NORTH DAKOTA OUTDOORS

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Matters of Opinion

Terry Steinwand
Director

Not everything you read in these pages offer reason to celebrate.

In last decade alone, *North Dakota OUTDOORS* has chronicled the fall of Conservation Reserve Program acres across the state, declining deer and pronghorn populations, which have lead to a reduction in hunting opportunities, the fallout of historic flooding along the course of the Missouri River and elsewhere in the state, and so on.

These topics, while unsettling, are part of the hard reality of living in a climate of radical extremes.

In this issue of *OUTDOORS*, however, you don't have to dig too deep to find reason to applaud.

In the first feature, "Naming North Dakota's Lakes," magazine editor Ron Wilson interviews Game and Fish Department fisheries managers on their approach to naming new managed fishing waters.

While how some lakes got their names makes for an interesting read, the underlying message of why this is a topic to begin with is more significant.

The significance is the fact that North Dakota's landscape is flush with managed fisheries, more than the state has ever harbored in its history. This, of course, is wonderful news to anglers who have many choices when it comes to finding places to fish.

In this land of extremes, where we can go from an abundance of water to drought in a big hurry, there is no question that these are the good old days of fishing.

On the shooting side of things, the feature on the reconstruction of MacLean Bottoms Shooting Range details the major facelift the outdoor facility underwent last summer.

With valuable help from Ducks Unlimited and countless hours of hard work by Game and Fish Department staff, the MacLean Bottoms Shooting Range is nothing like it once was.

And that is a good thing.

According to correspondence from area shooters, the transformation at the range, located on Oahe Wildlife Management Area, is applauded.

While I understand that shooting enthusiasts are appreciative of the new-look range, my hope is that a sense of ownership and respect for the resource follows in step with that appreciation.

As Department fisheries chief for many years, the rise and fall of Lake Sakakawea was always a major topic of management optimism and concern.

Nothing has changed.

Today, however, instead of talking about the woes of too little water, too little cold-water habitat and too few forage fish, the big lake supports booming forage and game fish populations.

Lake Sakakawea, which suffered through years of drought for much of the 2000s, is back and anglers are certainly applauding.

To learn more about Sakakawea's rebound, I encourage you to read the feature by Dave Fryda, Department Missouri River System supervisor, as he provides detailed insight into the reservoir's return.

Outside these pages of *OUTDOORS,* there is much more to appreciate and applaud. I encourage you to get outside and experience what North Dakota's great outdoors has to offer.

Terry Steinwand

NORTH DAKOTA
OUTDOORS
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The mission of the North Dakota Game and Fish Department is to protect, conserve and enhance fish and wildlife populations and their habitats for sustained public consumptive and nonconsumptive use.

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TABLE OF CONTENTS

FEATURES

DEPARTMENTS

Front Cover

Blue-winged teal hen and brood. These diminutive ducks are typically the most abundant breeding duck in North Dakota, but they are early migrants, and by the time hunting seasons starts, many of them have already left the state. *(Photo by Craig Bihrle, Bismarck.)*

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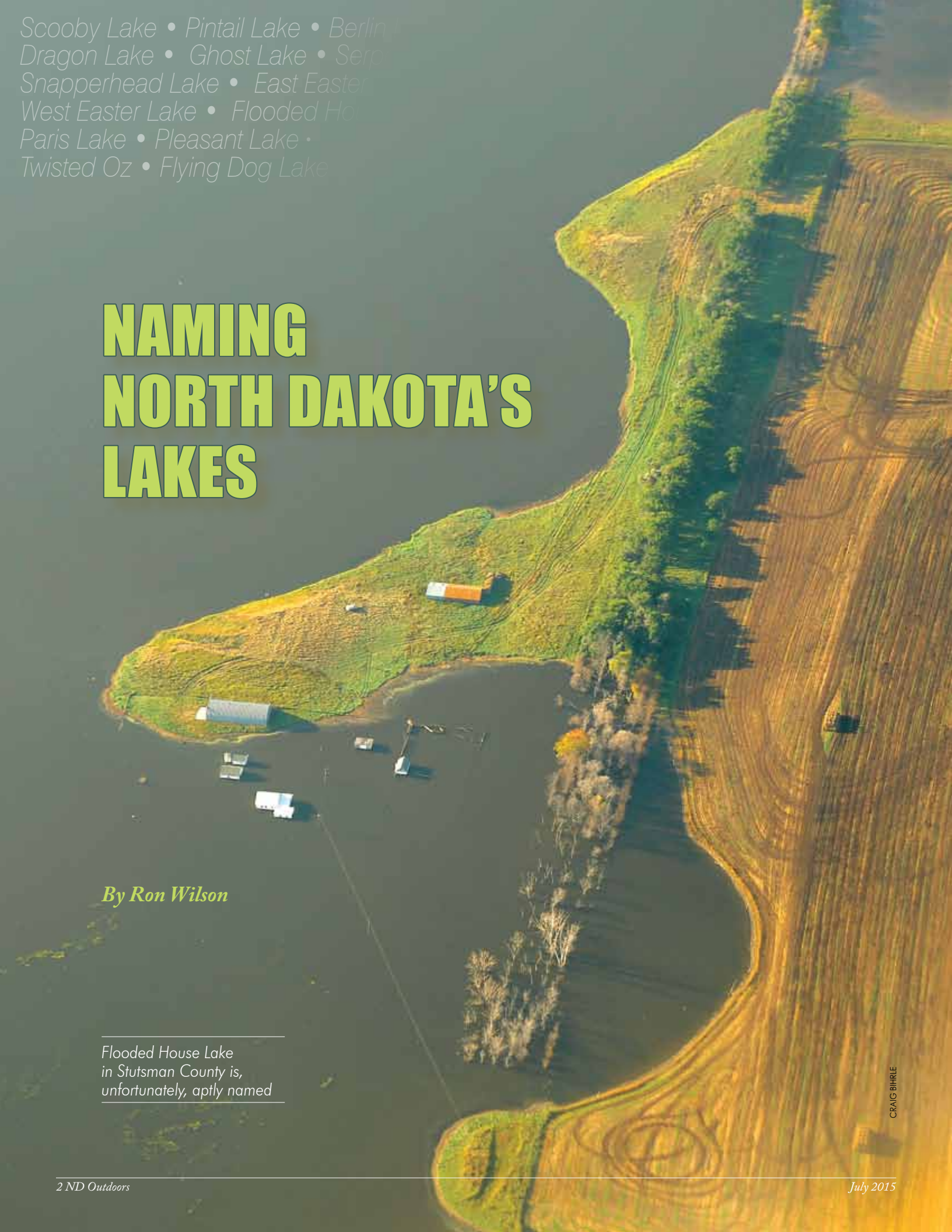
NAMING NORTH DAKOTA'S LAKES

By Ron Wilson



Flooded House Lake in Stutsman County is, unfortunately, aptly named

CRAIG BIHRLE

It's been asked before, but what's in a name?

Plenty, it turns out, especially when it comes to assigning a handle to the many new lakes scattered across North Dakota's countryside.

With a historic number of waters in play today, Game and Fish Department fisheries managers are tasked with the sometimes head-scratching assignment of giving a lake a proper name.

Readers of *North Dakota OUTDOORS* likely noticed some lake names in March-April's fishing waters report that didn't ring familar. And closer examination in the fish stocking report reveals several more.

Many of the waters in the latter, and some of which we refer to throughout this article, are for now deemed "inactive." Meaning, fish have been stocked, but populations are currently too small, but getting there, to interest anglers. Even so, like those waters that are active, they need a name, too.

When naming a new water, Game and Fish district fisheries supervisors start with the basics and move on from there if necessary.

"I first look in the county atlas to see if the water body is named," said Randy Hiltner, northeast district fisheries supervisor. "If not, I'll ask the local game warden if they know what the locals call the lake. If the warden doesn't know or can't find a name, then I'll check the atlas for land ownership near the water and assign a landowner name."

Or: "For the most part, I've named new lakes based on the landowner's last name that contacted Game and Fish requesting a fish stocking," said Jason Lee, north central district fisheries supervisor. "Sometimes the landowner will come up with the new name, such as Scooby Lake in McLean County."

Paul Bailey, south central district fisheries supervisor, said some lakes lie on wildlife management areas or waterfowl production areas that already have names, so he typically follows suit.

"If a landowner grants us a public access easement, they usually get the lake named after them," Bailey said. "Or they get to name the lake, which was the case with Dale Jasper who named the Koenig lakes to honor the maternal side of his family who lived near the lakes in Kidder County."

And when all else fails: "I come up with a name myself," Bailey said. "Most recently, Pintail Lake in McIntosh County because it was covered in its namesake the first time we stocked it."

With greater concerns, such as managing new waters and providing public access, the lake naming task is lacking some zip, said Brandon Kratz, southeast district fisheries supervisor.

"Unfortunately, we haven't been very creative when it comes to naming our lakes," Kratz said. "As you can likely attest, a creative or imaginative lake name often adds to its mysteriousness, which is an attractive component of fishing."

Scooby Lake in McLean County is one of many developing fisheries in the state that needed a name.

GREG GULLICKSON

Both Lake Helen (right) and Lake Isabel in Kidder County (bottom) are among a number of gender specific lakes in the state. Some others include Lake Elsie, Richland County, Lake Gertie, McLean County, Lake Laretta, Nelson County, Lake Josephine, Kidder County, Jaunita Lake, Foster County, and many more.

CRAIG BIHRLE

When the landowner tie or whatever name the locals call a new water doesn't work, Kratz adjusts accordingly. For example, in 2014, he named the following waters in his district for a variety of reasons:

- Berlin Lake – Name after the Berlin Baptist Church located on the northern shore.
- Dragon Lake, Ghost Lake, Serpent Lake and Snapperhead Lake – All resemble their namesakes on aerial photographs.
- East Easter Lake and West Easter Lake – Both stocked for the first time on Easter Sunday.
- Flooded House Lake – Named for the house and farmstead that was flooded as the lake kept rising.
- Paris Lake – Named after Paris Township.
- Pleasant Lake – Named after Mt. Pleasant, a relatively high hill to the south of the lake.
- Twisted OZ Lake – Named after a previous cattle partnership between Ova and Zimmerman.

Name Game

While the Game and Fish Department's lake database could, unfortunately, be overrun in this era of high water by lakes named Flooded House, there is just the one.

CRAIG BIHRLE

Yet, including both active and inactive waters, there are two Cherry lakes, three Dry lakes, five Long lakes, five Silvers and the list goes on.

One answer for the redundancy likely has to do with pure happenstance. Plus, considering that word travels so much faster and farther than it did back when some of the lakes were named, it's no wonder North Dakota ended up with four Pelican lakes in as many counties.

"If people back in the day called their lake Silver because it looked silver the day it was named, it's unlikely they knew that four counties away there was another lake named Silver," said Scott Gangl, Department fisheries management section leader.

With a number of lakes with identical or similar names, an angler has to pay close attention to fishing reports to make sure he or she is envisioning the right water.

In Kidder County alone, for example, there is a run on Alkaline lakes. There's Long Alkaline, Salt-Alkaline, Etta-Alkaline Complex and Alkaline Lake.

"And to further muddy things, Alkaline Lake is still called Alkali Lake by many people," said Greg Power, Department fisheries division chief. "And add to that, there is an Alkali Lake in Stutsman County and another in Sargent County."

One lake in Logan County has three names, which can be confusing. This water either goes by, depending on who is talking, Mueller, Miller or Logan WMA.

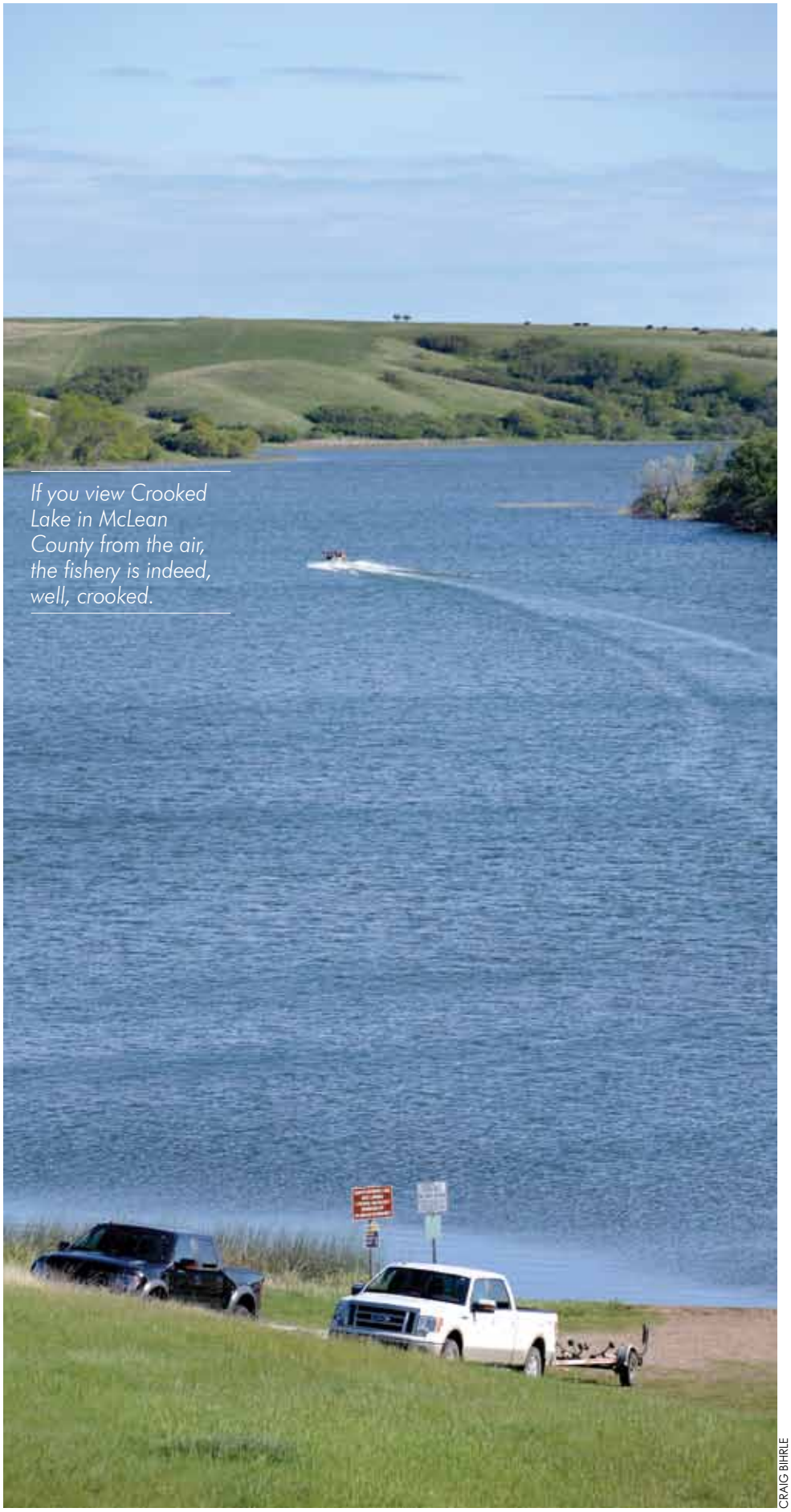
"We go by Logan WMA, but some locals called it Miller Lake when we started managing it," Power said. "At least it's located in Logan County, which cuts down on some of the confusion."

Then again … There is yet another lake in Logan County called Logan Lake, which shouldn't be confused with the Mueller, Miller, Logan WMA fishery.

Got it?

If not, ponder this. How did Flying Dog Lake get its name?

***RON WILSON** is editor of North Dakota OUTDOORS.*



If you view Crooked Lake in McLean County from the air, the fishery is indeed, well, crooked.

CRAIG BIHRLE

The photograph on the left was taken in May 2012, while the one of the right was shot in August of the same year at Oahe Wildlife Management Area south of Bismarck. By comparing the two photographs that were taken roughly three months apart, it's easy to see how the land continues to reclaim itself after major flooding in 2011.

SANDRA JOHNSON

PHOTOGRAPHING LANDSC

By Ron Wilson

A study on deer numbers and habitat use in the badlands was reopened and repurposed after sitting dormant in Game and Fish Department filing cabinets for years.

"There were several components to the study, which was ceased in 1980," said Sandra Johnson, Department conservation biologist. "However, the Game and Fish Department maintained the data files, photographs and general location maps of all 85 sites that were distributed across the badlands."

