

# Paddlefish Conservation

ODWC appreciates your help in managing paddlefish for today and tomorrow. Here are some ways you can help...

## Get a paddlefish permit – You must have a permit to fish for paddlefish!

The paddlefish permit is a vital part of ODWC's paddlefish management. ODWC uses the contact information on the permit in surveys and studies to determine angler motivations and angler satisfaction. When ODWC knows the interests and needs of anglers like you, it can try to meet them in current and future fishery regulations.

Any paddlefish legally caught and kept by an angler must be immediately tagged with the angler's paddlefish permit number and the date/time of harvest must be recorded in the Record of Game area on the angler's paddlefish permit. There are many ways in which this can be done, but the PRC recommends the use of grey duct tape and a permanent marker. Wrap duct tape around the bill several times and write the entire paddlefish permit number on the tape legibly with the permanent marker. If one group has multiple fish, it also helps to have the angler's name written legibly on the tag.



*Paddlefish must be legally tagged in order for the PRC to accept them. The angler's paddlefish permit number is required to be affixed to the paddlefish upon harvest, the name is optional but helpful in quickly identifying the owner of a fish.*

## Please know the regulations.

The regulations, including area closures (Spring River) and the annual bag limit are designed to make paddlefishing more sustainable and pleasant for all. Regulations in Oklahoma are simpler and more liberal than in most states but you still need to know them. ODWC personnel will also be happy to help if asked! Know the regulations before you fish. Don't let an accidental violation, citation and a fine spoil a great fishing trip!

## Please consider bringing your paddlefish to the PRC to be cleaned.

Fish voluntarily brought to the PRC by participating anglers like you have been the most valuable source of data for sustainably managing Oklahoma's Grand Lake paddlefish. Since the PRC opened in 2008, more than 20,000 fish have been cleaned, filleted, and packaged for successful anglers. Each fish has also been weighed, measured, its sex determined, its age determined from annual rings on its jawbone, and its condition assessed from the amount of fat it carries. This information has allowed ODWC to effectively monitor the fish population.

Please help to guarantee the future of Oklahoma paddlefishing by either bringing your catch directly to the PRC or checking your fish in with ODWC boat shuttles on Grand Lake and the Neosho River. The shuttles will deliver the fish to the PRC for you and you can pick them up later and also get information on their weight. The PRC is also a great place to meet other anglers, get your catch weighed, and get helpful fishing information from ODWC staff while your fish is being cleaned. Even if you want to clean your own fish, we will be happy to weigh and measure your fish at the PRC and provide you with information on it.

Remember that for health code reasons, paddlefish you keep must be alive for them to be cleaned at the PRC. To ensure this, anglers should handle the fish with care to reduce stress or injury to the fish. Anglers who hang their fish over the side of the boat should do so with care (as pictured below) to ensure the fish faces the opposite direction of boat travel (at no-wake speeds only). For ideal care of your fish, please call us for a pick up at (918) 542-9422 or get the attention of our ODWC boat shuttle operators to check in your fish without leaving the river.



## Please leave that jaw band/tag on!

If you catch a jaw-banded paddlefish and decide to release it, please leave the band on the fish. If you decide to harvest the fish, please leave the band on the fish until after you bring it or have it brought to the PRC. ODWC will record the band information and return the band to you.

Each year, ODWC nets paddlefish in Grand Lake and tags fish with metal jaw bands, each band with its own unique number. The bands are then recovered as fish are harvested and continue to provide ODWC with valuable management information. It is important that bands be left on the fish if the fish is released. If the tag is accidentally removed, please report it to ODWC at the PRC or online at [www.PaddlefishBands.com](http://www.PaddlefishBands.com).

## Please practice proper handling and catch and release methods on your paddlefish.

Paddlefish that you do not intend to keep must be immediately released back into the water.

