



Alec Lackmann, a doctoral candidate at NDSU, believes he has found that bigmouth buffalo can live four times longer than previously believed. Photos courtesy of A.R. Lackmann (alec.lackmann@ndus.edu)

Protecting the fish could focus harvest on invasive carp

By Javier Serna
Assistant Editor

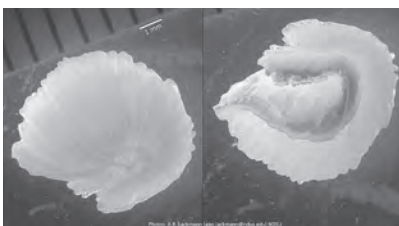
Can a bigmouth buffalo live more than 100 years? A doctoral candidate at North Dakota State University says he aged such a fish – which defies the literature on this species – during a presentation at the Minnesota Chapter of the American Fisheries Society annual meeting in St. Cloud in February. The assertion immediately drew skeptics.

Alec Lackmann, originally from Detroit Lakes, gave a presentation suggesting that despite scientific literature stating that these native fish live to 26 years old, at most, he had aged many specimens from the Red River of the North watershed (none of these fish were from the stream's main stem) much, much older and that one of them at 104 years old.

Many of these fish had been arrowed by bowfishermen and left to rot on lake banks.

"I was shocked, and I was very skeptical myself," Lackmann told those in attendance.

Doctoral student challenges book on BIGMOUTH BUFFALO



Above, two whole otoliths from a bigmouth buffalo before being thin-sectioned with a low-speed IsoMet saw.

One doubting DNR biologist prodded Lackmann during the post-presentation question-and-answer session, saying he'd sampled bigmouth otoliths on the Mississippi River that also suggested ages older than previously reported but refused to believe it could be true.

"The only reason people are skeptical (of the age) is because (these fish) are simply that old," said Lackmann, during one of several phone interviews.

The main point of his early, unpublished research suggested there might be recruitment failure – meaning that for many years fish had failed to spawn successfully – in this system since he found only young and old fish, with a large gap in between.



Bigmouth Buffalo (*Ictiobus cyprinellus*)



Top, an older bigmouth buffalo with cataracts, collected from the Red River of the North basin. Lower, a slide from Lackmann's presentation, with dots marking the annuli from a thin-sectioned otolith.

"I was astonished myself," he said of discovering such high counts of annuli, which are like tree rings, on the otoliths of these fish. Otoliths are calcium carbonate structures located behind the brains of bony fishes, and counting the rings on them is generally accepted as the standard for aging fish, he said.

As response from the fish-biologist community has come back, including from supportive scientists, Lackmann has come around to the idea that he must have his work validated via other methods. He's hoping to use radiocarbon testing, a type of

testing that measures carbon 14, which spiked in the atmosphere in the '50s and '60s when nuclear weapons began to be tested.

He's reached out to a number of experts on aging fish, including Dr. Peter Sorensen, of the University of Minnesota.

"I am skeptical, too," said Sorensen, reached by phone. "But not because of the data, necessarily, though when you make a claim like that, in the world of science, the bar is pretty high. That is where I am coming from."

Sorensen noted that Lackmann's work has yet to be published (in a scientific journal), which means it hasn't gone through the peer-review process.

"So it has to be considered tentative," said Sorensen, who is experienced in aging otoliths, and said that it can be difficult to do so. "I was encouraging him to be cautious."

Another way to verify age, Sorensen said, is the mark-recapture method, where fish are captured, marked with an antibiotic, then recaptured and sacrificed to science, which gives the process of aging thin-sectioned otoliths more certainty (such work is being done by DNR biologists on the Mississippi River, where the fishery is hit hard by commercial enterprises).

As has been said by others, Sorensen believes there are a number of things that could have added false annuli lines, such as spawning and cold weather.

He said he admires Lackmann's work, and hopes validation proves him correct. Sorensen added that it wouldn't completely surprise him if they are that old (he has aged common carp at 65 years old). He agreed with Lackmann's notion that the species is under-studied.

Lackmann said thin-sectioning otoliths is considered "the gold standard" for aging fish and noted that several papers have been published without

(See Bigmouth Buffalo Page 35)

ALASKA FISHING ON THE KENAI PENINSULA

LIMITED TIME OFFER!

SALMON & HALIBUT SPECIAL!