In the early 1960s, Department big game biologists established the 85 study sites on public lands in western North Dakota to determine how many deer, and how those deer, were using the habitat.

The study sites were revisited every three years in July and August to collect vegetation data. Every six years photographs were taken from the same locations at the sites.

"While Game and Fish staff at the time conducted various surveys at the sites, including deer pellet counts, what we are

SANDRA JOHNSON

interested in today is the location of the sites and retaking photographs," Johnson said. "By revisiting these photo points years later and shooting our own images, we can determine habitat change over time."

Yet, finding the sites, marked by rebar and other markers from clues found in the files, wasn't easy.

In 2011, the Department contracted with a company to locate and/or reestablish the sites. That summer they found 62 of the 85, while Game and Fish staff found an additional 12, making the total 74.

"The badlands is a pretty unique, special area in the state, with a number of unique animals," Johnson said. "One question, from comparing photos from 50 years ago to today, is the influence habitat changes over time have had on native wildlife.

"One of the things you see by comparing the photographs is the transformation of grassland habitat to one dominated by juniper trees, particularly in the northern badlands," she added. "So, does that mean that the animals, like grassland-nesting birds, have moved somewhere else?"

Also, you can see individual big sage bushes that have persisted, basically unchanged, for more than 50 years. Big sage is an important habitat component for both sage grouse and pronghorn.

While badlands sites initially garnered the most interest from biologists, Johnson said old records show that photo points were also established at five management areas in the state and the Sheyenne National Grassland. Data collection at these sites, she said, was also suspended in the late 1960s or 1970s.

Old photo points on some of these WMAs have been found by Game and Fish Department staff.

APE CHANGES OVER TIME


NORTH DAKOTA GAME AND FISH DEPARTMENT ARCHIVE PHOTO


SANDRA JOHNSON

These photographs taken 50 years apart at Riverdale Wildlife Management Area show how the shrub understory (1961) was replaced mainly by grasses over time.

SANDRA JOHNSON

SANDRA JOHNSON

Not surprising, some of the vegetation that reclaimed areas of Oahe Wildlife Management Area following flooding in 2011 was unwanted weeds.

"The comparison of present day vegetation composition versus that of decades ago will provide biologists and managers with an insight to landscape change," Johnson said. "There is a need to find the remaining sites on WMAs and to establish new photo point monitoring sites on key areas of certain WMAs."

This includes WMAs that, for example, harbor unique or rare habitat, such as native prairie, or have experienced extreme landscape change events, such as flooding.

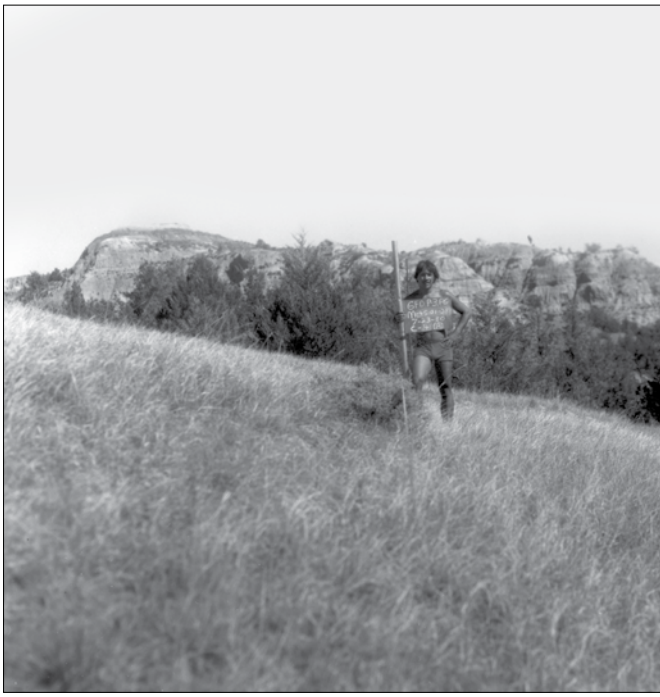
When historic flooding occurred along the Missouri River in 2011, Game and Fish Department staff understood the value in documenting the effect on habitat at Oahe Wildlife Management Area south of Bismarck.

Department staff established 18 photo point sites, each consisting of four photo point transects, on Oahe WMA in spring 2012. They marked the sites with yellow, 6-inch markers mounted on metal posts.

With the photographer stationary, photos were taken north, south, east and west to provide sort of a panoramic view.

The first photographs were taken in spring 2012 and then later that fall, Johnson said. Since then, photographs have been shot periodically for the last three years from all 18 sites.

NORTH DAKOTA GAME AND FISH DEPARTMENT ARCHIVE PHOTO



"At some of the sites, it was amazing how fast some of the vegetation responded after flooding," Johnson said. "From spring to fall that first year, young cottonwoods were rooted and growing and some of the willows were taller than Department staff helping with the photo point survey."

In the short term, what the photo point survey work on Oahe WMA provides biologists is some insight and hope from the fallout of the flood.

"We're just hoping that some of the new cottonwoods that are established continue to persist and mature," she said. "Because native cottonwood stands along the Missouri River are aging and disappearing, we want to see these new stands 20 years from now, providing the kind of environment that native species along the river have relied on for eons.

"Years from now, the next generation of biologists will be able to look at the photographs we've taken and tell the landscape has changed, one way or the other," she added. "The photographs will tell the story."

RON WILSON *is editor of North Dakota OUTDOORS.*

Installation and Photo Point Techniques

The North Dakota Game and Fish Department uses a photo point monitoring scheme that provides a nearly 360 degree view of the landscape. A center reference post is flanked by four transect posts at 100 feet in each direction.

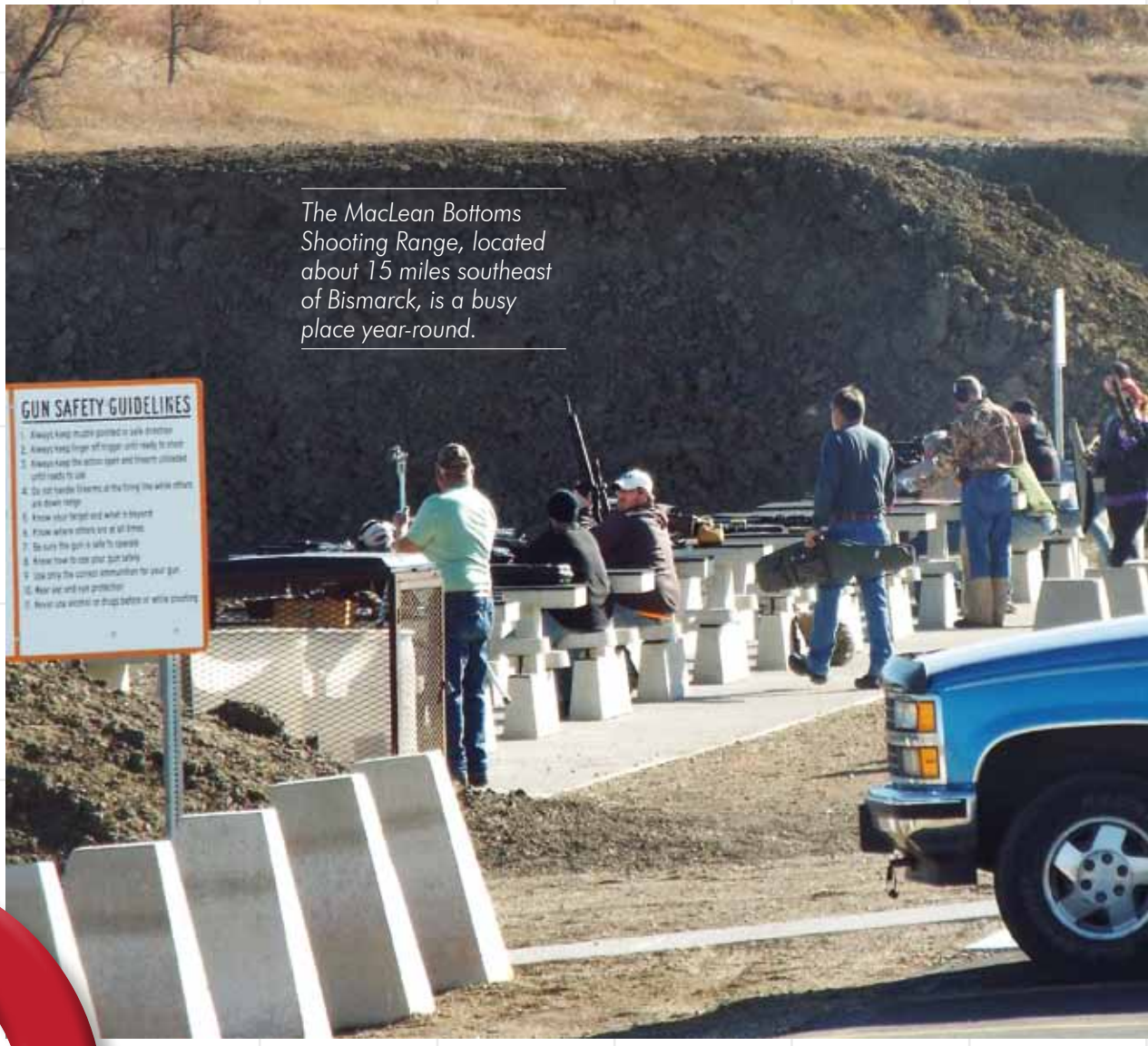
Some specifics:

- Reference posts at all sites are at least 4 feet above ground.
- Transect posts are 2 feet above ground in woodland settings and roughly flush with the ground in grassland or open settings.
- An official Department sign is displayed on reference posts.
- Smaller signs may be displayed on transect posts.
- The camera is centered on a tripod over the reference point.
- The person holding the photo identification board and pole stands at the 40-foot mark. Sometimes obstacles prohibit this and adjustments are made.

NORTH DAKOTA GAME AND FISH DEPARTMENT ARCHIVE PHOTO

SANDRA JOHNSON

These three photographs were shot, respectively from left to right, from the same location in 1962, 1980 and 2012 in the badlands in western North Dakota. By comparing photographs from a half-century ago to today, biologists have to question the influence habitat changes over time have on native wildlife.



The MacLean Bottoms Shooting Range, located about 15 miles southeast of Bismarck, is a busy place year-round.

Reconstruction at Shooting Range Hits Target

By Ron Wilson

The name and location of MacLean Bottoms Shooting Range remains the same, but little else.

Located on Oahe Wildlife Management Area south of Bismarck, the popular shooting range received a major facelift in 2014. Reconstruction at the site started in June and was completed in early fall.

BILL HAASE

"The shooting range was getting old and it was time for an update," said John Mazur, North Dakota Game and Fish Department hunter education coordinator. "It's such a drastic change from what it used to be. It doesn't even look like the same place."

Bill Haase, Department wildlife resource management supervisor, said damage to the range from Missouri River floodwaters in 2011 also had a hand in deciding to reconstruct, rather than make repairs.

"There were a number of things that needed to be repaired, so we decided that if we were going to do the work, we might as well do it right," Haase said.

Haase said layout of the reconstructed range is different than before as it now takes up less of the WMA, which offers hunting and other outdoor activities.

"The shooting range took up more of the WMA than desired and people couldn't hunt when others were shooting at the range," Haase said. "The way the range is laid out now, it's a safer environment for everyone involved."

The shooting range today features seven, 200-yard shooting stations, 15 shooting stations at 100 yards and nine at 25 yards for rifle and pistol target shooting. Each station also includes a handicap access ramp.

"Before, long range shooting was limited to just 100 yards, but now people can shoot out to 200 yards," Haase said.

Haase said crews also added concrete and asphalt for a much-improved parking lot and road.

Other features include concrete tables with seats that accommodate both left- and right-handed

BILL HAASE

A number of changes were made to the shooting range on the Oahe Wildlife Management Area, including the addition of concrete and asphalt for a much-improved parking lot and road.

shooters and a 12-foot high berm around each range to eliminate ricochet.

Haase said much of what was done during reconstruction is in accordance with National Rifle Association guidelines.

"We wanted to make it safer and we've done that," he said. "With the way the shooting range is laid out now, people are now all shooting in the same direction."

The overall cost of the project was about $300,000. Haase said Ducks Unlimited was a valuable partner and provided engineering, surveying and construction management services.

"This is an unconventional project for DU. We have skilled engineers and were looking to expand our services to one of our long-time partners beyond creating waterfowl habitat," said Roger Smith, DU director of engineering in a DU news release. "Game and Fish needed engineering services for this project and we had the resources to help."

Brad Karel, DU project manager, added that a topographic survey of the area was conducted and the range was oriented to eliminate sun glare for the shooting areas.

Mazur said the shooting range, which has been up and running for months, will receive security cameras soon.

"The cameras are simply another safety feature," he said. "We don't want to catch anyone doing something wrong, we just want to create a family friendly environment that will encourage even more people to use the range."

Haase said the range is getting plenty of use so far. It's rare, he said, to go to the range and not find people shooting.

"In the past, the range would only be busy prior to deer season when hunters were sighting in their rifles," he said. "Now it's being used 365 days a year, it's year-round."

The hope, Haase and Mazur agree, is that by providing a nice shooting range, those who use it will take some ownership in the outdoor facility.

"So far, we've only had a few issues, compared to before reconstruction," Haase said. "We want people to read the rules posted on signs and follow them. For the most part, that is being done."

Mazur said the Game and Fish Department has heard from many people who use the reconstructed range and comments are positive.

"Because we have this nice, presentable range, people are treating it better," he said. "There is more respect for the resource."

Greg Link, Department conservation and communication chief, said for those who were kids 35-40 years ago or who grew up in a rural setting, having a place to sight in a deer rifle or just plink at targets was something that was taken for granted.

The shooting range was oriented in such a way to eliminate sun glare for the shooting areas. A 12-foot high berm around each range was also constructed to eliminate ricochet.

BRAD KAREL

"Nowadays, not having a safe place, like the butte behind grandpa's farm, to practice and become proficient at shooting can be a real bottleneck for young hunters," Link said. "As properly sighted rifles and accurate shot placement are key components to safe, ethical and proficient hunting and shooting, the Game and Fish Department believes it has a responsibility to provide opportunities for hunters, especially beginners, to hone their skills."

For this reason, Link continued, the Department not only operates and manages gun ranges on several wildlife management areas near urban areas in the state, but also provides grant funds to clubs operating private shooting ranges.

"The newly renovated shooting range at MacLean Bottoms, provides a safe, cost-free, easy-to-access opportunity for area hunting and shooting enthusiasts," he said. "However, just like grandpa's farm, we shouldn't take it for granted. If misused and abused, the Department may find the need to charge fees, tightly enforce, or even close the public ranges it manages."

RON WILSON *is editor of North Dakota OUTDOORS.*

BILL HAASE

PUBLIC SHOOTING RANGES

The North Dakota Game and Fish Department manages five public shooting ranges on its wildlife management areas.

The ranges are open to the public year-round. However, the Department may periodically close shooting ranges for routine maintenance, improvements and special events.

Exercise extreme caution, especially when conditions warrant a change in the fire danger index.

- **MacLean Bottoms –** 2 miles south of ND Highway 1804, approximately 15 miles southeast of Bismarck.
- **Wilton Mine WMA – 2** miles east of Wilton.
- **Little Heart (Schmidt) Bottoms –** 12 miles south of Mandan off ND Highway 1806.
- **Riverdale WMA – 2** miles southwest of Riverdale.
- **Lewis and Clark WMA – 6** miles southwest of Williston.