Proper handling of paddlefish that you do not intend to keep is important for fish survival in catch and release fishing. Here are important tips for properly handling a paddlefish that you do not intend to keep:

- When you land or boat a paddlefish, try to handle it by its paddle and/or just in front of the tail, making sure to avoid the hook. Have your fishing companion help you if it is a heavy fish. Please do not handle fish by the mouth, jaw, or gills if you even think you might

# 2014 Regulations

*Be sure you have a copy of the most recent Oklahoma Fishing Guide, the rules represented here are valid only through December 31, 2014.*

**Paddlefish daily limit is one (1) daily on Sunday, Tuesday, Wednesday, Thursday and Saturday. Any paddlefish caught on a Monday or Friday must be released immediately. Anglers cannot possess a paddlefish in the field on Mondays or Fridays.**

**Once you keep a fish, you must stop paddlefish fishing (snagging) for the day and report the harvest using the online E-Check system at [wildlifedepartment.com](http://wildlifedepartment.com).**

**The annual paddlefish harvest limit is two (2) paddlefish per angler.**

*The following restrictions apply to paddlefish harvest at all times.*

- Paddlefish angling by all methods is closed on the Spring River from the State Highway 60 bridge upstream to the Kansas line. Snagging of paddlefish or any fish is closed from 10 p.m. to 6 a.m. year round on the Grand River from the State Highway 412 bridge upstream to the Markham Ferry (Lake Hudson) dam.
- Residents and nonresidents must obtain a free paddlefish permit in addition to a fishing license before fishing for paddlefish. Paddlefish anglers can obtain their free permit online at [wildlifedepartment.com](http://wildlifedepartment.com) or by contacting fishing license dealers or any Department of Wildlife office in the state (see Fisheries Contacts, page 44 of the 2014 Oklahoma Fishing Guide).
- Residents and nonresidents may only have one paddlefish in their possession in *the field\**. Nonresidents may possess no more than the annual harvest limit at any other time. *\*In the Field\* - meaning while fishing, while in the boat, on the bank, in the immediate vicinity of any river, creek, stream, lake or pond, or while transporting or carrying the fish from the waters described above to camp or from such water to final destination.*
- Catch and release of paddlefish by use of rod and reel, trotlines and throwlines is allowed, year-round. Paddlefish must be released immediately after being caught, unless kept for the daily limit. Anglers must stop snagging for the day when a paddlefish is kept. Anglers fishing trotlines or throwlines must release all paddlefish before leaving their lines (unless keeping one for a daily limit).
- Paddlefish taken by bowfishing, gigs, spears and spearguns cannot be released. These methods cannot be used on Mondays and Fridays.
- Paddlefish not immediately released are considered kept and must be tagged immediately with the angler's paddlefish permit number. Date and time of harvest must be recorded on the permit. All harvested paddlefish must be reported within 24 hours to the Online Check Station at [wildlifedepartment.com](http://wildlifedepartment.com). Under no circumstances can any paddlefish be caught, kept and later released (no culling).
- Each cleaned paddlefish and its parts (carcass, meat or eggs) must be tagged and kept separate from all other cleaned paddlefish or paddlefish parts. Each person must keep his paddlefish distinctly separate from paddlefish taken by others. Paddlefish and paddlefish parts must remain tagged until the person in possession of the same reaches his residence.
- Paddlefish and paddlefish parts must remain tagged until the person in possession of the paddlefish and/or parts reaches their residence.
- When snagging for paddlefish, anglers are allowed only one single hook or one treble hook. All hooks must have barbs removed or completely closed. Anglers must stop snagging when a paddlefish is kept.
- When landing a paddlefish, it is illegal to use gaff hooks or any technique or device that injures the fish, unless the angler is bowfishing.
- No person can possess eggs (attached to the egg membrane) of more than one paddlefish. No person can possess more than 3 pounds of processed paddlefish eggs or fresh paddlefish eggs removed from the membrane. Processed eggs are any eggs taken from a paddlefish that have gone through a process that turns the eggs into caviar or into a caviar-like product.
- No person can ship into or out of, transport into or out of, have in possession with the intent to so transport, or cause to be removed from this state, raw unprocessed, processed or frozen paddlefish eggs.
- All paddlefish must have all internal organs removed before leaving the state.

**There are additional regulations for fishing below dams. Consult the Oklahoma Fishing Guide for more information.**



- release it, as that is very damaging to the fish's chances of survival.
- Do not keep the fish out of the water longer than you can hold your breath.
- Gently place the paddlefish back in the water when releasing it, making sure the fish is right-side up and swims away on its own.

Improper handling of paddlefish can cause additional stress on the fish, and either result in its death or inability to properly reproduce. The key is to reduce handling of the fish and get it back in the water as quickly as possible. With good catch and release practices, the fish you release this year may be the one you keep a few years later!



*Fisheries Technician Brad Johnston shows the proper way to hold a paddlefish.*

# Common Questions

## What is a paddlefish and where are they found?

Paddlefish are an ancient fish that are most closely related to the sturgeons. There are only two species of paddlefish and one is native to China and is extremely endangered (possibly extinct). American paddlefish are much more abundant and are native to the Mississippi and Missouri river basins (plus all major tributaries) from Montana to the Gulf of Mexico. In Oklahoma, they are found in the Arkansas and Red river basins, most prominently in reservoirs such as Grand Lake on the Neosho River.

Paddlefish are a unique fish species in that they have a mostly cartilage skeleton, an elongated, flat rostrum (the "paddle"), smooth skin (no scales), small eyes, and a large, gaping mouth. Paddlefish migrate upstream in spring to spawn when the flow and temperature conditions are just right. Fish deposit adhesive eggs on gravel bars in the river and then retreat back into the lake. Paddlefish larvae hatch after about a week and float downstream to nursery habitats throughout the floodplain and reservoir.

## What is the purpose of the Paddlefish Research Center (PRC)?

The purpose of the center is to collect biological data that will help biologists manage Oklahoma populations of this unique fish. When anglers bring in their fish for cleaning at the PRC, biologists can determine age, gender, and reproductive success of paddlefish and use this information to make management recommendations to keep the population healthy. As a side benefit, anglers get their fish cleaned and ODWC personnel process a previously wasted resource (eggs) into caviar to generate funds that benefit fish and wildlife research and conservation programs statewide. The PRC serves as the hub for all paddlefish research and management activities throughout Oklahoma.

## What do paddlefish eat?

Paddlefish swim through the water with their mouths open, scooping up microscopic zooplankton (small aquatic organisms). Although mature fish do not have teeth, juveniles have small teeth which they use to grab hold of individual zooplankton. These teeth generally disappear by the time a paddlefish is 3 or 4 years old. Paddlefish have an interesting ability to use specialized cells on their bill to sense the weak electrical signals generated by plankton. Because paddlefish won't bite on bait, anglers hoping to catch a paddlefish must participate in snagging.

## Does catch & release harm paddlefish?

Based on our evidence, responsible catch and release practices do not cause permanent harm to paddlefish - they are a very hardy species. We often observe scars and old wounds indicating that a paddlefish was previously snagged and released. When paddlefish get injured and stressed resulting in death, they will float at the surface. Observations of dead paddlefish in Grand Lake and the Neosho River are extremely rare. Of course, each angler has the responsibility to practice the following: use barbless hooks (mandatory regulation), don't use a gaff to land fish (mandatory regulation), don't grab or hold a paddlefish by the gills, and release the fish immediately (don't keep it out of the water any longer than you can hold your breath). Also, if you seriously injure a fish that you'd normally release, keep it rather than releasing it for a potentially larger fish (assuming you are fishing on a legal-take day). ODWC completed a project in 2013 investigating the post-release movements of snagged fish. Results suggested that spawning movements were unaffected by the short-term stresses of catch and (immediate) release.



*The fish on the left displays two healed scars from being previously hooked by an angler. The fish on the right displays a large scar which likely indicates an impact with a boat propeller.*

## How old are these paddlefish?

It is tough to estimate a paddlefish's age externally. ODWC uses lower jaw bones (one of the few bony structures on a paddlefish) to age them. Fish deposit growth rings in certain bones, much like the annual rings of a tree trunk. Jaw bones are thinly sliced and rings are counted to estimate age. Oklahoma paddlefish migrating upstream in spring are approximately 7 to 14 years of age. The majority of males mature at age 8, while females mature at age 10. The majority of fish being caught in the Grand River system are on their annual spawning run that occurs when they reach sexual maturity. Most paddlefish in Grand Lake are younger than 20 years old, but ODWC has aged fish up to 27 years old.



