Montana Outdoors May/June 2019 Full Issue

INSIDE: FISHING TIPS FROM MASTER GUIDES

Montana Outdoors

MONTANA FISH, WILDLIFE & PARKS | $3.50

MAY–JUNE 2019

SURVIVOR

After 70,000,000 years, paddlefish are still swimming strong

IN THIS ISSUE:

VENISON CURRY
THE UPPER CLARK FORK REBORN
A MOSQUITO'S WORST NIGHTMARE
WORKING THE NIGHT SHIFT AT FRESNO

THEY SWAM BENEATH DINOSAURS

For 70 million years, paddlefish have lived in what is today Montana. Here's how FWP is helping this amazing species thrive in the most challenging era of its existence.

By Allen Morris Jones

The first time I went paddlefishing, I must have been in my late teens, just finishing high school. It was me, my dad, my older brother, and probably a family friend who showed us the ropes. Paddlefishing isn't a sport you just jump into. You need a guide, somebody who knows the game. Because it's not exactly "fishing." In fact, it's about as far from the classic Montana fly-fishing—minuscule flies, featherweight rods, delicate casts—as you can imagine.

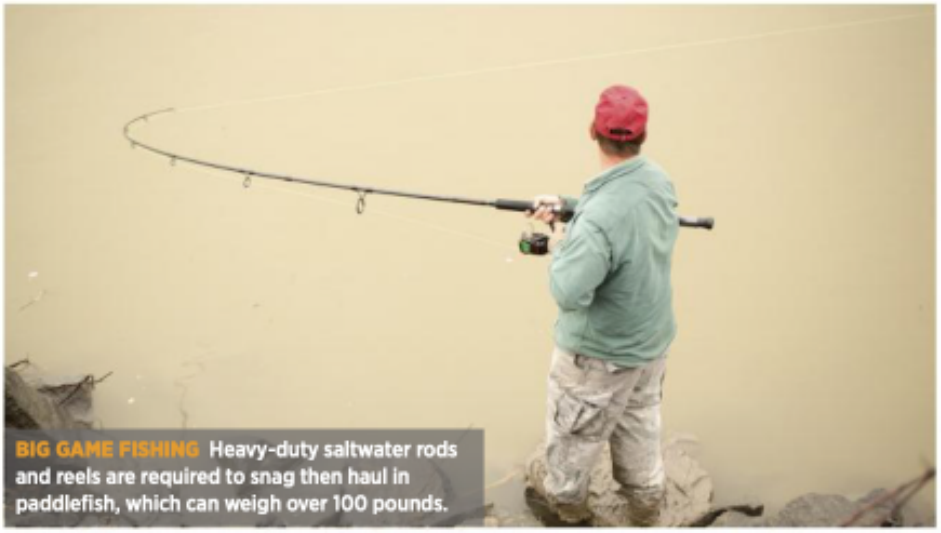
When you go paddlefishing, your job is to catch a paddlefish. There's something downright utilitarian about it. It's a sport of muddy banks and high brown water. Surf-casting rods and reels, stout fishing line, five ounces of lead sinker, and a sharp, heavy-gauge treble hook the size of a hawk's talon. Lawn chairs. A friend to spell you, because it's not a bad idea to work in shifts. You heave that thing out. Jerk it back. Quickly reel in the slack. Jerk. Reel in the slack. Get hung up on a submerged log. Cuss. Repeat. Hour after hour after hour.

Finally, you get hung up for the umpteenth time, but now the snag starts to move, taking out line. The first few seconds, you think maybe it's your imagination. But then, no.

By the time you finally bring your first paddlefish into the shallows at your feet, you're sunburnt, sweaty, smeared with mud. And then, to see the fish, to see this amazing creature roll up out of the chocolate milky river—beady-eyed, toothless, with a cavernous mouth and a spoonbilled snout like a canoe paddle—is to experience a near existential disconnect. Here's this familiar river, the Yellowstone or the Missouri. Here's this creature, alien to look at yet living in this part of the continent for more than 70 million years. And here's the two of you, eye to eye.