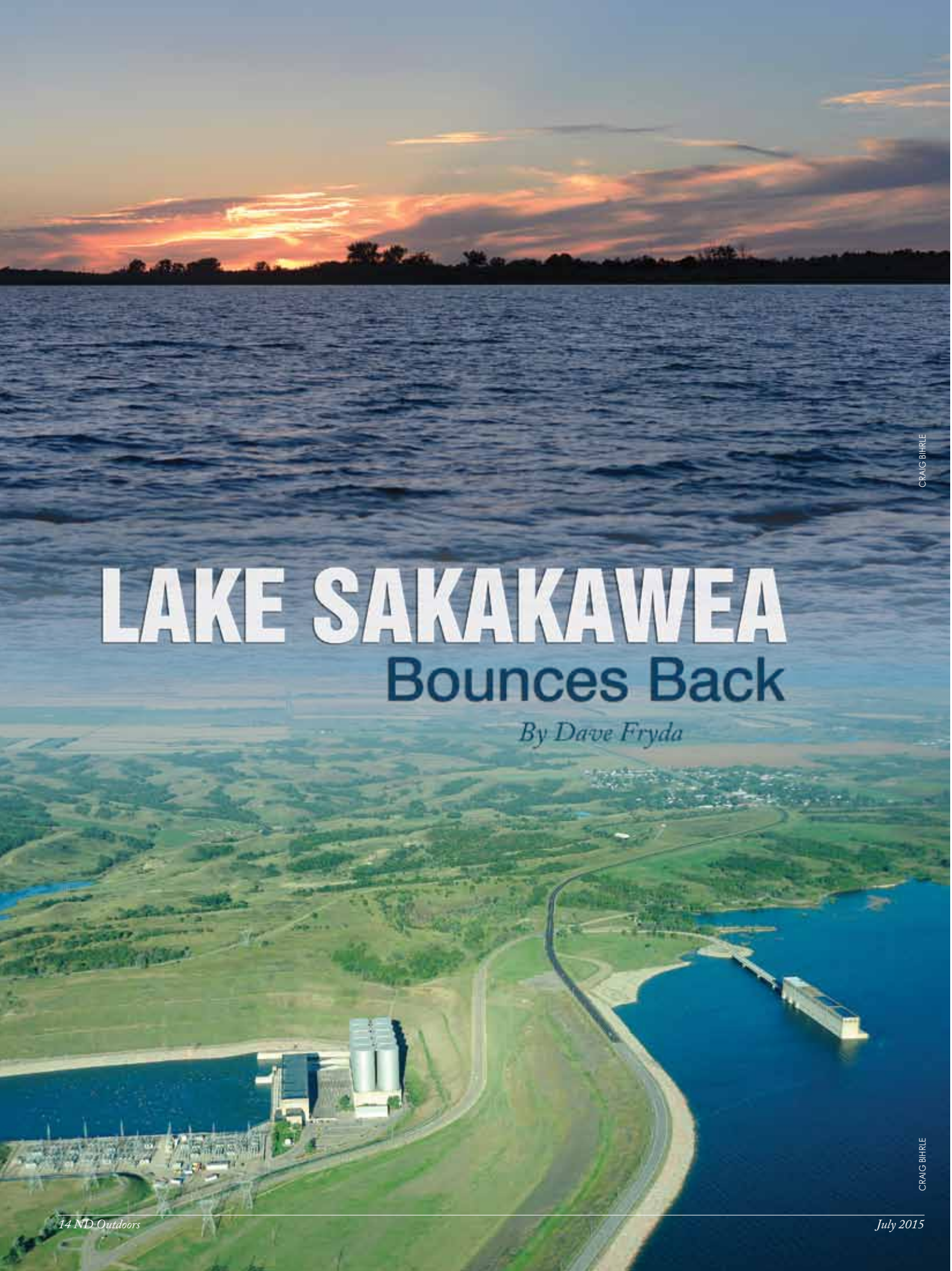
Keeping these ranges open is the responsibility of all users. Please help educate other shooters to enforce the rules for the safety of all. If you witness violations please call RAP at 800-472-2121.

The total cost of the shooting range project, which hosts an untold number of shooting enthusiasts year-round, was about $300,000.

BRAD KAREL

Concrete shooting tables, with seats, accommodate both left- and right-handed shooters.

BRAD KAREL



CRAIG BIHRLE

LAKE SAKAKAWEA
Bounces Back

By Dave Fryda

CRAIG BIHRLE

Five years ago, *North Dakota OUTDOORS* featured an article that outlined the reasons for great optimism for the future of Lake Sakakawea's fishery.

Record drought that had gripped the reservoir for much of the 2000s had recently ended, and for the first time in many years good things were starting to happen. The optimism expressed in 2010 has become reality and today Lake Sakakawea supports a booming population of forage and game fish.

While it's understandable to want to put those lean years behind us, it's important to look back to discuss how critical water levels and water management are to the fishery.

Lake Sakakawea is North Dakota's largest water body and consistently ranks at or near the top in popularity among anglers. Not surprisingly, many people take a keen interest in the condition of the fishery and how it changes over time.

The rise and fall of Sakakawea's fishery is easily summarized in one word – water. More specifically, how much water is in the reservoir and how it is managed by the U.S. Army Corps of Engineers. In simplest terms, water means habitat, and as with all wildlife, the amount and quality of habitat determines the carrying capacity of a fishery.

People can easily see and understand the considerable loss of habitat across North Dakota's landscape and the influence it has had on many wildlife species. However, the effects of too little or too much water on fish habitat in a large reservoir like Sakakawea are not as easily seen.

Rising, Falling Water Levels

Because we live in a climate of extremes, it is understandable that the reservoir has and will continue to experience periods of drought and floods. A look at long-term water elevations on Lake Sakakawea illustrate the increased variability over time.

When Garrison Dam was closed in 1953, Sakakawea steadily filled, reaching full pool in the mid-1960s. For the next 20 years, water levels generally remained good and the excellent habitat provided by the new reservoir allowed forage and game fish populations to flourish. However, that changed dramatically when the drought of the late 1980s and early 1990s decimated the fishery.

In just the last decade, Lake Sakakawea experienced an all-time low of 1,805.8 feet above mean sea level in 2005, and a record high level during the historic 2011 flood. At its low point in 2005, Sakakawea only contained about 40 percent of the water it had in 2011. It's not surprising that these rapid and dramatic changes have likewise caused significant changes in the fishery. We are fortunate to have a long standardized data set for a variety of surveys on Lake Sakakawea. Data collected from these various surveys over the last 50 years have proved invaluable in understanding the importance of proper water management on the fishery.

This data is the backbone of our management of the fishery, and the information is also used to annually provide water management recommendations to the corps.

Over the years, two things related to water management on Sakakawea have become clear. First, adequate lake elevations are critical. Ideally, Lake Sakakawea would remain above 1,825 msl at all times, as the fishery rapidly deteriorates below that elevation. And, if the reservoir would remain above 1,832 msl, that would be even better.

Below these elevations the reservoir experiences dramatic declines in productivity, a substantial loss of walleye and smelt spawning substrate (gravel/cobble), and coldwater habitat (for rainbow smelt and chinook salmon) quantity and quality is greatly compromised.

On the flip side, excessive lake elevations above 1,846 msl can cause shoreline erosion that degrades spawning substrate.

In addition to adequate water levels, a rising pool during the critical April and May spawning and egg incubation period is critical.

Using data from our surveys and looking at water levels allows us to examine a few select components of the fishery and how water levels have influenced fish populations recently and historically.

