

COMMISSION ORDER 40: FISH MANAGEMENT RECOMMENDATIONS

CALENDAR YEARS 2017 & 2018

Proposal 1: *Reduce bass and catfish bag limits at Whitehorse Lake with size limited Largemouth Bass harvest.*

Proposed Regulation: The limit is 2 bass, minimum size 13 inches; the limit is 4 catfish; the limit is 6 trout in any combination.

Current Regulation: The limit is 6 bass; the limit is 10 catfish; the limit is 6 trout in any combination.

Justification: Whitehorse Lake filled during the spring of 2015 for the first time in several years. Region II fisheries staff used this opportunity to evaluate the effectiveness of the current fisheries management of this lake. This important fishery is located near a maintained campground and has been managed primarily for Rainbow Trout over the past several decades.

A creel census was conducted on Whitehorse Lake during the time that the campground was open (May – September) in 2015. During this time four fish stockings were conducted in April and May totaling 14,148 Rainbow Trout, only 3.6% of these stocked trout were caught by anglers. The poor return of stocked Rainbow Trout is due to marginal water quality conditions for salmonids. A water quality survey of Whitehorse during the summer of 2015 revealed that warm temperatures and low dissolved oxygen could not support a summer trout fishery.

Angling success averaged 0.86 fish per hour and angler satisfaction was relatively high for a lake with marginal trout water quality in 2015. Ninety percent (90%) of the fish caught in Whitehorse Lake during the creel survey were Black Crappie. However, due to the lack of a large predator such as Largemouth Bass most of the crappie were stunted. It is our intent to manage Whitehorse Lake as a mixed warm water fishery similar to Cataract Lake and Kaibab Lake. Stockings of Largemouth Bass and Bluegill are planned to increase the angler opportunities and to help control the Black Crappie population. In addition to stocking Largemouth Bass and Bluegill, the Region, in cooperation with the Kaibab National Forest, Trout Unlimited, and Northern Arizona Flycasters, will pursue fish habitat placement in the lake to improve the conditions for warm water fish. The changes in regulations for Largemouth Bass will help protect the

recently stocked fish and allow a viable naturally reproducing population to establish in the lake. The changes in regulations will also bring all the warm water fisheries in the Williams area under the same regulation structure making it easier for anglers.

Potential Benefits:

- Will allow the establishment of a viable Largemouth Bass population in Whitehorse Lake
- Will simplify local regulations. All lakes that are managed for Largemouth Bass in the Williams Arizona area will have identical Largemouth Bass regulations
- Will allow management of warm-water fish species that are more appropriate for Whitehorse Lake. It is our hope that catch rates will remain high and that angler satisfaction will increase as Largemouth Bass become more abundant.

Potential Drawbacks:

- Anglers will be unable to catch and keep Largemouth Bass less than 13 inches.

Proposal 2: *Reduce the daily bag limit on Lees Ferry to 2 Rainbow Trout and extend the downstream boundary of the Blue Ribbon Trout Fishery. Remove trout regulations between the Lees Ferry sportfishery and Navajo Bridge.*

Proposed Regulation: *From Glen Canyon Dam to ½ mile downstream of the Paria Riffle. The limit is 2 Rainbow Trout; artificial fly and lure only; barbless hooks only. Rainbow Trout taken from this portion of the Colorado River shall be killed and retained as part of the bag limit or immediately released. There is no limit on other sport fish species which includes all species of bass (including sunfish and stripers), all species of catfish, all species of trout other than Rainbow Trout, and Walleye.*

From ½ mile downstream of the Paria Riffle to Separation Canyon, including all tributaries within the Grand Canyon National Park. There is no limit on sport fish species which includes all species of bass (including sunfish and stripers), all species of catfish, all species of trout, and Walleye.

Current Regulation: *From Glen Canyon Dam to the beginning of the Paria riffle (Lees Ferry). Rainbow Trout over 14 inches may not be possessed. The limit is 4 Rainbow Trout per day; artificial fly and lure only; barbless hooks only. Rainbow Trout taken from this portion of the Colorado River shall be killed and retained as part of the bag limit or immediately released. There is no limit on other sport fish species which includes all species of bass(including sunfish and stripers), all species of catfish, all species of trout other than Rainbow Trout, and Walleye.*

From the beginning of the Paria riffle to Navajo Bridge, including all tributaries. The Limit is 6 Rainbow Trout per day. Rainbow Trout taken from this portion of the Colorado River shall be killed and retained as part of the bag limit or immediately released; there is no limit on other sport fish species which includes all species of bass (including sunfish and stripers), all species of catfish, all species of trout other than Rainbow Trout and Walleye.

From Navajo Bridge to Separation Canyon, including all tributaries within the Grand Canyon National Park. There is no limit on sport fish species which includes all species of bass (including sunfish and stripers), all species of catfish, all species of trout, and Walleye.

Justification: The blue ribbon Rainbow Trout fishery at Lees Ferry has seen a dramatic decrease in angler catch rates over recent years (2012-2015). This reduction in catch rates is best explained by the significant reduction in numbers of catchable trout (Rainbow Trout > 225mm) within this sportfishery (Figure 1). Recent unpublished creel data suggests that currently boat anglers are experiencing catch rates less than the management objective of greater than one fish per hour. Anglers in the walk in area

have not achieved the goal of greater than one fish per hour since 2012 (Figure 2). As catch rates have decreased in the walk in area, we have observed an increase in the proportion of Rainbow Trout harvested in the walk in area (Figure 3). Angler use at Lees Ferry has a profound impact on the local economy near Marble Canyon Arizona. Personal communications with local businesses suggest that use has significantly declined in 2016. Arizona Game and Fish monitoring shows a reduction in use in the walk in area corresponding with reduced catch rates in 2015 (Figure 4).

Harvest was not likely responsible for the recent reductions in the Rainbow Trout population. Low reservoir levels in Lake Powell and corresponding warmer water temperatures combined with natural over population in 2012 are likely responsible for the most recent fisheries reduction. However, harvest may have an impact on the current reduced population of Rainbow Trout. Cutting legal harvest in half from 4 trout to 2 trout and removing the 14 inch size restriction will help in the recovery of this important fishery. This change in regulation will be evaluated again in two years to determine if increased harvest is warranted.

A change in the language that defines the downstream end of the Blue Ribbon Trout Fishery is needed also. The current language (“From Glen Canyon Dam to the beginning of the Paria riffle (**Lees Ferry**)”) makes it difficult to enforce the special regulations in that area because it is legal to use bait and to keep 6 Rainbow Trout in a ½ mile section of the Colorado River that is considered the “Walk in area” of the Lees Ferry sportfishery. Moving the boundary of the sportfish area ½ mile downstream would minimize this.

Potential Benefits:

- Increased harvest restrictions may hasten the recovery of the Lees Ferry fishery
- Guides and local businesses are in favor of increased harvest restrictions and proposed a change to catch and release only
- The current proposed increased harvest restrictions do not preclude the ability to still catch and keep two fish. