. Keep up to date with visiting www.redlakednr.org and the Red Lake DNR Facebook page.

With a start of a very mild winter, ice fisherman please be sure to check ice conditions before heading out to fish. If you are interested in trapping, furbearers (CITES) tags for fisher, marten, otter and bobcat are available from the conservation officers.

Everyone at the DNR would like to thank you for your continued support and sincerely hope you have a great holiday season!

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Al Pemberton

BIBOON (WINTER) 2016

PROGRAM UPDATES

FISHERIES 2

Giigoonyikewin

ENVIRONMENTAL 4

Ezhi-ayaag-gidakiiminaan

WATER RESOURCES 6

Ezhi-ganawenjigaadeg-Nibi

WILDLIFE 8

Awesiinhyia

FORESTRY 10

Miskwaagamiwi-zaaga'iganing

Miti-gokewin

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FISHERIES

GIIGOONYIKEWIN

Bass Lake Dock

LOCAL BOAT LANDINGS GET IMPROVEMENTS

This fall, the Red Lake DNR, Natural Resources Conservation Service, and Red Lake Builders worked together to improve two popular boat landings on the reservation. At Fullers Lake, we constructed a new ramp and dock to provide a safe place for people to fish and swim. This dock is handicap accessible and wide enough for everyone to enjoy. We also placed concrete pads and gravel down to assist in launching boats at this landing. Fullers Lake is one of our most popular lakes on the reservation and the dock has needed an overhaul for a long time. The new dock will help during the Cops for Bobbers and DNR Kid Fishing events. The dock at Bass Lake was also replaced this fall. We hope to be able to also fix this ramp next Spring. Extreme high water in the Spring of 2014 damaged both of these docks and FEMA provided some funding to assist in replacing these docks along with the one at Blackduck River. We would like to thank Red Lake Builders for doing an excellent job on these docks and they should last for a long time. Please enjoy these docks and take a kid fishing.



Fullers Dock



RED LAKE WALLEYE POPULATION REMAINS STRONG FOR 2016

The 2016 walleye harvest on the reservation was 745,000 pounds (Figure 1). This was down slightly from last year's record harvest of 960,000 pounds. The ice came on much later last year and ice anglers only caught 187,000 pounds of walleye through the ice compared to 550,000 pounds in the winter of 2015. This was the main difference in the harvest, but we have harvested over 700,000 pounds of walleye annually for the past 5 years and the population remains very healthy. We will be safely targeting approximately a million pounds of walleye for 2017.

Fall test net results were very encouraging this year and the walleye population remains very healthy (Figure 2.). The walleye population has decreased slightly compared to recent years, but this is what we have been trying to accomplish with our regulations. We had two very large year classes of walleye present in the lake for the last 5 years. The 2009 and 2011 year classes have been carrying the fishery, but now many of the 2009 fish have been harvested or have died from natural mortality. We are seeing signs that the lake is starting to come back into balance and we expect the population to continue to decline slightly over the next few years. This is a good thing and we hope that the yellow perch population will increase with decreased walleye predation.

The ice fishing season is off to a very slow start this year and is very similar to last year's ice fishing season. We should have good ice by Christmas for foot traffic, but we will have to see what the weather does in the next few weeks. There are still good numbers of walleye in the lake and we should have a good ice season. Forage seems to be down, which can often help with the bite, but we will have to see. Don't rush it and please be careful once you do start fishing. Please enjoy the resource, but at the same time respect this world class walleye fishery. We would like to wish you and your family a safe and enjoyable holiday season!

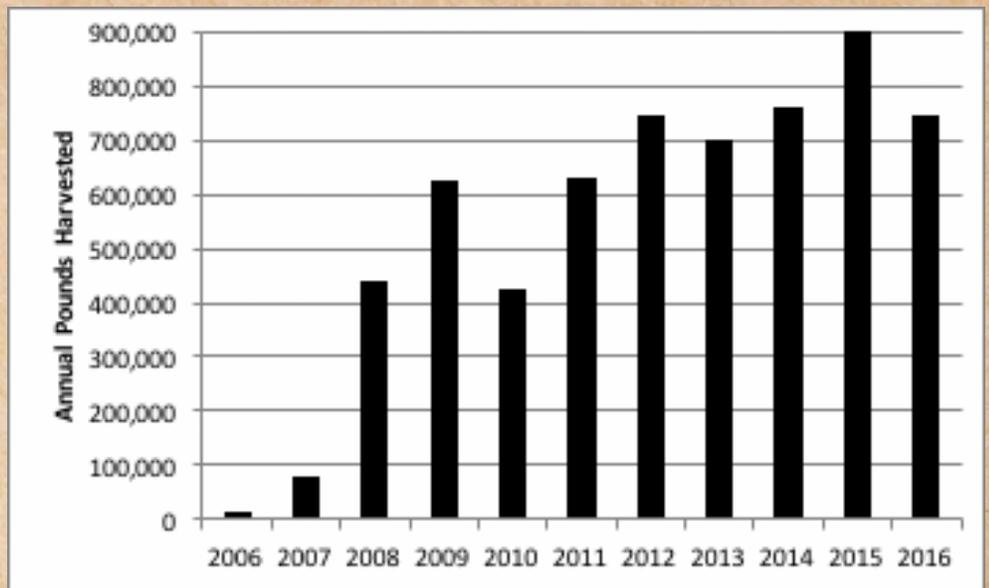


Figure 1. Annual walleye harvest from the Red Lake Reservation 2006-2016.

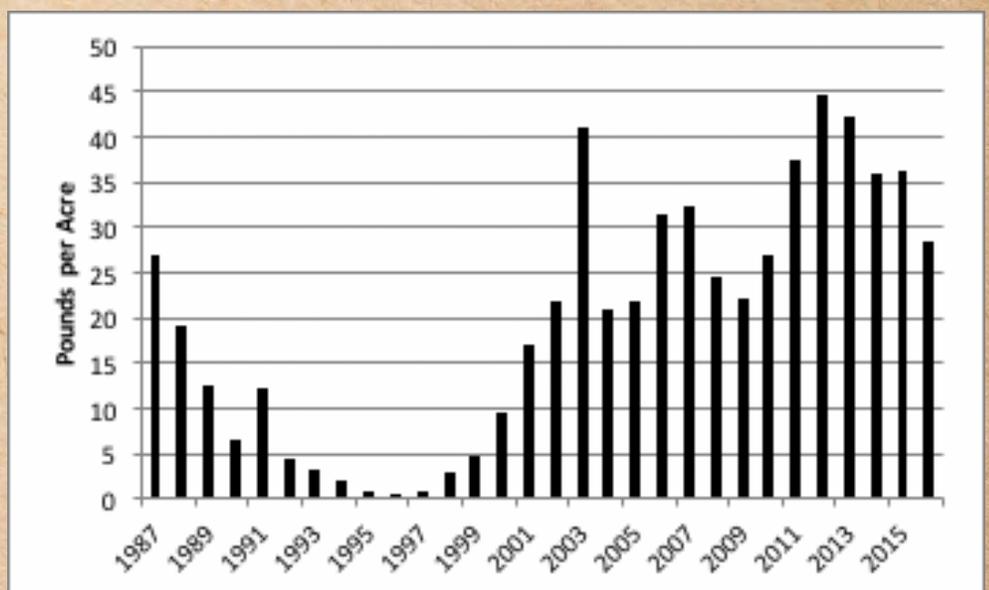


Figure 2. Estimated walleye biomass in the Red Lakes, 1987-2016.

ENVIRONMENTAL EZHI-AYAAG-GIDAKIIMINAAN

GROUNDWATER RESOURCE PROTECTION

One of the main concerns facing Red Lake's Environmental Response Program (RLERP) is the problem of open/illegal dumping on Tribal Lands. Open/Illegal dumping and illegal burning of solid wastes and household hazardous wastes poses a serious, long lasting threat to the environment and the health of the community members. The Red Lake Environmental Program has been working with the Solid Waste Program to address concerns of illegal dumping at the unofficial construction and demolition landfill area located adjacent to the Red Lake Transfer Station. The Phase I Environmental Site Assessment (ESA) indicated the need for further assessment and the Red Lake Environmental Program secured USEPA funding for a Phase II ESA to be conducted. The Phase II ESA included drilling for soil samples and sampling surface materials for asbestos and other contaminants. The samples are currently under analysis to determine if there is a threat to the groundwater and/or the surface waters in the area. Once the Phase II ESA results are available, a plan of action will be determined.



Tom, Joe and Jake of Environmental Troubleshooters Inc. drilling for soil samples at the illegal dumping area.



Open/Illegal dumping could potentially contaminate groundwater and surface water resources

Community members may contact the Red Lake Environmental Response Program (RLERP) at the RLDNR or complete the survey at <https://www.surveymonkey.com/r/gCBCH9M> with information regarding open/illegal dumping concerns for investigation by the Red Lake Environmental Program.

TESTING MERCURY IN LITTERFALL

Red Lake's Air Quality Program has partnered with the National Atmospheric Deposition Program (NADP) to sample mercury in litterfall. The NADP provides data and information in support of research on the exposure of natural and cultural resources to atmospheric chemical deposition. The purpose of this program is to get measurements in order to approximate a large part of the mercury dry deposition in a forest landscape. This is important because litterfall is a dominant pathway for mercury dry deposition to the forest floor, where it then becomes part of an active soil cycle.

Sampling sites are selected to be representative of the forest type for the area. After a site is selected, eight passive

collection bins are placed according to a predetermined grid at the beginning of autumn leaf drop. The locations for placement of the collection bins in the sample area are randomly selected for each study plot. After the sample bins are placed, litterfall samples (all of the leaves and needles, reproductive structures such as flowers and seeds, and woody material such as twigs and bark that fall from the canopy) are collected from the bins every four weeks until all leaves have fallen from the trees in the area and are sent to the lab for analysis. Mercury and methylmercury concentrations and deposition values are given for each site.

The Air Quality Program has worked with the NADP since the fall of 2014 to collect

litterfall samples (Site ID MN02). We were unable to provide any samples for analysis during the first year (2014), however, because our site was disturbed by bears. Since then, we have successfully collected litterfall in 2015 and 2016. Additionally, soil samples were collected in the litterfall sample area in 2016. 2015 and 2016 data is currently being analyzed.

For more information and a map of all monitoring sites participating in this program, visit <http://nadp.sws.uiuc.edu/newissues/litterfall/>.



Litterfall Collection Site: Bins are utilized for leaf litter collection and soil samples are taken for analysis



Free Radon Test Kits

Right now is a great time to test for radon in your home. Radon is an odorless, invisible gas that is released from the soil and can enter homes through cracks in the building's foundation – and it is the second leading cause of lung cancer. To protect yourself and your loved ones from

this gas, test your home with a free radon test kit. The only way to know if it is in your home is to test.

If you would like to test your home for radon contact: Jennifer Malinski at (218) 679-1618 to sign up for a free test kit.

WATER RESOURCES

EZHI-GANAWENJIGA ADEG-NIBI

WATER RESOURCES PROGRAM UPDATES

The annual 5th Grade Water Festival was held on October 6th at Concordia Language Villages and was well attended. Students from five schools throughout the Upper/Lower Red Lake Watershed came together to learn about various water related topics including bioassessment, wetlands, groundwater, and connections to the forest. We'd like to

thank all of our cooperators including Red Lake DNR Forestry, Fire Prevention, Wildlife, Environmental, and Fisheries Programs, Natural Resources Conservation Service, Minnesota Department of Natural Resources, Beltrami Environmental Services Department, and the Minnesota Department of Health.



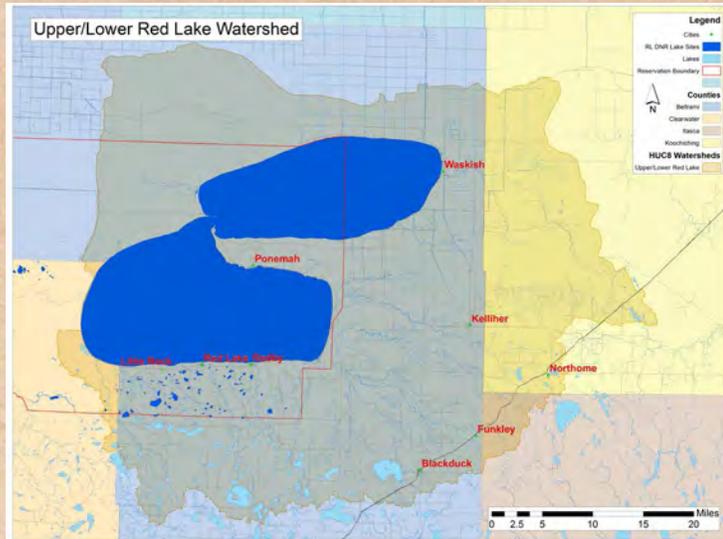


Figure 1

WRAPS UPDATES

Public meetings were held for the Upper/Lower Red Lake Watershed Restoration and Protection Strategy (WRAPS) in mid-October (see Figure 1, above). This is an ongoing process to determine water quality in all of the streams leading into Red Lake and to form partnerships with landowners and other natural resource agencies to make improvements where needed. Representatives from the Minnesota Pollution Control Agency (MPCA), Minnesota Department of Natural Resources, Beltrami Environmental Services Department, Red Lake Watershed District, and Red Lake DNR Water Resources Program were available to meet with the public with their concerns for water quality in the watershed as well as present information on findings from the previous two years of work. Summary reports will be available from MPCA in 2017. Watch the Red Lake DNR website (<http://www.redlakednr.org/wraps>) and future newsletters for more information.

WATER QUALITY ASSESSMENTS

Every 2 years, the Water Resources Program completes a comprehensive assessment of the surface waters that have been monitored during that period. This year's assessment was completed in late fall for the period of 2013-2015. For this time period, we assessed 59 stream sites on 33 streams and 70 lake sites on 58 lakes.

Overall, the quality of our waters is exceptional. Lakes have nutrient levels that are generally within the typical range for this ecoregion. Chlorophyll a (a measurement of algae), total phosphorus (a nutrient that promotes algal growth), and Secchi disk (a measurement of water clarity) are monitored for all sampled lakes. No lakes have shown significant decreases in water quality with the exception of Lower Red Lake. Lower Red has shown increases in phosphorus and chlorophyll. This will continue to be monitored closely. We are also investigating the history of phosphorus in Upper and Lower Red Lake for the past 200 years using information from sediment cores (see Spring 2016 newsletter).

Generally, streams are healthy. In some cases, streams are impacted by forest road maintenance issues. These have been prioritized for nonpoint source pollution prevention projects. Some streams have low dissolved oxygen in late summer possibly associated with artificially high lake levels. Currently, there is not a manageable solution to this issue. Other sites exceeding or approaching standards appear to be doing so as a result of natural background conditions. The vast majority of waters on trust lands appear to be safe, healthy, ecologically sound waters. There remains very little development in areas adjacent to them. This has contributed significantly to their overall health.

In lakes and streams where we are finding increasing levels of nutrients or degraded water quality, we will continue to monitor more intensively.

Meet our Staff:

TYLER ORGON is the Assistant Biologist. His primary responsibilities include collection of water quality data in streams, rivers, and lakes, maintaining equipment, and coordinating lab work. Tyler graduated from Bemidji State University with a Bachelor of Science in Aquatic Biology and has been working in the Water Resources Program for almost 2 years.