**LOOKING TO THE FUTURE**  
ODWC working with anglers to help paddlefish

ODWC is active all year collecting information to help manage your paddlefish with science-based approaches. With data from the PRC and that collected off-season by ODWC, we know more than ever about the paddlefish in the Grand River system. Paddlefish netting each winter captures younger fish that allows us to forecast if we have strong year or weak classes coming into the harvest. For example, back in 2002-2004 we knew that anglers would be experiencing some great snagging in the period 2008-2015 when the strong 1999 year class was mature and migrating up the Neosho River. In the past several years, the fishing has been excellent and the fishery has grown in popularity. Overall, the paddlefish population is healthy and with proper management, anglers can look forward to many years of good snagging. However, age data and the prominence of the 1999 year class in Grand Lake strongly suggest that the population will continue to experience a natural decline in the next 2-5 years

## How can you tell the difference between male and female paddlefish?

The easiest method to differentiate males from females is the presence of tubercles. Tubercles are whitish goose bump-like structures that are more prominent on males than on females. Generally, they are located on the head and extend down the back to the dorsal fin of male fish. Smaller tubercles can also be found on the pectoral and pelvic fins of male fish. Males are generally smaller than females and mature earlier.



*Tubercles are whitish goose bumps identified in this picture of a male paddlefish.*

## What has the paddlefish permit data told ODWC?

From the permit data provided by anglers and their use in postseason angler surveys, ODWC knows that a growing number of resident and nonresident anglers fish for paddlefish during the spring run. The growing popularity of this fishery gives further reason to monitor angler harvest and the health of the paddlefish population. Anglers have repeatedly indicated that the fun and excitement of paddlefishing combined with the chance of catching a truly big fish were the most important aspects of their experience.

## Is the Grand Lake population increasing or decreasing?

The size of fish populations will fluctuate naturally as the population experiences different river conditions each year, which impacts the success of spawning. ODWC has been monitoring some big changes in population size on Grand Lake since 2004. Through our netting results, we knew that the population had experienced a significant rise in numbers due to an outstanding spawn in 1999. This year class of fish has matured and has been migrating into the Neosho River since 2008, therefore it is supporting a large snag fishery which we are still enjoying today. Subsequent years' spawning haven't been nearly as successful as 1999, therefore these fish are not being replaced at a rate to keep the population at an elevated level. ODWC has watched the Grand Lake population decline by 67% during 2008-2012 due to recreational harvest and natural mortality processes. This decline was expected, and ODWC has developed a harvest management framework to prevent overharvest. Harvest regulations may continue to change as this population stabilizes (and hopefully increases) in the future.

## Why is there now an individual annual harvest limit when we used to be allowed to keep one fish per day?

As the Grand Lake population has continued to decline and has experienced less-than-optimal spawning, harvest and mortality have outpaced recruitment. Paddlefish angling in Oklahoma has grown in popularity and is more prominent now than ever. For long-term sustainability of paddlefish angling in Oklahoma, ODWC needed a method to moderate harvest. By examining harvest data over five years, it was clear that most Grand Lake paddlefish anglers (86%) keep two or fewer fish in a year. Therefore, an individual annual harvest limit of two fish was most appropriate to reduce harvest by impacting only the high-harvest anglers. Paddlefish are very sensitive to overharvest and ODWC aims to avoid this scenario by managing harvest while preserving catch-and-release opportunities.



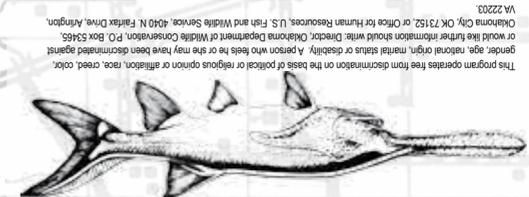
*ODWC Biologist collecting data at the PRC.*

due to the 1999 year class reaching the end of its expected lifespan. Subsequent year classes are not projected to be as strong as the class of 1999. As these 1999 fish are harvested by anglers, younger fish are taking their place, but not quite at the same rate as the banner year 1999. The good flow year of 1999 was followed by several less than optimal years of stream flow (2000-2007). Over the next few years of netting, biologists will determine if the optimal spawning conditions did in fact produce any strong year classes similar to 1999. Recent netting data indicates a promising increase in younger, immature fish which will surely contribute to the population and the fishery in the future. ODWC is closely monitoring population levels, recruitment, and harvest to ensure a sustainable fishery. For effective management, paddlefish snagging regulations will likely need to be adjusted to conserve the resource as the number of fish rises and falls.

Other factors such as global climate change or non-native species invasions (e.g. the Asian Carp) may impact Oklahoma's paddlefish in the future. Oklahoma has experienced two successive drought years 2011-2012 in addition to seemingly more frequent flooding events. Asian carp, a known competitor with paddlefish, have been found in Grand Lake and the Neosho River. If you manage to catch or encounter an Asian carp, do not release it and please report it to ODWC.

The impacts of these ecological effects on the future of paddlefishing are not fully understood at this time, but ODWC will be evaluating all available scientific information (and seeking information from valuable anglers) in our continuous monitoring of population status, harvest, and regulation.

Thanks for your support.



Oklahoma Highway Lake Patrol (Troop W)  
Fl. Gibson: (918) 682-4314  
(918) 847-2001

U.S. Army Corps of Engineers  
Miami Area Chamber of Commerce  
(918) 542-4435 or [Info@miamiockchamber.com](mailto:Info@miamiockchamber.com)

Grand River Dam Authority  
Grand or Hudson Lake: (918) 782-9259  
District Captain - Jeff Brown (918) 331-5078

Report Fish & Wildlife Violations  
Mays Co. Monte Reid (918) 373-0767 or Steve Loveland (918) 857-4802  
Craig Co. Brandon Fulton (918) 244-2035  
Delaware Co. Miami Lotfitts (918) 533-2678 or Kody Moore (918) 857-8597  
Ottawa Co. Jason Adair (918) 533-2679

Report Harvested Paddlefish within 24 hrs  
[www.wildlifedepartment.com](http://www.wildlifedepartment.com)

Tim Miller, Biologist: (918) 533-7633  
Jason Schooley, Biologist: (918) 504-0023  
Brent Gordon, Paddlefish Research Supervisor: (918) 686-3673  
For Pick-up: (918) 542-9422

Paddlefish Research Center (ODWC)  
Contact us at [Info@odwc.state.ok.us](mailto:Info@odwc.state.ok.us)  
Visit us at [www.wildlifedepartment.com](http://www.wildlifedepartment.com)

# CONTACTS

**CLOSED Monday & Friday**

Operational March 1 - April 30  
Sun, Tue, Wed, Thur, Sat: 9 a.m. - 6 p.m.

*\*The PRC is only operational for a few months each year in early spring.*

# PRC Operations

# PADDFISH RESEARCH CENTER MAP



**Don't forget to report your harvest @ [wildlifedepartment.com](http://wildlifedepartment.com)**



*Photo by PRC*

**Why do we need to report our paddlefish harvest? It's just a fish!**  
 In many ways, paddlefish have more in common with big, sensitive game species than they do with other fishes. Paddlefish are inherently difficult to manage and are vulnerable to overharvest. They are a long-lived species that takes a long time to mature (up to 10 years). Once mature, paddlefish may not spawn every year. Paddlefish need very specific river conditions for successful spawning and recruitment, which occurs only periodically. If ODWC allowed a paddlefish population to crash, recovery might take 10-15 years and would likely require a prohibition on snagging followed by strict harvest limits. In contrast, other fish species are sexually mature in one year, have high reproductive rates, and are less sensitive to environmental changes.

The greatest value of paddlefish harvest reporting is the fact that anglers can now provide information to ODWC about paddlefish harvest statewide, not just on Grand Lake. In the near future, ODWC aims to manage harvest within individual stocks/populations rather than using blanket statewide regulations. This will allow liberal harvest where the stocks and recruitment allow it.

**Report harvested paddlefish @ [www.wildlifedepartment.com](http://www.wildlifedepartment.com)**

**Why can ODWC sell the eggs and the individual anglers cannot?**  
 With few exceptions, it is illegal to sell wildlife or wildlife parts. These laws protect wildlife from exploitation. By processing formerly-discarded paddlefish eggs, ODWC can put the funds from the sales right back into Oklahoma fish and wildlife programs to benefit all hunters, anglers, and outdoor enthusiasts, not just a few individuals.

**Where do the proceeds from Oklahoma paddlefish caviar sales go?**  
 Contrary to popular belief, these funds from caviar sales are used for more than just paddlefish projects. In fact, the funds go into the ODWC general budget and are used for fish and wildlife programs statewide, including lesser prairie chicken research, quail management, hybrid striped bass production, black bear conservation, etc. By participating in this program, you are helping ODWC better manage all our natural resources... this benefits anglers, hunters, and outdoor enthusiasts alike. ODWC thanks you for your support.

