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RED LAKE DEPARTMENT OF NATURAL RESOURCES

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LETTER FROM DIRECTOR

Boozhoo! Now that spring weather is here, be aware that our area has seen an increase in deer ticks in recent years. Please take a moment to read the article about tick safety in this newsletter. If you are doing some spring cleaning, be advised that burning your trash is a serious threat to public health and Red Lake's Hazardous Substance Control Act prohibits open burning of household wastes.

We are excited about the new research that the Waters Program is conducting! They partnered with the Science Museum of MN to drill sediment cores through the ice on both Upper and Lower Red Lake to reconstruct the history of the lake and investigate possible changes due to climate change.

Our Wildlife Program is once again counting spring migrating waterfowl at Red Lake Farms this year. This data is contributing to a long term data set that gives us some great information on trends in waterfowl populations to use for determining future habitat work on the reservation. This past winter, over 250 acres of brushland/forest were enhanced for use by golden-winged warblers through a cooperative effort with the American Bird Conservancy. This was a great project that will benefit many wildlife species.

Extremely late ice on and very warm temperatures through most of the winter, kept walleye harvest much

lower this year compared to last year's record winter harvest. Fishing should be very good this spring if the weather cooperates and anglers are able to get out. Red Lake fishing opener is on May 7, 2016. Take a kid fishing!

We are excited about our NEW and improved Red Lake DNR Website - www.redlakednr.org and Red Lake DNR Facebook page! New features including a new online burning permit application, current fire danger maps, current fishing and hunting regulations, and a new weather application are ready to view! We also plan on posting videos and integrating our Red Lake DNR Facebook page on the new website. Please take a moment, and visit us on the web!

Miigwetch!

Al Pemberton



ZIIGWAN (SPRING) 2016

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Strong March Walleye Bite Helps Winter Harvest

Extremely late ice on and very warm temperatures through most of the winter, kept harvest much lower this year compared to last year's record winter harvest. This year we took 28,000 pounds of walleye during the months of December and January compared to last year when we harvested 250,000 pounds during these months. This year's winter harvest of 193,720 pounds is slightly above the long-term average since 2007, but less than half of what we took in 2015 (*Figure 1*).

Fishing should be very good this spring if the weather cooperates and anglers are able to get out. Currently we estimate that there are about 13 million walleyes lakewide. This is a result of two of the strongest year classes that we have ever seen in Red Lake. The 2009 and 2011 year class which are currently between 14 and 19 inches in size. These year classes will sustain the fishery for at least the next 5 years. The walleye population remains very healthy and we are continuing to harvest the surplus and we hope to harvest around a million pounds of walleye this year.

Spring came early this year but then seemed to stall. The ice will likely go off about a week early this year compared to normal. The average ice off date of Lower Red is April 27th and the average ice off date for Upper Red is April 22nd. This should be good news for anglers, because the walleye should have a chance to spawn before the opener on May 7th. This will also allow the water to warm and the fish to become more active. We hope that everyone has a safe and enjoyable summer and try to take a kid fishing this summer; they will remember it for a lifetime.



Figure 1: Walleye harvested during the winter 2007-2016.





Reservation Walleye Fishing Regulations

Upper and Lower Red Lake and Tributaries

SEASON:

- The summer fishing season will open on May 7th, 2016 at 12:01 A.M.
- Ice fishing continues until the last Saturday in March.

BAG LIMIT:

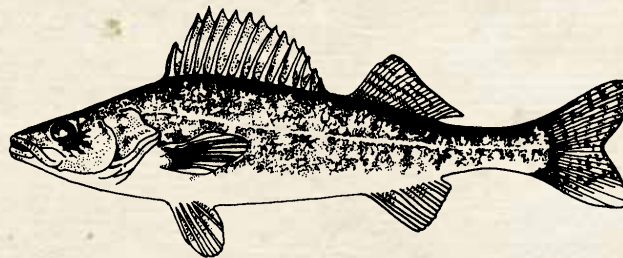
- *Personal Use* = 10 walleyes a day, 30 walleyes in possession.
- *Commercial* = 100 walleyes a day, must be turned into the Fisheries.

SIZE LIMIT:

- *Personal Use* = Walleye smaller than 22 inches may be kept, walleyes between 22 and 28 inches must be released, and only one walleye over 28 inches may be kept daily.
- *Commercial* = Only walleyes between 13 and 22 inches will be accepted at the Fisheries. This may change based on markets by the Fisheries manager.
- There is no size limit on walleyes caught below the Red Lake Dam in the Red Lake River west to the reservation boundary, but bag limits still apply.

ADDITIONAL REGULATIONS:

- Only Red Lake Band members may fish on the reservation waters of Upper and Lower Red Lake and its tributaries.
- The Red Lake River below the Dam does not close to fishing.
- Hook and Line is the only legal way of fishing.
- Fish must be transported to a residence before they are filleted.
- One proper fitting life vest is required for each person in any type of watercraft, including but not limited to boats, canoes, inflatables, jet skis and kayaks.



Protect, respect and enjoy the
Red Lake walleye into the future!

Spring Cleanup Hazards

Backyard Burning Is a Health Hazard

Backyard burning is a more serious threat to public health and the environment than previously believed. Burning household waste produces many toxic chemicals and is one of the largest known sources of dioxins in the nation. Red Lake's Hazardous Substance Control Act (HSCA) prohibits open burning of household wastes.



DIOXINS

What are dioxins?

Dioxins are highly toxic, long-lasting organic compounds. They are dangerous even at extremely low levels and have been linked to several health

problems, including cancer, and developmental and reproductive disorders.

How are dioxins formed?

Dioxins are formed when products containing carbon and chlorine are burned. Even very small amounts of chlorine can produce dioxins. Backyard and barrel burning releases significant amounts of dioxins. Trying to prevent dioxins from forming by separating out items high in chlorine content is not effective, since low levels of chlorine are present in most household trash.

How are we exposed to dioxins?

Dioxins accumulate in the food chain. Airborne dioxins can settle onto feed crops, which are then eaten by domestic meat and wildlife animals. Dioxins also can settle on water or enter waterways through soil erosion. These dioxins accumulate in the fats of animals, and then in humans when we consume meat, fish, and dairy products.



Other Air Pollutants

Smoke from open burning contains hazardous pollutants such as particulate matter, sulfur dioxide, lead, mercury, and hexachlorobenzene. These pollutants can have immediate and long term health effects such as:

- Asthma, emphysema, and other respiratory illnesses.
- Nervous system, kidney, or liver damage.
- Reproductive or developmental disorders.

Not only are the people who burn trash exposed to these pollutants, but so are their families and neighbors. Children, the elderly, and those with preexisting respiratory conditions can be especially vulnerable.



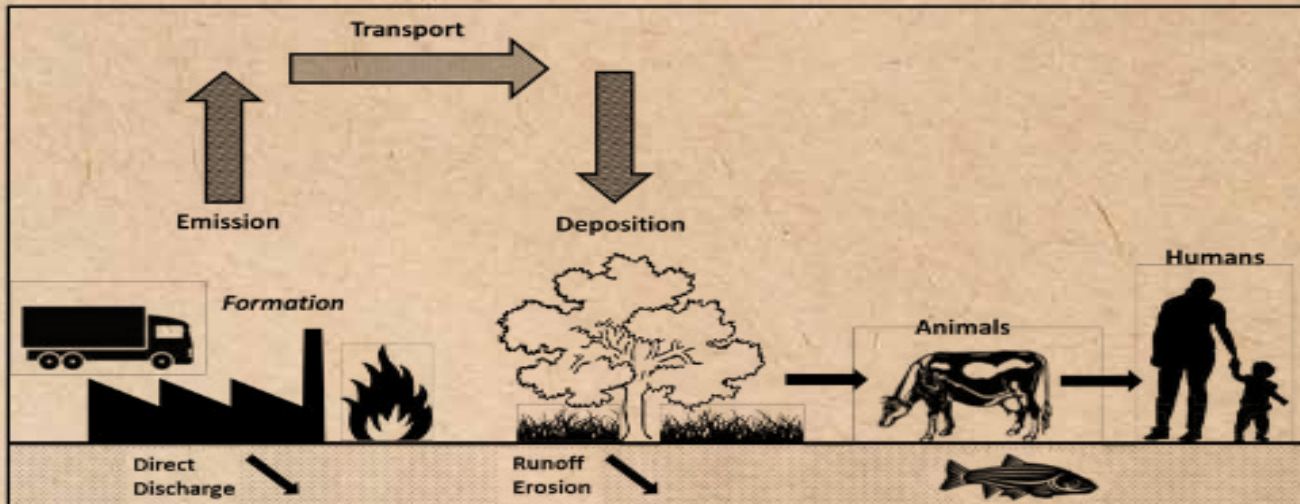
Ash

The ash residue from backyard burning can contain toxic pollutants, such as mercury, lead, chromium, and arsenic, which can contaminate vegetables if scattered in gardens.