WILDLIFE AWESIINHYAG

WILDLIFE DEPARTMENT GRANT FUNDED ACTIVITIES FOR 2016

The annual waterfowl migration survey was conducted at Red Lake Farm, adding to the long-term data set and assessing the effects of Red Lake's habitat enhancement work. Spring migration peaked during mid-April, but during the entire migration survey period (March 21 - May 3), over 63,000 birds (18 species) were recorded.



Nest searching occurred on 550 acres of managed nesting cover, with each unit being searched 3 times from mid-May to mid-July. A total of 38 nests were found. The 2016 estimated nest success (13%) was down from 2015 (19%) and was attributed to

higher predator numbers and the loss of nesting acreage, as fields no longer under CRP contracts were converted to cropland, decreasing and concentrating local nesters, and possibly making predators more efficient.



Over 70 wood duck boxes were monitored, refurbished or replaced at Red Lake Farm and Butcher Knife Chain. About half of the 43 nesting structures were used. Numerous boxes were damaged and destroyed by bears this year, which contributed to the reduction in use by waterfowl.

The Wildlife Program continued their wild rice re-establishment efforts, hand-seeding 4,200 pounds of green wild rice to supplement stands in waterfowl management areas: Good Lake, Kivosay, Butcher Knife Chain, and Sandy Lake. Higher water levels in Sandy Lake and the Butcher Knife Chain contributed to reduced densities. Ditches and water control structures were continually monitored, maintained and cleaned, but this issue

will be further addressed in 2017 with the removal of blockages, dams, and beavers. In addition to the established rice areas, reconnaissance of a remote, shallow, 14-acre lake (Bender Lake) in the southwest corner of the reservation suggested conditions suitable for wild rice establishment. Using specialized equipment to access the lake, 800 pounds of wild rice were hand-seeded.



During winter 2015/2016, a pilot project with Tamarac National Wildlife Refuge and the American Bird Conservancy was begun. This is part of a region-wide effort ("Young Forest Initiative") and its main, long-term goal is to create openings in the dense alder/willow stands adjacent to aspen, to enhance areas for species dependent on early successional plant communities. A total of 250 acres were completed during the pilot project, and 550 acres are scheduled for treatment during winter 2016/2017.