Across those millions of years, the paddlefish has faced countless threats: asteroids, volcanoes, an ice sheet pushing the Missouri River south to flow into the Mississippi rather than Hudson Bay. One ecosystem opening up, another closing down.

But of all the threats throughout the species' long existence, the current calamity of humanity is its greatest. There are two paddlefish species worldwide: the American paddlefish in the Mississippi River drainage and the Chinese paddlefish in the Yangtze River. The Chinese spoonbill hasn't been seen



LEFT TO RIGHT: ERIC ENGBRETSON; JEROME HOLLMAN

BIG GAME FISHING Heavy-duty saltwater rods and reels are required to snag then haul in paddlefish, which can weigh over 100 pounds.

for more than 15 years. It's likely extinct. That leaves the American paddlefish, a Darwinian cage brawler capable, so far, of surviving even the damming of its habitat and the accompanying disruption of upstream spawning.

Here in the United States, thankfully, the species is exceptionally well managed. And it's managed with a devotion, passion, and cooperation—by vested parties that include the states, the federal government, tribes, anglers, and local communities—that's close to astonishing. Not only is the species surviving, in places it seems to be thriving, including parts of Montana. For a generation and more, disparate interests have come together in the interests of paddlefish. At the intersection of sport and management, this prehistoric species is a poster child for how conservation can actually succeed.

TWO POPULATIONS

Like baleen whales, paddlefish are filter feeders that live on microscopic zooplankton. With their massive mouths wide open, they cruise through reservoirs and river backwaters sucking in water through gill rakers that comb it for protein. They won't take a lure because they don't eat anything that vaguely resembles what a lure might represent. To catch one, you need to snag it.

The gill rakers look like pale, fibrous, flexible combs. The fish's massive schnoz, called a rostrum, is visibly speckled with sensors that detect the electrical signals of swarming zooplankton. The meat, if you're lucky enough to haul in a paddlefish and can keep it, is delicious: white and firm, a bit like

FREEZER BOUND An angler heads home after harvesting a paddlefish on the Missouri River upstream from Fort Peck Reservoir.

oily halibut. Paddlefish also produce tiny, delectable eggs—caviar that, given the worldwide decline of sturgeon, is in increasing demand. A single female can carry half a million eggs.

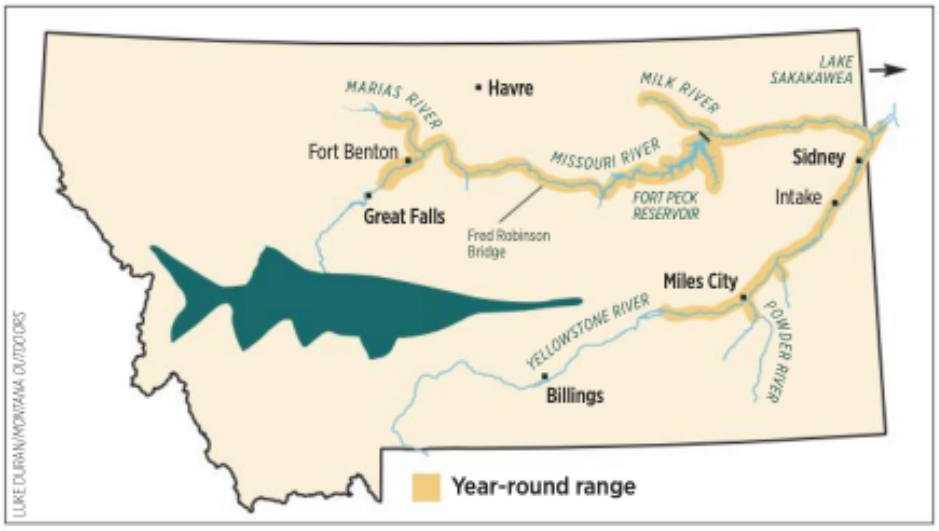
Paddlefish swim in large rivers and reservoirs in 22 states throughout the Mississippi River Basin. Two populations live in Montana and northwestern North Dakota. The Fort Peck Reservoir population lives in the large impoundment and spawns on gravel bars upstream as far as Morony Dam near Great Falls, the historic westernmost reach of the species' North American range. The Yellowstone-Sakakawea population swims in Sakakawea Reservoir in western North Dakota and makes a spawning run each spring up the Missouri (to Fort Peck Dam), Milk, Powder, and lower Yellowstone Rivers.

Montana's paddlefishing regulations are complicated, taking up three full pages in the fishing regulations booklet. "It's complex because we're trying to provide as much recreational opportunity as possible while still conserving the population," says Steve Dalbey, FWP regional fisheries manager in Glasgow. To fish the waters above Fort Peck, anglers must apply by March 29 for an annual lottery that issues 1,000 permits, known as White Tags. "These harvest tags translate into an actual harvest of 300 to 500 paddlefish, which is a sustainable number for this population," Dalbey says.

On the Yellowstone and Missouri downstream from Fort Peck, unlimited licenses known as Yellow Tags are available over the counter. Most of the harvest in this fishery is at Intake, where a 5-foot-tall, 700-foot-wide structure diverts water into a system of irrigation canals. The diversion dam also blocks upstream paddlefish movement in all but the highest flows. When the estimated harvest for this population approaches the cap of 1,000 fish, FWP closes the harvest season but allows several additional days of catch-and-release fishing.

EASY CAMARADERIE

It's the third week of May 2018, and Mike Backes has set up a station on a picnic table 50 yards from the Yellowstone River at Intake. The river is flowing hard, at around 50,000 cubic feet per second, and below the dam more than two dozen paddlefishers stand knee-deep in the water. I see a lot of wet denim and coolers, and there's an easy



LUKE DURAN/MONTANA OUTDOORS

WHAT IS THAT? Children examine a paddlefish caught at Intake. With its scaleless skin, massive mouth, and paddle-shaped nose, the prehistoric species looks unlike most fish.

TOP TO BOTTOM: CRAIG & LIZ LARDON; ALLEN MORRIS JONES

Montana Outdoors May/June 2019 Full Issue

PADDLEFISHING AT INTAKE Clockwise from top left: Yellow possession tags are issued for the paddlefish stock downstream from Fort Peck Reservoir and the Yellowstone River; paddlefishers cast from the banks of the Yellowstone at Intake; an FWP technician scans for an embedded tracking chip before placing a harvested paddlefish on a conveyor belt at the Intake cleaning station; a portion of the lower jaw is reserved for research; paddlefish fillets harvested from a catch; a lunker paddlefish hangs on a scale; FWP regional fisheries manager Mike Backes records harvest data.

CLOCKWISE FROM TOP LEFT: JEREMIAH HOLLMAN; ALLEN MORRIS JONES; ALLEN MORRIS JONES; ALLEN MORRIS JONES; ALLEN MORRIS JONES; ZACHARY R. SHATTUCK

camaraderie among the paddlefishers. Every now and then, as a paddlefish is snagged, other anglers reel in and step back, watching as the fish takes its captor for a walk down the bank.

Backes, the FWP regional fisheries manager in Miles City, keeps an ongoing harvest tally on a whiteboard. So far, 29 fish have been caught today, making it 166 for the season. The largest to date weighed 99 pounds. Males run about 20 to 30 pounds, Backes says, and females go from 40 pounds to over 100. The state record, caught in 1973, was 142.5 pounds.

As each paddlefish is caught, the harvester carries it to the station where Backes and an assistant, Tanner Carlson, weigh it, take measurements, and run a metal detector around the rostrum looking for an implanted tracking chip. They also remove a section of the lower jaw. Then they pass the fish along to a cleaning station maintained by the Glendive Chamber of Commerce.

The paddlefish caught at Intake spend most of their lives in North Dakota's Lake Sakakawea. Backes says they start heading upstream to spawn in April or early May. "They get to the confluence of the Yellowstone and the Missouri and wait for one of the rivers to pulse with bigger flows," he says. "That triggers upstream movement. They are attracted to increasing flows and turbidity, conditions that likely reduce predation on eggs and larval fish."

In 2007, FWP instituted alternating harvest and catch-and-release days for the Yellow Tag licenses. This provides additional recreation for anglers who want to tussle with a paddlefish but not take it home. It also extends the season by breaking up the harvest momentum. That gives managers a little breathing room to figure out the appropriate time to close the season. Close it too soon, and they deny paddlefishers harvest opportunities. Close it too late, and the adult population could be overharvested. Catch-and-release at Intake also helps FWP biologists gather important biological information (see "Paddlefish releasers provide essential data," page 14).