Children can accidentally swallow toxic materials from dirt on their hands while playing near discarded ash.



Dioxin in the food chain



WHAT YOU CAN DO:

Reduce. You can reduce the amount of waste you generate by using durable, long-lasting goods and avoiding disposable items; buying products in bulk; and looking for products with less packaging.

Reuse. Reusing items is another way to reduce the amount of waste you generate. Repair, sell, or donate used or unwanted items.

Recycle. Red Lake has begun to research the development of a recycling program. Currently, drop-off locations are available in many surrounding communities for recyclable materials.



Compost.

Composting is a great way to dispose of yard trimmings and food scraps, while creating a natural, free fertilizer. There are many resources available to teach homeowners how to build composting bins.

Properly Dispose of Waste. Don't litter or dump illegally. The Red Lake transfer station provides collection sites in the Red Lake, Redby, Ponemah, and Little Rock communities.

Your Environmental Programs are in place to protect the people and environment of the Red Lake Band of Chippewa Indians. We are available to provide guidance to the communities and anyone concerned about the environment in which we live and work. Community participation and feedback are always welcome. Together we can protect our treasured resources for ourselves, our children, and all generations to come.





WATER RESOURCES

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Paleolimnology Research on Red Lake

The Red Lake Band and the Science Museum of Minnesota are partnering to conduct a research project on both Upper and Lower Red Lake. At our request, staff from the Science Museum joined staff from the Red Lake DNR on both lakes in March in order to take sediment cores through the ice. The ice was good this year, and travel went smoothly with the exception of a total whiteout on day two as we traversed Upper Red Lake. The sediment cores are collected by pressing long plastic tubes into the lake bottom to recover sediment without mixing it up. Keeping the sediment intact is important because it allows the scientists working on it in the lab to reconstruct the history of the lake using various paleolimnological techniques.

Paleo...what? No, it's not a new diet fad. Paleolimnology (*Paleon* = old, *limne* = lake, *logos* = study) is a scientific discipline that uses microscopic fossils and chemical constituents in lake sediment to reconstruct the historical environments in lakes. The fossils are typically diatoms (pictured below) and insects with parts that don't easily decompose. Diatoms are a group of algae which have shells made of silica (basically glass). As time goes on and these organisms die, they sink to the bottom of the lake and leave a fossil record in the sediment. The

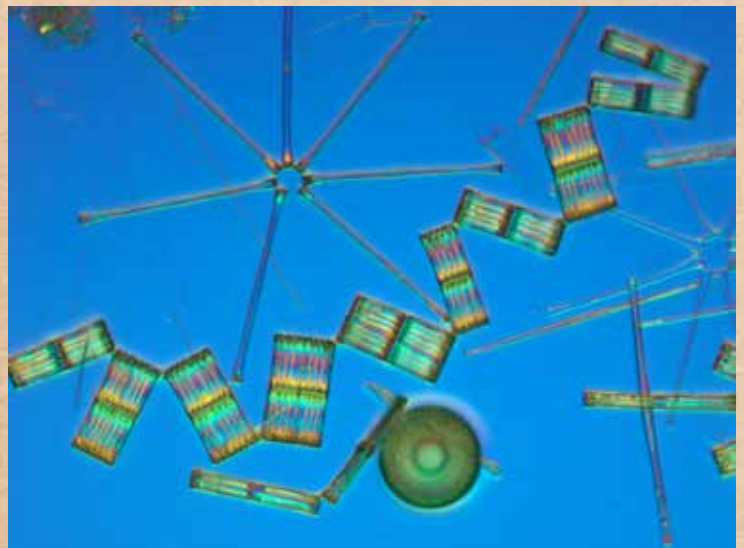
different groups of organisms can tell us a lot about the history of the lakes. Different groups of organisms thrive in different ecological conditions. More of a particular species might mean more phosphorus was present at that time. Another species might tell us something about the type of phosphorus. Others may inform us about the oxygen or nitrogen availability.