GRAY WOLF INVENTORY AND MONITORING UPDATE



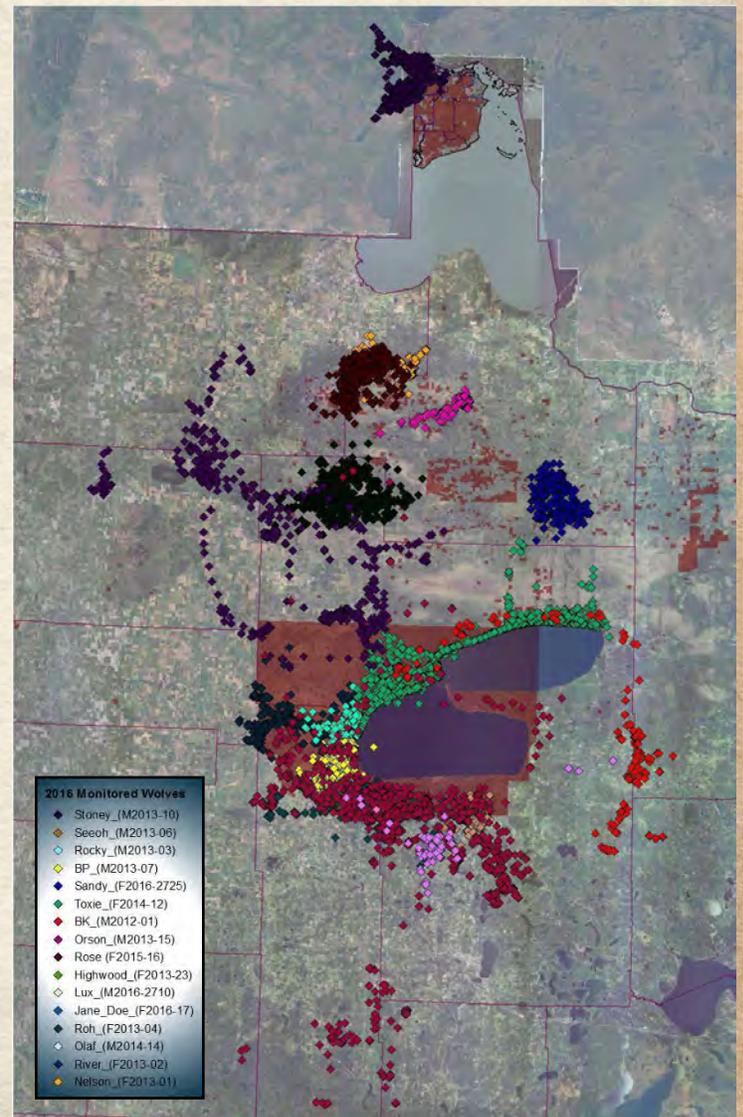
The Wildlife Program's wolf collaring project, started in 2012, continues to provide valuable data about the wolves using Red Lake lands. The amount of time collars remained on individual wolves varied from a few weeks (on pups) up to almost three years. During that time, the collars were programmed to take a location every four hours. The location points helped to map pack territories and sizes, determine travel corridors, and note dispersal and seasonal movements, and

habitat use. During the winter months, the collars enabled researchers to locate individuals from the air to obtain pack counts. a few times before heading over to the Thief Lake WMA. She was regrettably shot near Middle River in November of this year where she and the collar were recovered. Future efforts will focus on the NW Angle and Ponemah packs as well as attempting to get a second collar into the North Ridge pack.

Since 2012, 22 individuals in 12 pack areas have been collared on the Diminished Reservation (16), Ceded Lands (5), and the Northwest Angle (1), including 11 males and 11 females. Preliminary territory sizes vary with habitat, but wolves covered areas as small as 60 square miles to over 4,000 square miles with an average of about 250 square miles. The Wildlife Program has partnered with the MNDNR and USDA APHIS to successfully deploy Red Lake collars during the USDA's pilot project to collar wolves using non-lethal winter snaring techniques near established bait stations.

The focus of trapping efforts in 2015 and 2016 was to collar wolves in areas with no previously recorded collar locations. Although this led to fewer wolves being captured/collared during these years, the ones captured were in new territories and the data collected has been invaluable.

In 2016, the Wildlife Program tracked five collared wolves, two in the Ceded Lands, one on the Diminished, and two others collared in 2014 and 2015. The female collared near Morrison Lake in 2015, traveled to the Ceded Lands, made two circuits around Lower Red Lake (winter of 2015-2016) and more recently, traveled to the White Earth Reservation. Her travels have covered 4,371 square miles to date and passed through an estimated 11 pack territories. The female collared in 2014 was still active south of the Diminished Reservation in what is assumed to be her home territory. The female collared near the north boundary in August 2016 traveled into the Ceded Lands



FORESTRY

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The summers of 2012 and 2013 were tough growing years for trees. A lack of moisture resulted in the worst drought conditions northern Minnesota has experienced in nearly 30 years. Most healthy trees have no problem tolerating severe drought conditions, it's only when the trees are stressed from other factors that mortality occurs.