Smelt

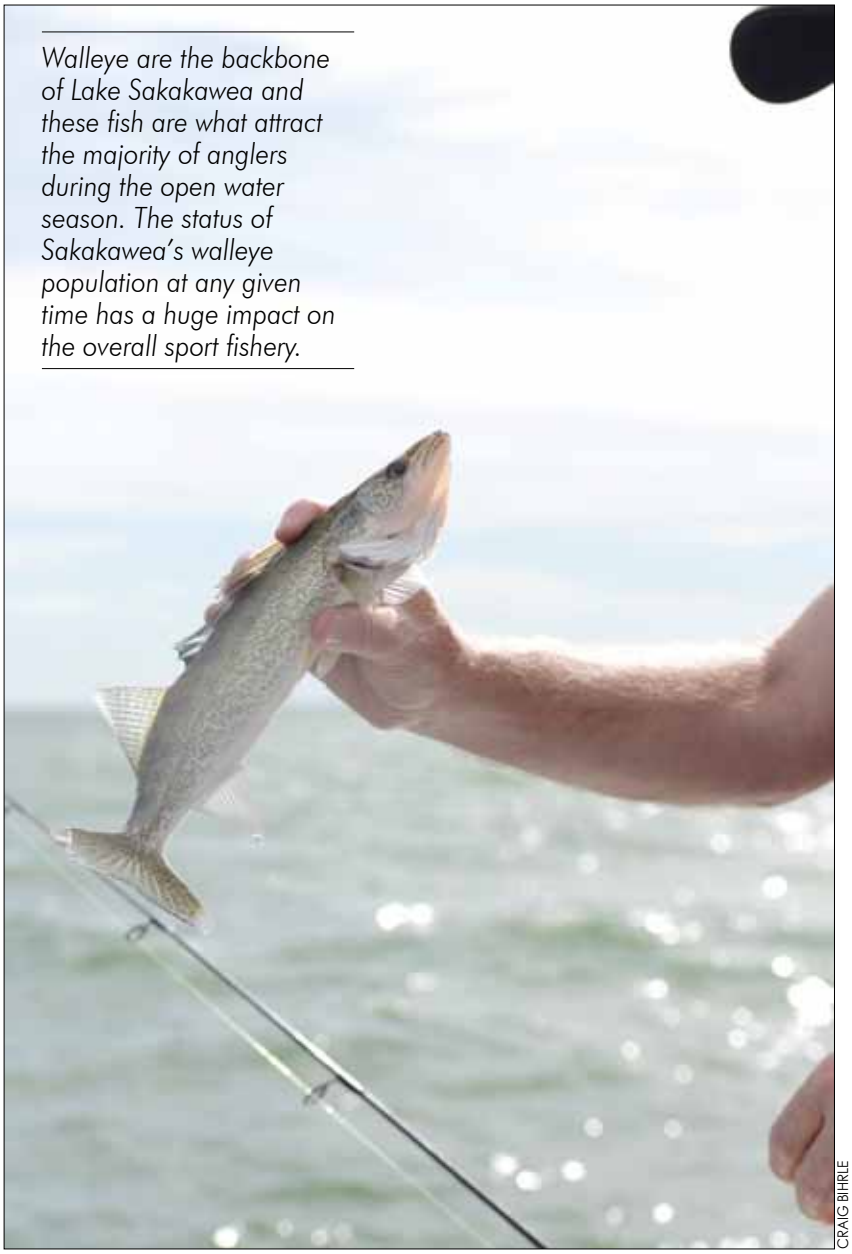
The most recent drought and corresponding low water levels caused low smelt abundance from 2004 to 2009.

Population estimates in 2006, 2007 and 2008 were the lowest documented since standardized hydroacoustic surveys began. During this period of depressed smelt abundance, we did experience a moderate spring rise a couple of years, however, the extremely low lake level and poor spawning substrate largely resulted in little or no reproduction.

As mentioned before, lake elevations below 1,825 msl are detrimental to smelt spawning and reservoir productivity. Unfortunately, the lake remained

Because we live in a climate of extremes in North Dakota, it is understandable that Lake Sakakawea has and will continue to experience periods of low and high water levels.

CRAIG BIHRLE



Walleye are the backbone of Lake Sakakawea and these fish are what attract the majority of anglers during the open water season. The status of Sakakawea's walleye population at any given time has a huge impact on the overall sport fishery.

CRAIG BIHRLE

below that critical level for five years and the smelt population was devastated.

The smelt population began to recover in 2009, with the population estimate increasing dramatically in 2010 to the highest level since surveys began. From 2009 to 2011, Lake Sakakawea had excellent rising water levels during the spring smelt spawning and egg incubation period and the population responded. In fact, 2009 and 2011 saw a 3- and 5-foot rise in lake elevation during the critical period.

The 2011 population estimate of 83 million smelt was approximately eight times the record low estimates of the 2006-08 surveys. However, large numbers of smelt were entrained through Garrison Dam during late summer and early fall of 2011 as record releases occurred to deal with the flood.

The high level of entrainment in 2011 caused concern that coldwater forage would decline dramatically in 2012 and the survey indicated about a 40 percent decline in abundance from the 2011 survey. Fortunately, the substantial decline occurred at a time of high smelt abundance. The 2013 population estimate remained virtually unchanged from the 2012 survey.

Water levels dropped during the 2012 and 2013 spawning season and smelt reproduction was generally poor. Spring of 2014 experienced favorable spawning conditions with the lake rising more than a foot during the critical period. Not surprisingly, smelt responded well with exceptional reproduction in 2014, boosting the population (135 million) to the highest level since the survey began in 1999.

To put the magnitude of the smelt recovery into perspective, smelt in 2014 were 14 times more abundant than they were in 2008.

The dramatic rebound of Sakakawea's smelt population illustrates the importance of proper water level management.

Warm Water Fish Production

Production of other warm water forage and game fish species is also intricately tied to adequate water levels and a rising pool in spring.

Fisheries biologists have annually conducted fall reproduction surveys to gauge annual spawning success over the last 40 years. These surveys document the magnitude of spawning success of game fish, including walleye and northern pike, as well as a variety of forage species like spottail shiners and yellow perch.

Over the decades, the three most critical variables in water levels for predicting annual spawning success have been total spring rise (April 15

to July 15), total lake rise for the year, and increase in water level from the previous year.

As noted earlier, a rising pool is critical for rainbow smelt reproduction, but also has a big influence on most other species. The increase in water level from one year to the next is an indicator of how much terrestrial vegetation is flooded in the spring. Flooding of vegetation is critical to the spawning success of northern pike and yellow perch, and also boosts overall reservoir productivity.

In years such as 2009, when a lot of terrestrial vegetation was flooded, record or near record reproduction was noted for many species, most notably northern pike and yellow perch.

Northern Pike

The Sakakawea pike population exhibits classic boom and bust cycles directly related to wet and dry periods. During a 15-year filling period (1953-1967), a strong northern pike fishery developed with the flooding of terrestrial vegetation. After reaching full pool in 1967, good pike reproduction ceased, although a respectable pike fishery remained into the early 1970s.

During the drought of 1988-92, a residual population of pike could be found in Lake Sakakawea. A second boom in the pike fishery occurred due to excellent natural reproduction in 1993, 1994 and 1995 as the lake refilled.

The most recent drought (2000-08) set the stage for what would become the greatest pike explosion in Sakakawea's history. With the dramatic gains in water elevation experienced in 2008 and 2009, thousands of acres of terrestrial vegetation were flooded and pike reproduction responded favorably. In fact, the record high pike abundance documented in 2012 was more than twice the previous documented high of the last 50 years.

Those abundant young-of-the-year northern pike produced in 2009 and subsequent years recruited to the population in high numbers and currently make up the bulk of the population. While abundance has declined somewhat, average size is increasing and Sakakawea is again becoming a prime destination for trophy pike.

Walleye

Walleye are the backbone of Lake Sakakawea and their population status at any given time has a huge impact on the overall sport fishery.

Given the dynamic nature of the reservoir, it is not surprising that the walleye fishery has undergone many changes in the last 50 years. After filling in 1967, a relatively stable water level and significant wave erosion allowed for development of good shoreline cobble/rubble substrate. This was conducive for walleye spawning, with numerous good year-classes established between the mid-1970s and early 1980s.

As these year-classes aged, Lake Sakakawea became nationally renowned for its trophy sized walleye. For example, in 1988, more than 1,200 8-pound-plus walleye were reported to the Game and Fish Department.

CRAIG BIHRLE

Lake Sakakawea is North Dakota's largest water body and consistently ranks at or near the top in popularity among anglers. Because of this, many people take a keen interest in the condition of the fishery and how it changes over time.

CRAIG BIHRLE

More than any other species, chinook salmon success or failure in Lake Sakakawea is closely tied to water levels. High water ensures good smelt populations and adequate coldwater habitat favored by these fish.

The big walleye era was likely due to a perfect combination of events. The reservoir was still relatively new and highly productive. In addition, the introduction of smelt in 1971, and subsequent population explosion, resulted in those big walleye year-classes of the 1970s and 1980s having optimum forage conditions throughout their entire life.

Unfortunately, beginning in the mid-1980s, natural reproduction declined dramatically due to low lake levels and inclement weather. To compensate for poor and/or irregular natural reproduction, intensive stocking of walleye fingerlings began in 1989. These efforts revitalized the fishery in the early to mid-1990s, and partially negated the effects of a drought (1988-1992).

The refilling of the reservoir and high water during most of the 1990s resulted in good walleye recruitment (stocking and natural reproduction), solid growth rates, and good body conditions of walleyes.

The walleye fishery remained good into the early 2000s. However, as the most recent drought (2000-08) wore on and water levels remained at record low levels for nearly five years, the walleye population declined substantially. At that time the population was characterized by slow growth, small size structure and poor body condition.

Favorable water levels returned beginning in 2009 and continued through 2015, resulting in a dramatic improvement in walleye abundance, condition, size structure and growth rates. Rising water levels and abundant forage set the stage for a walleye resurgence.