Their position in the sediment tells us when in time they were placed there. The further down in the sediment an organism is found, the longer it's been since it was buried. Measuring concentrations of naturally occurring radioisotopes can put actual dates on the different layers of sediment. This can be important if we're attempting to align conditions in the lake with conditions around the lake.

So what's the point? Well, knowing what the conditions in the lake were over the past two hundred years will help us to understand what impacts European settlement and related changes in land use in the area had on the lakes. This will help us to establish what "normal" conditions in the lake should be. We will also see what community shifts have occurred in the last few decades and be able to determine whether there have been any changes which may be associated with



Photo credit: Mark Edlund, St. Croix Research Station



Examples of diatoms from sediment cores.

Photo credit: Mark Edlund, St. Croix Research Station

climate change. We are particularly interested in this last question because recent paleolimnology work on Lake of the Woods seems to indicate a shift in algal communities only in the last 20 years or so. Whether this change is associated with climate change is difficult to know for sure but it does help us direct our water quality monitoring efforts. The bottom line is: The more we know about the lake the better job we can do protecting it!

If you have interest in this project, or any other project that the Water Resources Program is working on, give us a call or contact us through the website. We're happy to provide information to the public, presentations to classrooms, and representation at public meetings whenever it's needed.



Adam Heathcote of the St. Croix Research Station (Science Museum of MN) with Shane Bowe and Ola Cobenais of the Red Lake Water Resources Program collecting sediment cores on Lower Red Lake.

Water Resources Program Updates

Spring is here and that means lots and lots of sampling for the Water Resources Program! We collect water quality data from all of the major streams flowing into Red Lake. Our work extends far off the Reservation at times in order to catch water quality problems at their source rather than at the lake. We even collect data from Lake of the Woods and the streams flowing through tribal lands there.

Being located in the headwaters area of the Red Lake River certainly has its advantages. Water quality is quite good overall in this area. With minimal development and no major industrial sources of water pollution we only have minor concerns within our watersheds. This doesn't mean we can ignore them. We are always looking for pollutants of concern and working with local partners like the Natural Resources Conservation Service, Beltrami Soil and Water Conservation District, and Minnesota Pollution Control Agency to protect existing water quality and improve it where we can. We will be publishing an extensive water quality assessment in the coming months with much more detail. Be sure to check it out on the new Red Lake DNR Website.

Please remember to give our staff plenty of space if you see them leaning over a bridge or culvert in order to take a water sample. And please don't get too close if you see them in the stream. They may be using electrofishing equipment, and while it's safe for trained personnel, it can be dangerous to bystanders.



Ola Cobenais, Water Resources Technician collecting water quality data at a stream crossing on the Reservation.

WILDLIFE AWESIINHYAG



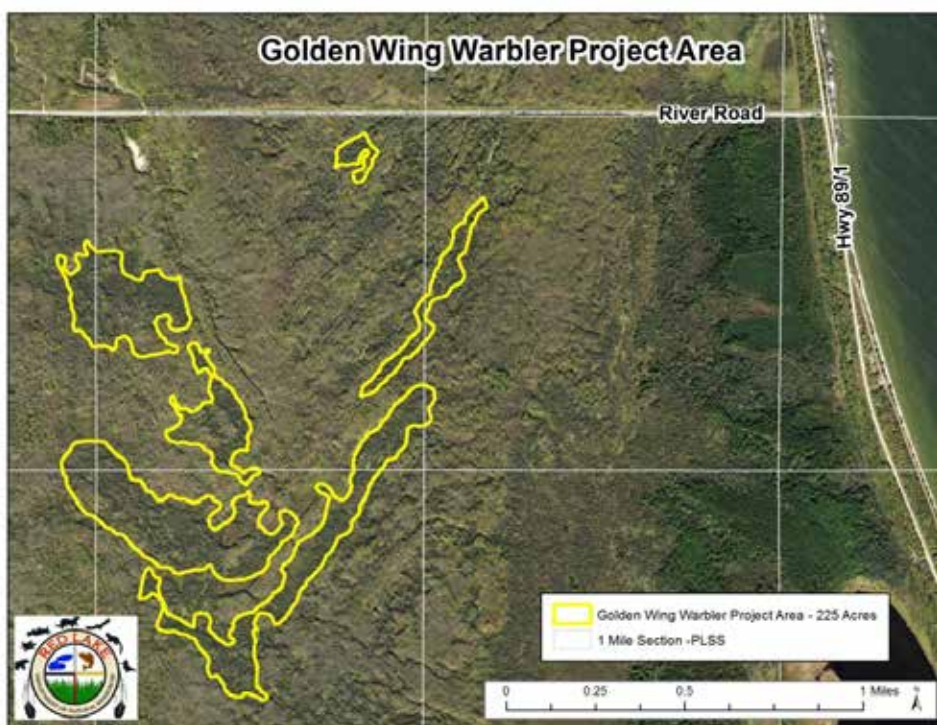
Red Lake Completes over 250 Acres of GWWA Habitat on River Road