Figure 1: Areas in red show the bark beetle outbreak from 2010 aerial photos

White spruce were planted on the ridge in several locations in the late 1960's, replacing red, white and jack pine stands that were lost due to a multitude of factors including fire (or the lack thereof) and logging without adequate planning for regeneration. For instance, jack pine requires heat in excess of 120 degrees for the cones to open and distribute seed. White spruce is typically a scattered tree throughout the northern Minnesota landscape and has been known to grow in a wide variety of soils, if they are fertile. White spruce does not survive well in a plantation setting

and is especially not suited for the low fertility, sandy soils that make up most of the ridge's composition. When a forest stand is over-stocked with trees, as was the case with the white spruce on the ridge, it becomes even more susceptible to drought-induced mortality, and the stressed trees that aren't killed by the drought become a target for insects and disease, as they are less able to repel pests.

In July of 2012 Forestry staff started seeing widespread spruce mortality on the ridge (Figure 1). A forest health specialist was consulted and it was determined that the drought conditions had enabled a large scale bark beetle outbreak to occur, which, along with continuing drought conditions, was killing the trees. A decision was made to harvest the white spruce from the site and replant Jack Pine. Jack Pine (*Pinus banksiana*) can grow on very dry sandy or gravelly soils where other species can scarcely survive. Jack pine is a fast-growing, but relatively short-lived species that supports over 100 species of birds, mammals, reptiles and amphibians. Natural jack pine stands on the Diminished Reservation, and in Minnesota in general, have been losing ground (literally) for several decades now. The sandy, well-drained soils typically found underneath jack pine stands are ideal for some agriculture purposes. The US Forest Service estimates that 85,000 acres of jack pine or jack/red/white pine mixed forest were lost just between 2003 and 2013.



Figure 3: 150 acres of new Jack Pine plantations

Forestry Staff set up 3 different timber sale contracts (Figure 2) in the affected areas. Tribal loggers began logging operations in the summer of 2013. Approximately 850 cords of diseased wood were harvested from the sites. Operations were completed in the summer of 2015. Forest development then began site preparations for planting (Figure 3). Tops and limbs were windrowed and then burned by fire staff. Site scarification was completed in the summer of 2016 and approximately 140,000 Jack Pine seedlings from the Red Lake Forest

FIRE PROGRAM

A long Red Lake fire season finally ended just prior to Thanksgiving this year, continuing a trend seen last year with earlier starts and later ends to the season, with near-record high temperatures for March and for November this year. In 2015 we had our first wildfire on March 11, and in 2016 on March 13. In 2015 the last fire was on November 20, for this year November 13. Warm, dry, early starts and the same conditions near the end of our seasons make for a tired crew and shorten the life of our equipment, not to mention the additional expense. Whether all this is an indication of global warming or not, we can all agree that the last few years have included some very active fire seasons, with many days of extreme fire behavior.

The number of fires we average each year remains high, as is their acreage. Below are the numbers for the last ten years:

Total Fires	Acres Burned
2007: 348	12,015
2008: 219	1,675
2009: 224	330
2010: 435	2,426
2011: 370	984
2012: 581	1,666
2013: 266	7,070
2014: 390	507
2015: 534	1,901
2016: 445	1,202

The Red Lake fire prevention program has had a major impact through education and controls gained through the issuance of burning permits. The hazardous fuels reduction work done by contractors here has helped reduce the destructiveness and spread of fires, but the weather still determines and will continue to determine the length and severity of our fire seasons. We can't control the weather, but off-season planning, thorough preparation and intelligent use of our resources can make a difference. Also, our funding, which comes entirely from the federal government, is largely outside our control. In that regard we are at the mercy of the economy and of politics. Fortunately the Red Lake Fire program has a good record of following national policy, continuing improvement in effectiveness and has proven prudent and efficient in the use of taxpayer dollars, and allocations have been sufficient in the last few years, enabling upgrades to our facilities and workforce.



Season's Greetings & Best Wishes in 2017

General Ice Thickness Guidelines For New, Clear Ice Only

Remember that these thicknesses are merely guidelines for new, clear, solid ice. Many factors other than thickness can cause ice to be unsafe.



3"
or less
STAY
OFF

4"
Ice fishing
and other
activities
on foot

6"
Snowmobiles
or ATVs

9"-12"
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