- 2 Guided Salmon Charters
- 2 Guided Halibut Charters
- 1 Fly-Out Fishing Trip - Sockeye & Silver Salmon / Plus Bear Viewing

6 Nights Lodging
May, June, Aug. & Sept. **Only \$1,877**

- 1,000 FT. OF PRIVATE RIVERBANK -

VISIT OUR WEBSITE FOR MORE INFO
rwfishing.com
EMAIL **rwfishing@hotmail.com**
CALL FOR FREE BROCHURE:
1-800-478-6900

All packages include: Half day charter, two bedroom condo, lodging, all fishing gear while guided (rods, reels, bait). Experienced fishing guide with boat. Plus free up to 100 lb. of your fish vacuum packed. All prices are quoted per person double occupancy.

LAKE SUPERIOR FISHING.com

Port of Duluth, MN (855)700-0013

with us... "You set the hook!"

Fishing

- King Salmon
- Coho Salmon
- Lake Trout
- Steelhead
- Trophy Walleye
- Trophy Musky

Trips

- Half Day
- Full Day
- Groups (1-30)
- Fish/Stay Packages

Lake Superior's #1 sport fishing leader for over 30 years and only multiple boat operation.

"More Boats, More Trips, More Fish!"

See us at the Northwest Sports Show in Minneapolis! Booth #844

All Equipment Furnished, Fish Cleaned, Bagged and Iced

"If you don't fish with the leader the scenery never changes!"

SAVE 20% TO 30% OFF REGULAR RATES!!!

The Suites Hotel offers dock side lodging in Canal Park next to 12 restaurants and many attractions, free parking, free breakfast buffet, free high speed internet, indoor pool, hot tub, sauna, with all suites equipped with kitchens or kitchenettes.

Call direct and ask for the charter fishing discount.

www.thesuitesduluth.com • (800)794-1716

(Some blackout dates and restrictions apply call for details.)

lakesuperiorfishing.com • info@lakesuperiorfishing.com

Berkley sponsors

Tackle Terry

By Terry Tuma

QUESTION: What are reverse jigs and when should I employ them for winter walleyes?

TERRY: A reverse jig is a method of minnow placement on 1/32- or 1/16-ounce plain ball head jigs (no dressing) for reluctant walleyes. Just nick the minnow's skin parallel to the dorsal fin with the jig hook pointing toward the head. This anchors bait and restricts movement, which will not intimidate wary fish. It's an effective tactic that few anglers use. Another procedure is to hook two fatheads through the lips on a plain jig. Sharp and wide-gap hooks are necessary for both techniques.

Look for these fine products from Berkley at your local retailer.

BIGMOUTH BUFFALO

(From Page 18)

further validation.

Bigmouth buffalo are a species native to Minnesota, and are of ecological importance. Most fish biologists would agree that they've been unfortunately lumped together with invasive common carp (which wrought ecological destruction in the United States after being introduced).

Because bigmouth buffalo are not sportfish, pursued by sport anglers, they have been labeled as a "rough" fish, along with other native species such as gar and bowfin, and invasives such as a common carp. There are few regulations on them, which is where much of Lackmann's concern is, as bowfishing has gained in popularity in recent years.

Bigmouth buffalo move slower and are easier marks for bowfishers than are common carp.

"In many cases, (bowfishers) are disproportionately targeting them over carp," Lackmann said. "Even though we don't have absolute definitive evidence, it is so time-sensitive."

The Minnesota DNR is looking to add some bigmouth buffalo regulations on the Mississippi River, where the species is sought by both commercial fishers and bowfishers. There, DNR biologists are using the mark-recapture method to age the fish, and are also concerned about overfishing.

Because bowfishing isn't regulated, there's no way of knowing how much pressure bowfishing might be adding to the fishery, Lackmann said, noting legislative changes in 2011 that made night bowfishing legal, and another in 2013 that extended the bowfishing season. Lackmann believes those changes have increased the amount of pressure on bigmouth buffalo.

Lackmann is worried that much could be lost as a result of the extra pressure, as the season extension has allowed the fish to be targeted while the fish are spawning. These older fish could be lost.

"There were a lot of unknowns about this fish," said Dr. Mark Clark, North Dakota State University associate professor who is not Lackmann's doctoral advisor but has worked with him aging these buffalo.

Lackmann, long interested in the species, jumped

at the opportunity to work on them with Clark, who collected samples of fish from a rotenone project on a Minnesota lake that turned up some large bigmouth buffalo. Clark tried aging the scales of the fish, but didn't see credible annuli references, which often is the case with fish scales.

Still, there was a belief that some of the fish were older than the scientific literature would allow, and Lackmann, who had already been studying the fish recreationally, joined with Clark to age bigmouth buffalo.

"We discussed a number of methods for determining age," Clark said, noting that at the time, the university didn't have a saw that could cut the otoliths with the precision needed. "We got one since then."

Lackmann made use of the school's specialized tools for cutting the otoliths, and began aging them, stunned to see the results. Of 80 total fish, 70 were greater than 75 years old. Many had individual colorful marks, scars, and cataracts (suggesting older age).

The species isn't susceptible to hook and line.

"There are a lot of reasons why this fish has slipped beyond the radar," Clark said.

He believes the species may be able to survive longer

farther north.

"When we saw some of these fish coming up with really old ages, the first thing you do, the first thing you start thinking is, 'Am I counting this correctly?' You look at what else is out there for this species," Clark said. "We have scrutinized this pretty carefully. We think we have accurate counts of annuli. Nobody has really looked at (buffalo fish) from these latitudes. We went to some similar species. The morphology of common carp is very similar."

Clark said it's possible the counts are off, "But I don't think it's something where we're calling a 30-year-old fish an 80-year-old fish."

Lackmann said he has thought about that possibility.

"I am trying to gain expertise in every way I can," he said. "If half of these opaque lines are false annuli, that would still be twice as old as previously reported. The literature says it would be an extremely rare case to have such an abundance of false annuli. In the previously reported 26-year-old fish, those thin-sectioned otoliths weren't validated, either."

He's hoping for new state regulations.

"If the public perception changes, (bowfishers) could target common carp as never before and let the buffalo roam," he said. "I see value in that sport (of bowfishing). They could help the ecosystem."

Turkey Calls

(From Page 28)

taken it to new heights by slight changes in geometry and the introduction of these exotics. If this was not the case, in the friction call competitions folks would still be running original Cost-style callers. This same discussion can apply to the Turpin-style boxes."

Watkins introduced a different concept in his box call design: a curved side.

"To my knowledge no one had ever used a curve side. You now see this concept being used by commercial manufacturers. It may not be curved but it's wide at top narrow in center and wide at bottom," he said.

Box calls today do more than just produce solid yelps of a hen. Many are capable of offering up seductive clucks and purrs, or even the kee-kee of a lost hen, which is an overlooked call option in the spring.

Other calls

Calandrelli says turkey hunters, whether beginning or experienced, shouldn't overlook the simple push-pull call, known for its ease of operation.

"The push-pull calls are one of my all time favorites," he said. "It's hard to make a bad sound, you use minimal movement and they are pure killing machines as far as I am concerned. Push-pulls have come miles from where they used to be, but they were always good, solid turkey-killing calls for hunters who did not have a lot of time to practice - and also for those who had plenty of time to practice."

Today's turkey hunters simply have no legitimate excuse for not sounding like a turkey when they're working a gobbler, no matter which call they pull from their vests.

Classifieds

CHARTER FISHING

KINNS' SPORT FISHING
Lake Michigan's Largest Sport fishing Fleet
Winthrop Harbor, IL. **LIMITS GUARANTEED.**
Algoma, WI - **HUGE CHINOOK & STEELHEAD.**
44 yrs. experience. 11 Large Boats 32'-38'
1-800-446-8605 or www.kinnskatch.com

p-1905

GAME HUNTING

SE MN turkey hunting area 501. Rent a cabin and turkey hunt 250 plus acres free. Also summer special. Rent 2 nites get 3rd free. MoneyCreekRetreat.com call for details 507-459-7574.

p-10

Hunt New Mexico Fully guided Elk hunts Archery Rifle Muzzle loader. Contact Ron Schalla 575-756-1409

p-11

HUNTING LAND

Duck hunting property reliable history lease. Available Ottertail County, dry land, point. Divers Mallards, geese. 218-405-0263 lv msg.

p-12

40 upland acres in Aitkin County. Borders 1,000's of acres of public land with access on blacktop road. Approx 31 acres quality hay ground and 9 acres of woods with a pond. Quality deer and turkey hunting 6.5 miles west of Palisade. Map is available. \$160,000. tom.andrew.1966@gmail.com 218-232-4079.

p-12

Sell your unused gear in the Outdoor News Classifieds!



Lake of the Woods, Rainy River. For Sale: 5000 ft shoreline, 100 acres in front of Sable Island. Call TETND Trust at (218) 553-0723

p-9

HELP WANTED

Drivers, Class-A CDL. Increased pay & new trucks!! Dedicated routes! No CDL? No problem! Call Swift Today! 855-292-2945.

p-09

CDL-A drivers. Now's the time to haul tanker! Mult. shifts avail. Big \$\$ to be had & home daily. Beautiful equip. Full benefits. E-logs for max miles. Tanker end. req. Willing to get Hazmat. Call today for more info! 651-894-6874

p-10

Drivers. \$3,000. Sign on bonus! CDL-A or B to delivery locally in St Paul! Excellent pay & benefits Call 855-976-6836.

p-09

Class A Driver Wanted Wausau Supply Company - Lakeville Home Every Night/No Weekends Starting Wage \$21/hour and Employee Owned Email: humanresources@wausausupply.com or call: 855-395-4532, x 12322 Class A Driver Wanted

p-10

\$4.00 PER LINE 3 LINE MINIMUM

45 characters per line maximum, including punctuation and spaces. All ads must be submitted in writing, accompanied by full payment. Deadline is noon Friday for each issue.