**ATTENTION ANGLERS**  
 Paddlefish brought to the Research Center must be alive in order to be processed. Dead fish cannot be accepted!

**OPERATION GAME THIEF**

OPERATION GAME THIEF (OGT) is a program of the Oklahoma Department of Wildlife Conservation designed specifically to stop illegal killing of the fish and game which belong to YOU, whether you're a sportsman or not. It's a big problem with no simple solution. Help from the public sportsmen makes a difference.

When reporting a violation, please note as many facts as possible. You will be asked a variety of questions and the more information you can provide, the better chance the violator can be caught, and the case successfully prosecuted.

**Do not attempt to stop a violation yourself or to detain those responsible. Be safe, and be a good witness!**

It is always better to call the game warden stationed in the county in which the violation occurred. Game wardens' numbers are listed in the printed regulations or online. You can also report a violation by calling 1-800-522-8039 between 8 a.m. and 4:30 p.m. Monday through Friday. You can remain anonymous. **DO NOT** use this number for general information requests. General information may be obtained by phoning the Wildlife Department at (405) 521-3851.

**WHERE TO GET A LICENSE**

A fishing license and free paddlefish permit are all that is required of anyone who plans to paddlefish in Oklahoma. On the map are the locations of local license dealers indicated by a green numbered dot. Contact information for these dealers is also listed to the right. You may obtain your fishing license and paddlefish permit online at [wildlifedepartment.com](http://wildlifedepartment.com). Be sure to get a copy of the Oklahoma Fishing Guide for information regarding license exemptions.

#	LICENSE DEALER NAME	LOCATION	PHONE #
1	WAL-MART	Miami, OK	(918) 542-1274
2	WYANDOTTE TRIBE TURTLE STOP	Wyandotte, OK	(918) 678-2877
3	LITTLEFIELDS SPORTING GOODS	Afton, OK	(918) 257-4027

Anglers can visit our website to access the Oklahoma Fishing Guide, Wildlife Department news, purchase a fishing license, obtain a free paddlefish permit and the online E-Check system...