Golden-winged Warblers (GWWA) are small song birds that are specialist species, requiring “young,” or early-successional forests for breeding. The GWWA's depend on the conservation and habitat maintenance of breeding areas throughout the Great Lakes Region. GWWAs have suffered one of the steepest population declines of any North American songbird species, with a decline of more than 3 percent annually over the last 45 years. This decline is due primarily to habitat loss and land use change, particularly the loss of early successional or “young” forest

habitat adjacent to mature forest stands. GWWAs require a diverse habitat in order to complete the summer breeding portion of their annual life cycle. Like American Woodcock, GWWAs nest on the ground in forest openings located next to older deciduous forest stands. Once the chicks have fledged, the parents will move the brood into the mature forest where they will teach their young to forage on various insects (especially leaf-rolling caterpillars) until they leave for their wintering grounds at the end of the summer.



In the last few years, local bird surveys have shown a strong GWWA population on the Red Lake Reservation. This past winter (during frozen ground condition), American Bird Conservancy and the Red Lake DNR enhanced over 250 acres of early succession GWWA habitat in the brushland/forest interface near the River Road Area (see map). Winter shearing of over- mature alder, willow, and sumac created a diverse mix of vegetative size and structure required by breeding GWWAs, as well as benefitting other local wildlife species (deer, moose, bear, grouse, woodcock. etc).



Spring Waterfowl Migration Surveys

Research has found that Minnesota's cultivated wild rice farms can provide important habitats for waterfowl and other wildlife. Trends in waterfowl use and nesting success at Red Lake Farms have been tracked annually since 1997. In 2011, much of Red Lake Farms was taken out of wild rice production which resulted in a drastic reduction in waterfowl use of the area. In 2015, the number of flooded acres for cultivated rice was increased which provided the Wildlife Program with a unique opportunity to study the short term effects of paddy acres available on local waterfowl use and production. The data from these surveys is used to evaluate the effects of habitat enhancement and restoration projects and to help guide future management efforts in the area.

Each spring, the Red Lake DNR – Wildlife Department conducts spring waterfowl migration surveys on the cultivated rice paddies at Red Lake Farm. Migration surveys are conducted to evaluate use of habitats. Species composition and density (number of birds per flooded paddy acre) are recorded along a pre-selected survey route. The route has included up to 19 cultivated wild rice paddies, covering up to 970 acres. The route is chosen with regard to representative habitat and vehicle access, and includes paddies of various sizes (19.6-118.3 acres), shape and surrounding habitats. The survey is conducted weekly in the mornings, when waterfowl are most active. Surveys usually begin in late March, when the rice paddies start getting flooded and sometimes continue into early May.

The spring migration surveys is followed by one week of breeding pair surveys. The count is done to provide an idea of the local breeding population that will potentially be nesting in the area that year. This is done by identifying the duck species and determining if they are potential breeders for the year (lone drakes, pairs or groups of less than 5 drakes) or if they are in a bachelor group (groups of more than 5 drakes). The spring migration survey is typically done in mid-May, after most of the northern breeders have flown out. Mallards, blue-winged teal and ringed-neck ducks are the majority of species remaining during the breeding pair survey.