Since 1990, the Glendive Chamber of

Allen Morris Jones is a novelist, editor, and publisher in Bozeman.

BACK YOU GO An angler releases a healthy paddlefish into the Missouri River to swim another day.

Commerce has hired processors to clean the paddlefish caught at Intake (and brought there from nearby areas) in exchange for the fish eggs. The roe is later sprinkled with sea salt, canned, and sold as caviar. Roughly 30 percent of the caviar sale proceeds help pay for FWP paddlefish research and management. The chamber puts the rest into a grant program that funds projects like playground equipment, museum exhibits, and other cultural and recreational amenities across eastern Montana.

Also helping out at Intake today is Dennis Scarnecchia, a fisheries professor at the University of Idaho in Moscow. As Scarnecchia helps haul fish from the FWP scale to the chamber's cleaning station, he keeps an eye on Carlson's work, offering helpful suggestions to the fisheries technician. It's expert advice. Scarnecchia has studied this fishery for nearly three decades. Much of what is known about the two paddlefish populations comes from his widely respected research. The jaw samples will eventually end up under microscopes in Scarnecchia's lab, where he and his staff count growth rings, like those on trees, to age the fish.

HARDER TO LOCATE

Montana's other major paddlefish fishery is on the Missouri River west of Fort Peck Reservoir, around the Fred Robinson Bridge in the Upper Missouri Breaks National Monument and Charles M. Russell National Wildlife Refuge. Each year roughly 5,000 to 10,000 paddlefish swim upstream from the reservoir to spawn, roughly half the number that spawn in the Yellowstone.

There's no diversion dam here to block upstream movement, so paddlefish are more spread out than at Intake and harder to locate. Some paddlefishers use boats to travel along the river, setting up bankside campsites at places where the fish might lurk. There's also no caviar program on the Missouri, so anglers need to dress and fillet their own catch. If they don't draw one of the 1,000 permits to harvest a paddlefish in this stretch, they can still practice catch-and-release throughout the season, which here runs May 1 through June 15.

Cody Nagel, FWP fisheries biologist at Havre, says he and colleagues learned where these paddlefish swim throughout the year from an early 2000s telemetry study that followed the movement of roughly 120 fish over seven years. "We saw how they respond to low and high flows, which helps us understand the conditions for ideal spawning," he says. To gather more information, each spring FWP crews in boats drift long nets downriver to entangle

CLOCKWISE FROM BOTTOM LEFT: CALEB BOLLMAN; BRANDON KESLING; ZACHARY R. SHATTUCK; ERIC ERICKERSON

Paddlefish releasers at Intake Dam provide FWP with essential data

Some call it "snag-and-release." The basic idea is to haul in a paddlefish and then let it go to swim another day, just as anglers do with many other game fish species. "Some people aren't into the meat and the harvest," says Caleb Bollman, FWP fisheries biologist in Miles City. "They just like feeling the power of a paddlefish on the line and seeing the fish up close."

After taking measurements, FWP biologist Zach Shattuck releases an angler-snagged paddlefish back into the Yellowstone River.

In addition to providing additional recreation, catch-and-release paddlefishing at Intake also provides FWP with vast amounts of scientific information. When an angler hauls in a fish on a designated catch-and-release day, an FWP creel clerk wades in and helps land and unhook it. The clerk measures the fish, determines its sex, then checks for a jaw tag and records the number. If there's no tag, the clerk inserts one. After a quick photograph or two with the paddlefisher, the fish is carefully released back into the water.

Such information gathering can't be done upstream from Fort Peck because paddlefishers there are widely spread out along many miles of river. At Intake, the activity is focused at a single location.

Bollman says that anglers in North Dakota and Montana, combined, harvest 2,000 adult paddlefish each spring from the Yellowstone-Sakakawea fishery. Most of the fish are weighed and aged, and all numbered jaw tags are reported to provide other information. "Then with the additional catch-and-release fish, we handle another up to 4,000 fish annually. That at least doubles or even triples the sample size," he says.

a Outdoors May/June 2019 Full Issue

paddlefish moving upstream. The fish are quickly brought onboard, weighed, jaw tagged, and released. Paddlefishers are required to report the tag number when they harvest a fish, and catch-and-release anglers are encouraged to do the same.

also cruise established routes, called transects, in late summer in the upper reaches of Fort Peck Reservoir. Young paddlefish that hatched earlier in the summer stay near the surface. When the boat approaches the fingerlings, they surface briefly and can be counted. The information helps scientists determine the strength of each "year class" and better understand how spring factors, such as river flow and temperature, contribute to stronger or weaker generations of paddlefish.

"We know that the best spawning success comes from years with high flows for a long duration, peaking in the first couple of weeks in June," Nagel says. "We've also learned that young-of-the-year paddlefish, as they move back down into Fort Peck in midsummer, need rising water levels in the reservoir that produce more zooplankton." Inadequate food supplies prevent them from growing fast enough and limit their ability to build fat reserves needed to survive the cold months. "If they can get through that first winter, most end up living for a long time," Nagel says.

FOOD FINDER The species' namesake rostrum is covered in sensors that help it locate microscopic zooplankton.

Data compiled on the two paddlefish populations is used to develop a management plan every 10 years. Produced jointly by Montana, North Dakota, and Scarnecchia, the 2018 plan provides direction and a course of action for paddlefish managers over the next decade. Key to the plan, Backes says, is "making sure we're managing the populations sustainably." That means ensuring appropriate harvest, identifying critical habitats—and threats to those habitats—and continually monitoring the fish populations. "Without high-quality data, we can't assess fish stocks and manage for the long term," he says.

An affinity for one type of fishing over another is a matter of taste. We like what we like and then create rationalizations to support that choice. For every dry-fly purist going on at length about the superiority of his approach, there's a pragmatic nympher who laments how her sport has been taken over by snobs. And for every walleye troller shopping for the latest GPS fish finder, there's a paddlefisher content to just have a chance to wade a big river in late spring, fling out a heavily weighted treble hook, and start yanking.

"Paddlefishing is getting that first sunburn of the season and taking your first camping trip with family and friends," says Dalbey, the Glasgow-based fisheries manager. "But what sets it apart from all other types of angling is that you're fishing for a species that was swimming here when dinosaurs were walking around. That's an incredible opportunity. We're doing everything we can to make sure it continues far into the future."

To read the latest management report, search online for "Management Plan for North Dakota and Montana Paddlefish Stocks and Fisheries."

Straining water for zooplankton

In addition, Bollman says, having the clerk nearby ensures that paddlefish are handled correctly for the best odds of survival. "Many of these fish are caught and released several times over their lifetime," he says. "That gives us great information we can't get from harvested fish. Over a period of several decades, we'll end up with capture histories that will allow for some pretty powerful statistical analysis and population modeling." ■

—Ed.

10 Tips to Ensure Safe Paddlefish Release

By using proper landing and release techniques, paddlefishers can help ensure that more of these remarkable fish remain in rivers where they have lived for eons.

1. **Use heavy line to prevent break-offs.**
2. **Consider using a treble hook smaller than the 8/0 legal maximum size, and flatten barbs to make removal easier.**
3. **Land fish quickly; do not play to exhaustion.**
4. **Look downstream and plan where to land fish, avoiding steep banks, strong current, boulders, trees or willows, or snags that make landing a fish difficult.**
5. **Don't use a gaff to land a fish intended for release.**
6. **Always keep paddlefish in the water, as required by law (see the FWP fishing regulations for details).**
7. **Minimize handling time of fish, including time spent taking pictures.**
8. **Keep the fish in a horizontal position.**
9. **Do not lift the fish by the gill arch (flap). Control the fish by holding the rostrum (snout) or tail.**
10. **When releasing the fish, hold it by the rostrum, facing into the current, until it can swim away on its own.**

Note: Be sure to read the FWP fishing regulations to ensure that catch-and-release paddlefishing is allowed at your fishing destination. Some areas are closed to catch-and-release.