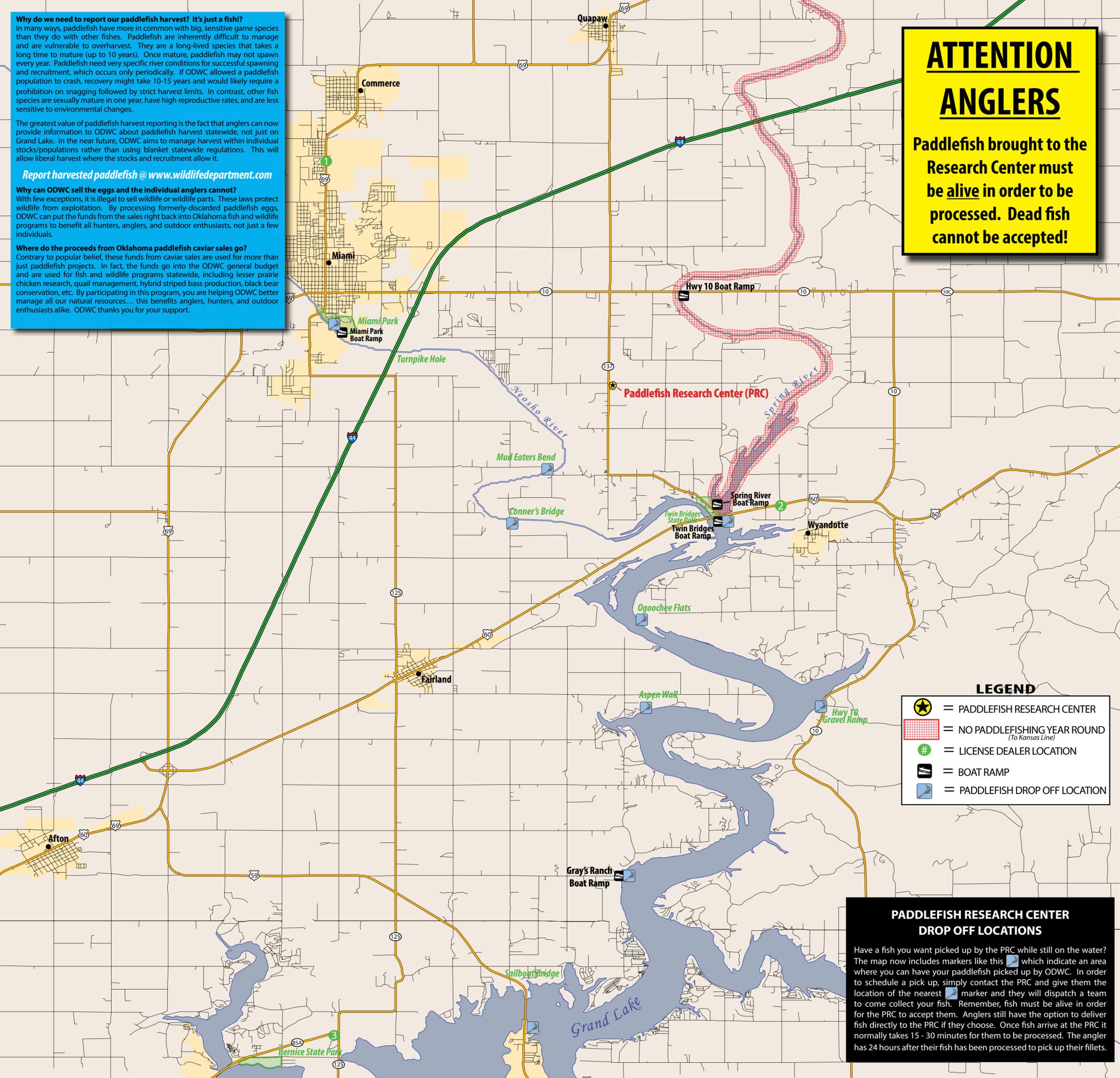
 <http://www.wildlifedepartment.com>

**BOAT REPAIR CONTACTS**

A list of boat repair contacts and addresses have been provided should you be in the area and in need of a boat repair service. This is not a complete list, but a selection of some of service locations closest to the PRC.

BUSINESS & LOCATION	PHONE #
<b>Big John's Trolling Motor Repair</b> 26505 S Highway 125, Afton, OK	(918) 257-8385
<b>Island Service Center</b> 28710 South 561 Road, Afton, OK	(918) 257-4164
<b>Performance Marine</b> 30383 Oklahoma 85, Afton, OK	(918) 782-9976
<b>Honey Creek Landing Boat Repair</b> 2530 South Main Street, Grove, OK	(918) 787-9990
<b>Grove Marine Inc.</b> 9121 Highway 59 N, Grove, OK	(918) 786-2219
<b>Good Watercraft Repair</b> 10698 Highway 59 N, Grove, OK	(918) 786-2353
<b>Frankie's Marine Repair</b> 24871 S 655 Rd, Grove, OK	(918) 786-8180
<b>Gene's Marine &amp; Salvage</b> 25801 S 655 Rd, Grove, OK	(918) 786-2553
<b>Grand Lake Prop Shop</b> 8411 Highway 59 N, Grove, OK	(918) 786-3555
<b>Barker's Edgewater Marina</b> 1513 98th Street Northwest, Grove, OK	(918) 786-2885
<b>Nichols Marine - Monkey Island</b> 26600 S Highway 125, Monkey Island, OK	(918) 257-5500

**Boat break down on the water? Contact: Grand Lake Towing, LLC - (918) 782-8600**



**LEGEND**

- = PADDLEFISH RESEARCH CENTER
- = NO PADDLEFISHING YEAR ROUND (To Kansas Line)
- = LICENSE DEALER LOCATION
- = BOAT RAMP
- = PADDLEFISH DROP OFF LOCATION

**PADDLEFISH RESEARCH CENTER DROP OFF LOCATIONS**

Have a fish you want picked up by the PRC while still on the water? The map now includes markers like this  which indicate an area where you can have your paddlefish picked up by ODWC. In order to schedule a pick up, simply contact the PRC and give them the location of the nearest  marker and they will dispatch a team to come collect your fish. Remember, fish must be alive in order for the PRC to accept them. Anglers still have the option to deliver fish directly to the PRC if they choose. Once fish arrive at the PRC it normally takes 15 - 30 minutes for them to be processed. The angler has 24 hours after their fish has been processed to pick up their fillets.