The timing of waterfowl migration at Red Lake Farms is influenced by weather and open water availability on the paddies. The total number of ducks and total number of waterfowl species migrating through is also dependent on open water availability at Red Lake as well as the amount of open water available further west in the Central Flyway, which can vary considerably from year to year (see graphs). Mallards, tundra swans and northern pintails are usually the first species to arrive in large numbers, followed by ring-necked ducks, lesser scaup and American wigeons. Blue-winged teal and green-winged teal numbers usually peak in mid-April, followed by northern shoveler in early May. On average, mallards, tundra swans, lesser scaup, northern pintails and ring-necked ducks account for over 80% of the birds recorded during the spring surveys. Spring use of the paddies usually peaks around the second or third week in April.

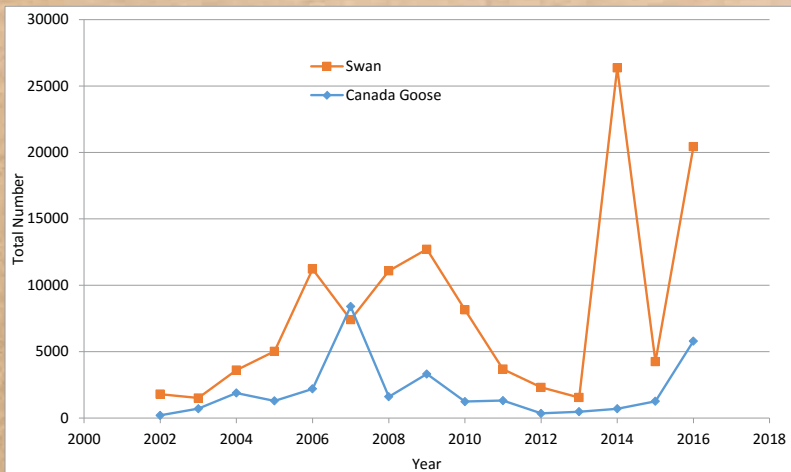
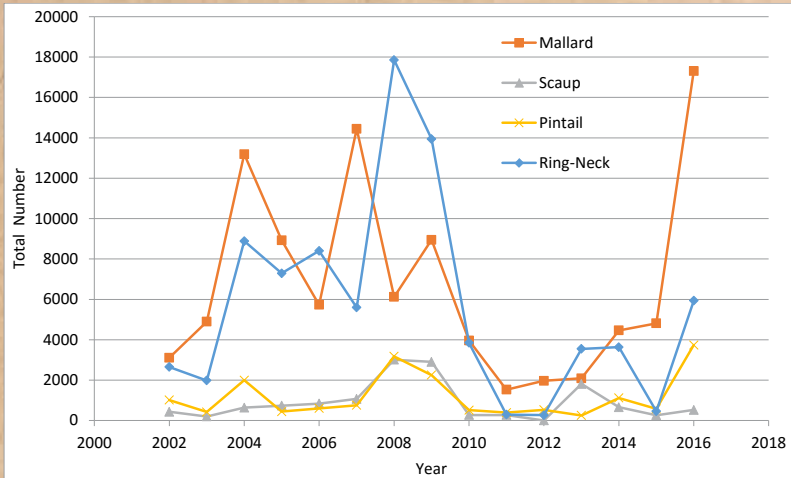
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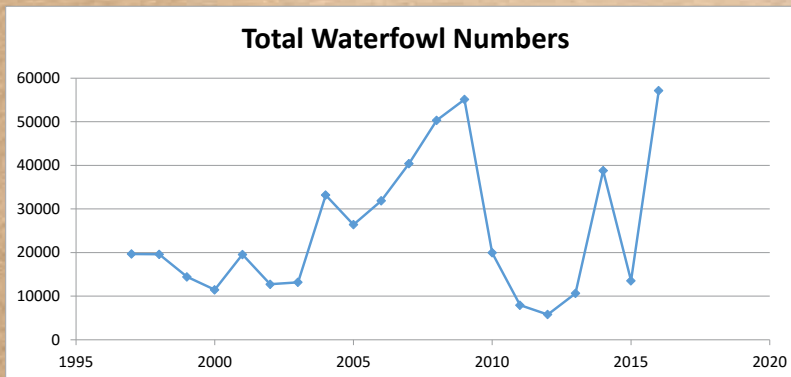
WILDLIFE AWESIINHAYAG



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Total number of ducks (by species) recorded during spring migration surveys at Red Lake Farms, 2002-2016.