Excellent natural reproduction, supplemented with aggressive stocking efforts in recent years, has brought walleye abundance to the fourth highest level in the last 50 years. Several strong year-classes have been produced since 2010, and with good habitat and forage, the population should continue to flourish in coming years.

Not only has abundance improved, but the overall health of walleye has improved dramatically. Prior to the return of water in 2009, walleye body condition declined dramatically due to reduced forage brought on by low lake levels. Walleye at that time were the thinnest since smelt were introduced in 1971. Skinny walleye equate to slow-growing walleye.

Fortunately, the smelt bonanza of recent years has fattened up Sakakawea walleyes and dramatically improved growth rates. In fact, the average length of a 4-year-old walleye increased from 14.6 inches in 2007 to 19 inches by 2012.

This dramatic increase bodes well for anglers because it allows fish to reach a desirable size much faster and helps improve the overall size structure of the population.

Without the return of water, and ultimately forage, we would still have small, slow-growing, skinny walleyes that fall short of angler expectations.

Chinook Salmon

Salmon, like the reservoir, have experienced a dramatic rise and fall in recent years. Unfortunately, it is the one component of the fishery that has not yet fully recovered.

More than any other species, salmon success or failure in Sakakawea is intricately tied to water levels. High water ensures good smelt populations as we've seen. And it ensures adequate coldwater habitat.

So, why hasn't the salmon fishery flourished with a booming smelt population and high water levels? Well, in the case of Sakakawea, it's a situation of too much water in one year.

As soon as lake conditions began to improve, the Game and Fish Department started taking more eggs

and stocking more salmon (in 2010) – just in time to see many of those fish get flushed to South Dakota a year later. The extremely high water levels and record releases in 2011 brought slow salmon fishing on the lake, but the Garrison Dam Tailrace provided likely the best salmon fishing ever.

Fortunately, Department biologists tag a portion of salmon each year, which allows us to track their origin. Virtually all salmon caught from the river in 2011 were from fish originally stocked in Lake Sakakawea.

Entrainment of salmon through the dam is a yearly event, but it was much higher due to both the magnitude and duration of releases that persisted for several months in 2011. Our tagging documented the high entrainment of adult salmon and we feared that many of the young salmon stocked that summer in Sakakawea also passed through the dam. Our fears were somewhat confirmed during the 2012 spawning season when crews observed few jacks, or 1-year-old male salmon, suggesting not many remained in the lake.

In 2012, salmon fishing in Sakakawea was much better. Many anglers had their best year in decades, if not ever. The fish caught in fall 2011 and summer 2012 were both the direct result of the 2009 stocking of only 50,000 fish, minus the substantial losses of 2011. This shows that conditions more than numbers stocked have the greatest impact on the salmon fishery.

The 2013 and 2014 seasons brought generally poor salmon fishing on the lake. This was especially discouraging to anglers coming off the incredible 2012 season and anticipating the fishery would continue to flourish with abundant coldwater habitat and smelt.

Unfortunately, salmon that would have made up the bulk of the catch in 2013 and 2014 would have been stocked during the 2011 flood.

The good news is the impacts of 2011 on the salmon population should largely begin to fade in 2015. The lake has excellent coldwater habitat and smelt for forage. Additionally, high numbers of salmon stocked since 2011 should begin to recruit into the fishery in much better numbers.

Fish Need Water

Much like fishing across the entire state, we are again in the "good old days" for Lake Sakakawea.

Mother Nature has provided us with the water necessary to produce a reservoir with a large volume of quality fish habitat. Predictably, game and forage fish have responded exceptionally well.

The up and down ride of water levels on the Missouri River System will continue for years and years to come. The one constant that will remain is that fish need water and they need it at the right times. We have been blessed with both in recent years and the immediate future looks promising for both fish in Lake Sakakawea and anglers who pursue them.

DAVE FRYDA *is the Game and Fish Department's Missouri River System supervisor.*

CRAIG BIHRLE

As shown in this photograph from 2005 at White Earth Bay, drought gripped Lake Sakakawea for much of the 2000s.

BUFFALOBERRY PATCH

By Greg Freeman, Department News Editor

CRAIG BIHRLE

Record Walleye Stocking Planned

North Dakota Game and Fish Department fisheries personnel are planning to stock a record number of walleye lakes this summer.

Fisheries production and development supervisor Jerry Weigel said 130 waters are scheduled to receive a share of 9 million fingerlings.

"We needed every available pond at Garrison Dam and Valley City fish hatcheries to meet a 9 million walleye fingerling request," Weigel said.

The growth of walleye lakes, according to Weigel, is directly correlated to the rapid increase in the number of public fishing waters in the state.

"We now manage about 420 waters and 346,000 acres, excluding the Missouri River System," Weigel said. "In the last five years alone we have stocked more than 48 million walleye fingerlings in the state, in addition to salmon, trout, pike, bass and panfish."

Department personnel spent an additional three weeks of spawning efforts to meet this year's record production. In addition, the U.S. Fish and Wildlife Service's hatchery staff plays a vital role in the growth of the state's fisheries.

"There is no doubt we have had a successful operation because of the great relationship we have with both hatcheries," Weigel said.

SWAN APPLICATION DEADLINE

Swan hunting permit applications will be online and at vendors throughout the state in late July. The application deadline is August 19.

Hunters are encouraged to apply at the Game and Fish Department's website, gf.nd.gov. The website also contains application forms that can be printed and mailed. Regular license fees apply and no service charge is added.

Applications will be available at Game and Fish offices, county auditors and license vendors.

Applications are also accepted at the Department's toll-free line, 800-406-6409. A service fee is added for license applications made over the phone.

Residents and nonresidents can apply. Since swans are classified as waterfowl, nonresidents may hunt them only during the period their nonresident waterfowl license is valid.

Swan season details are not yet finalized.

Game and Fish at State Fair

The North Dakota Game and Fish Department will host thousands of visitors to its Conservation and Outdoors Skills Park July 17-25 at the State Fair in Minot.

Visitors will be treated to an array of activities, exhibits and useful information as the park will be staffed from 1-7 p.m. daily. Pathways to Hunting, Fishing and Trapping are major attractions where fishing, shooting, archery and furtaking are taught to interested kids and adults. Of course, the opportunity to catch a fish brings excitement to the littlest angler.

Don't forget to check out the live fish display, or stop by the furbearer exhibit and discuss trapping with the experts, or relax and enjoy native prairie plantings.

An added incentive – it's all free.

The Conservation and Outdoors Skills Park is located on the north end of the grounds near the State Fair Center.

CRAIG BIHRLE

2015 Watchable Wildlife Photo Contest
Game 1st Place
Elk
Brad Starry, Fargo

WATCHABLE WILDLIFE PHOTO CONTEST

The North Dakota Game and Fish Department's annual Watchable Wildlife Photo Contest is now open for entries, and the submission deadline is September 30.

The contest has categories for nongame and game species, as well as plants/insects. An overall winning photograph will be chosen, with the number of placewinners in each category determined by the number of qualified entries.

Contest entries are limited to digital files submitted on disk or via email. Contestants are limited to no more than five entries. Photos must have been taken in North Dakota.

By submitting an entry, photographers grant permission to Game and Fish to publish winning photographs in *North Dakota OUTDOORS* magazine, and on the Department's website, gf.nd.gov.

Photo disks should be sent to Watchable Wildlife Photo Contest, C/O Patrick T. Isakson, North Dakota Game and Fish Department, 100 N. Bismarck Expressway, Bismarck, ND 58501-5095.

Send emailed digital photos to photocontest@nd.gov. Photographers will need to supply the original image if needed for publication.

Photo disks will not be returned. All entries must be accompanied by the photographer's name, address, phone number and email address if available. Other information such as photo site location and month taken are also useful.

2015 Watchable Wildlife Photo Contest
Nongame Runner-up
Juvenile Cooper's hawk
Sharon Watson, Buxton

Pronghorn Applications

Interested pronghorn hunters can expect to find license applications for the 2015 season on the Game and Fish website and at license vendors in mid-July. The deadline for applying is August 5.

LARA ANDERSON

Game Warden Pilot Exam

The North Dakota Game and Fish Department has scheduled an examination to select candidates for the position of game warden pilot. The test is scheduled for July 17 at 10 a.m., at the Department's main office in Bismarck. In addition, an exam to select candidates for an additional district game warden position is scheduled at the same time.

Applicants must register to take the exam no later than July 13, by submitting an online application through the North Dakota State Job Openings website.

Game warden pilot applicants must have a commercial pilot's license for a single engine land with an instrument rating, and hold an FAA Class II medical certificate. Candidates also must have a minimum of 500 hours total flying time and have a clean record without any felony convictions. Applicants must be at least 21 years of age, have a valid driver's license and a current North Dakota peace officer license, or be eligible to be licensed.

Job duties include day and night flights, involving enforcement and administrative flight activities. Responsibilities also include enforcing game and fish laws and other related regulations.

LARA ANDERSON

Fur Harvester Program Scheduled in Bismarck

The North Dakota Cooperative Fur Harvester Education Program is sponsoring a fur harvester education class in Bismarck for anyone interested in trapping or hunting furbearers.

The course is scheduled for August 18, 20 and 22. The event is free and takes 16 hours to complete over a three-day period.

Students will learn about traps, trapping and snaring techniques, furbearer biology and fur care. A field day allows students to make a variety of land, water and snare sets.

Upon completion, graduates are issued a certification card that is recognized by any state requiring trapper education prior to purchasing a license.

Anyone interested in signing up for the class should visit the North Dakota Game and Fish Department website at gf.nd.gov, click on the Hunter Ed Enrollment link, and then click the list of hunter education courses.

For more information contact John Paulson at 701-471-2178.

GAME AND FISH PAYS $533,500 IN PROPERTY TAXES

The North Dakota Game and Fish Department recently paid more than $533,500 in taxes to counties in which the Department owns or leases land. The 2014 in-lieu-of-tax payments are the same as property taxes paid by private landowners.

The Game and Fish Department manages more than 200,000 acres for wildlife habitat and public hunting in 51 counties. The Department does not own or manage any land in Traill or Renville counties.

Following is a list of counties and the tax payments they received.

County	Tax Due	County	Tax Due	County	Tax Due
Adams	$ 168.63	Grand Forks	$16,222.00	Pierce	$ 3,028.92
Barnes	4,659.63	Grant	824.85	Ramsey	16,112.78
Benson	4,193.46	Griggs	89.58	Ransom	1,289.15
Billings	232.91	Hettinger	3,518.17	Richland	15,086.41
Bottineau	5,165.95	Kidder	7,057.00	Rolette	34,351.83
Bowman	1,717.98	LaMoure	8,480.73	Sargent	15,941.79
Burke	951.57	Logan	329.99	Sheridan	56,352.14
Burleigh	27,490.54	McHenry	1,683.24	Sioux	265.59
Cass	6,888.14	McIntosh	7,408.64	Slope	1,223.82
Cavalier	25,864.62	McKenzie	32,153.15	Stark	192.25
Dickey	12,042.49	McLean	54,315.91	Steele	8,953.66
Divide	1,546.95	Mercer	13,788.32	Stutsman	4,708.06
Dunn	6,158.70	Morton	17,557.26	Towner	1,917.26
Eddy	7,862.36	Mountrail	7,957.75	Walsh	10,667.85
Emmons	3,990.78	Nelson	5,548.76	Ward	94.80
Foster	750.23	Oliver	2,408.27	Wells	54,988.79
Golden Valley	122.99	Pembina	14,958.35	Williams	4,228.09

Staff Notes

Mike Szymanski

MIGRATORY BIRD SUPERVISOR NAMED

Waterfowl biologist Mike Szymanski accepted the migratory game bird management supervisor position following Mike Johnson's retirement, which was announced in May.

ANS AQUATIC NUISANCE SPECIES

REGULATIONS:

INSPECT
WATERCRAFT FOR ANS

REMOVE
PLANTS AND ANS

DRAIN
ALL WATER

NORTH DAKOTA GAME AND FISH DEPARTMENT

FOR A COMPLETE LIST OF REGULATIONS VISIT GF.ND.GOV

back cast

By Ron Wilson

This is just a guess, but Charles Tollerud believes the last ling he caught was sometime around 1990.

Point is, it was long enough ago that it's hard to remember exactly.

Odds are, the Bismarck angler won't forget about the ling, or burbot, he landed this spring that broke his 25-year drought.

The fish, which weighed about 6 pounds, isn't what you'd expect to come from the Missouri River where Tollerud and his son, Jack, of Boise, Idaho, were fishing.

The fish is such a brilliant yellow it makes North Dakota's native perch seem underdressed.

"I've caught a lot of fish in my life, but certainly nothing like that," Tollerud said. "It looked like a Chinese color painting."

The father and son were walleye fishing south of Bismarck, using jigs and minnows when Tollerud hooked the ling.

"I thought I had a big walleye," Tollerud said. "My son was saying, 'bring it in,' but I had light monofilament line and didn't want to put too much pressure on the fish."

Because the ling looked so unlike anything he'd ever caught, Tollerud wasn't certain it was even legal to harvest, so he released it.

Game and Fish Department fisheries biologists don't have an explanation as to why the fish is so yellow, other than it may have something to do with a recessive gene.

"It's certainly bizarre, not something I've ever seen before," said Scott Gangl, Department fisheries management section leader.

Greg Power, Department fisheries chief, said there are accounts of yellow ling in nature, but they are rare and most often not this yellow.

"We have millions of fish harvested every year and, considering how networked we are, you just don't hear about stuff like this that often," Power said. "But it happened, just a freak of nature. That fish looks like something you would see snorkeling on a reef in the Caribbean."

Power said there have been a number of instances over the years of anglers catching yellow perch from North Dakota waters that were blue.

"Around 2000 during the boom of new perch fisheries, we had a number of lakes where we were getting reports of blue perch," he said. "In the last 10 years, those reports have fallen considerably."

Power said Alkaline Lake in Kidder County was one of the waters kicking out blue perch at the time. Yet, once pike and walleye became established, the reports dwindled.

"Because yellow perch are a schooling fish, if you had blue perch mixed in a school, they would stand out to predators," he said. "You'd imagine they'd be the first ones to get picked off."

That being the case, how Tollerud's rare catch escaped predators in its earlier years is as amazing as its coloration.

***RON WILSON** is editor of North Dakota OUTDOORS.*

NORTH DAKOTA GAME AND FISH DEPARTMENT ARCHIVE PHOTO

A Look Back

By Ron Wilson

Forty-five years ago, trout were popular in North Dakota, but their window as a favorite fish among anglers was closing.

"In the 1950s it was trout, in the 1960s it was trout and pike, but by the 1970s walleye were making waves," said Greg Power, North Dakota Game and Fish Department fisheries division chief. "And when the 1980s rolled around, walleye were the most popular, but anglers were also taking interest in a mixed bag of other species like bass, yellow perch, bluegill, crappie …"

This photograph was taken in 1970 and it shows Selmer Enger, Game and Fish Department assistant district fisheries manager at the time, stocking trout in a North Dakota lake.

The trout released by Enger were just 3-4 inches long, much smaller than the 8- to 10-inch fish Department staff stock today.

"Survival of fish that small wasn't that good, certainly not compared to today's 10-inch trout," Power said.

In 1970, Department fisheries staff stocked 6,400 brown trout and 871,000 rainbow trout in about 50 waters. In 2014, a total of 120,000 brown and rainbow trout combined were stocked.

Yet, considering the size difference in the fish stocked today compared to 45 years ago, more pounds of trout were released in North Dakota last year, even though many, many more individual trout were stocked in 1970.

Interestingly, just 1.4 million walleye were stocked in state managed fisheries in 1970. While that sounds like a bunch, it's nothing compared to the nearly 10 million walleye fingerlings stocked in 2014.

The huge jump in the number of walleye stocked over time has much to do with walleye being the hands-down, fish of choice with today's anglers. Plus, there are many more walleye lakes on the landscape today than 1970.

"Also, back in the day we were always limited in the number of walleye we could raise and stock in North Dakota lakes," Power said. "That changed in the late 1980s when 40 new hatchery rearing ponds went on line at Garrison Dam National Fish Hatchery."

This summer, Game and Fish will stock 9 million walleye fingerlings into a record 130 walleye lakes. The total of walleye fingerlings stocked in the last five years alone is more than 48 million.

RON WILSON *is editor of North Dakota OUTDOORS.*