Same ad run consecutively - repeated.

Frequency Discount:
6 Times - 5%
13 Times - 15%
52 Times - 20%

Send ad with payment to:

OUTDOOR NEWS, INC.
9850 51st Ave., N., Suite 130
Plymouth, MN 55442-3271
1-877-494-4246

ADD A PHOTO TO YOUR AD FOR \$15. DETAILS BELOW. ONLY ADS PLACED ONLINE WILL APPEAR ONLINE.

FOOD PLOTS

Trophy Buck Food Plots. Specializing in building and maintaining food plots and trail systems on your property. www.TrophyBuckFoodPlots.com or contact Jim at 218-244-3365.

p-1901

DOG TRAINING

ON-LINE RETRIEVERS. Gundog, obedience training & boarding. Where the standard of excellence provides you and your pet with the best possible care and training. Call David & Michelle at 320-272-4746. Like us on Facebook.

p-1905

DOGS

AKC pointing labrador pups. 3 chocolate, 4 yellow all males, dew claws remove, puppy shots done. \$800 each. Ready 3-20-18 Call Pat 651-470-4179.

p-11

AKC fox red yellow lab puppies, DOB 1/9/2018 Dame MH-QAA, sire, titled bloodlines, Running with the Devil/Snapper, bred to hunt, free of hereditary issues, www.romeokennels.com 218-349-8334 rmowens@aol.com

p-17

4XGMPR X 4XGMPR yellow & black puppies. Sire is 65 lbs. HRCH & MH also qualified for Nationals. Dam is a 68 lb female out of Risky Raider lines. Yellows & blacks, females & males available. Very talented!!! Call 507-829-6650.

p-09

AKC English Springer Spaniels - Tri Color Roan - \$700 Ready to go February 24th. Males and Females available. Parents are on site, great hunters both waterfowl and pheasants. Photos available upon contact. 651-592-3953 or 763-350-3674

p-10

FOR SALE

For sale. Park model home on seasonal site. West side Portage bay on Leach Lake. Home is furnished with three season porch, includes storage shed, and 4,000 lb boat lift. 218-244-5403.

p-16

SERVICES

Unique firearms valuation program for estates, insurance, etc. Prestige Valuations. sportingheritagegroup@comcast.net or 612-716-8331. How can we help?

p-24



Gammarus Lacustris, freshwater shrimp, scuds. The oldest supplier in the nation and the only supplier in MN. Barry Thoele 218-296-0446.

p-14



14ft Lund hunting and fishing boat with 15hp Johnson for sale asking \$3000 or best offer. Call 507-327-8580 ask for Kevin.

p-17

Outboards wanted! Dead or alive! Buy, sell, trade. Mike 763-227-4921.

p-11

Place your ad today! Please use the form below or place your ad online at www.outdoornews.com

To place a classified with a PHOTO and have your ad appear online for FREE* go to www.outdoornews.com/minnesota/classifieds

Fill in the form, printing one character in each box, using spaces and any punctuation between words. PLEASE PRINT
Three line minimum** \$12.00
Each additional line \$4.00
Cost of ad is per insertion. Per week

Options: (additional charge)
Photo: \$15 per ad*** Bold: \$.50 per word
CAPS: \$.50 per word Bold Entire Ad: \$7.50
All CAPS: \$7.50 Center entire ad: \$3.00
Ads are priced by this form. Typesetting may make ad shorter or longer than the form shows. All classified advertising must be prepaid. Ads cannot be taken over the phone. Regular deadline is noon Friday prior to each week, Special Editions is noon Wednesday prior to each week (see website). Fax with credit card number or send this form and payment to:

Outdoor News
Attn: Classified Ad Department
9850 51st Ave. N., Suite 130
Plymouth, MN 55442-3271
Fax: 763-546-5913

Name on Credit Card _____
Address _____
City _____ State _____ Zip _____
Category _____ Phone _____

Run this ad _____ times starting _____ / _____
CC # _____
 MC Visa Discover Exp. Date _____
Amount Enclosed \$ _____

* Ads will only appear online when placed at outdoornews.com/minnesota/classifieds

**45 Characters per line, includes spaces & punctuation.

***Ads with Photos/Logo will only be accepted online at outdoornews.com/minnesota/classifieds