Total number of birds recorded during the spring migration surveys at Red Lake Farm, 1997-2016. The low numbers from 2011-2013 is due to a drastic reduction in the number of flooded acres at Red Lake Farms for growing cultivated wild rice during those years.



FORESTRY

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New Red Lake Fire Center

The Red Lake Nation DNR Wildland Fire Program moved into a brand-new facility in the fall of 2015 - next to the Red Lake Elementary School. The 16,000 square foot facility features 9 heated garage stalls for storage and maintenance of Fire Engines. A helipad is located on site for helicopter for recon and fire suppression work. All fire programs (Wildland Fire, Fire Prevention, Aviation, Dispatch, and Fuels Management) are now under the same roof. Dispatch has a state-of-the-art office now to direct fire suppression activities. A workout room with

treadmills, lockers and showers, allows firefighters to keep up on their fitness while maintaining the ability to respond to fire calls. The new Red Lake Fire Center was funded by the Bureau of Indian Affairs.



Tick Season is here!

Red Lake DNR staff would like to advise the public that deer ticks (also known as blacklegged ticks) are active and abundant in the woods now. Deer ticks are the main carrier of Lyme disease, and may transmit other diseases such as Human Anaplasmosis, Babesiosis, Ehrlichiosis, and Powassan Virus.

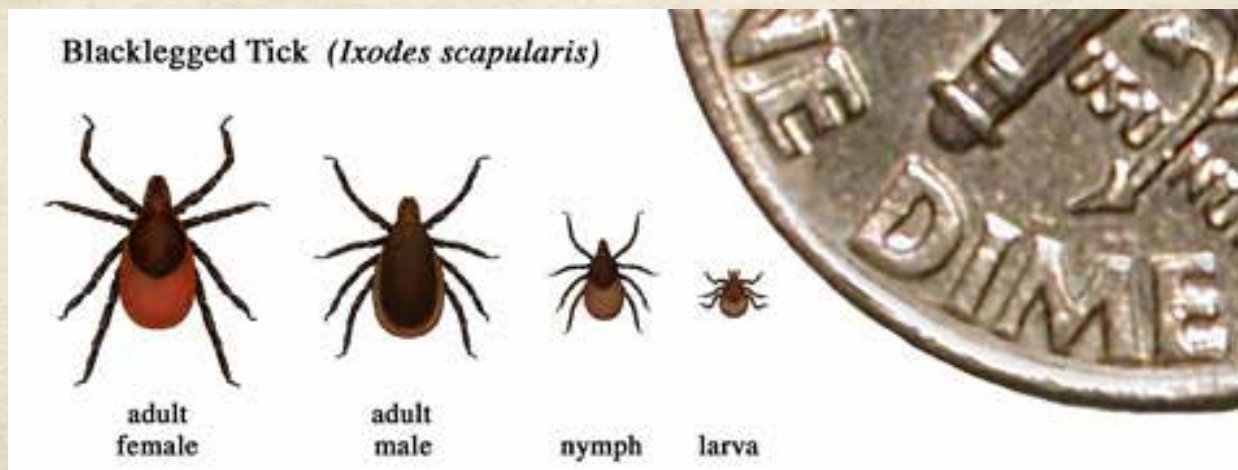
Red Lake, and the surrounding counties of Beltrami, Clearwater and Itasca, are classified by the Minnesota Department of Health as having the highest risk of Tick-Borne Diseases in Minnesota.

Please check yourself and your children after being outside. Deer ticks are small, and during the nymph stage of their life cycle can be very difficult to find. If you find a tick embedded in the skin, or want more information about deer ticks, please visit the following websites or go to your local health care practitioner (IHS). Symptoms to look for include headaches, fever, joint aches, fatigue, and raised/weltd skin around the bite. Physicians may be able to prescribe antibiotics to treat the diseases.

<http://www.health.state.mn.us/divs/idepc/dtopics/tickborne/index.html>

<http://www.cdc.gov/lyme/transmission/blacklegged.html>

<http://canlyme.com/lyme-basics/>





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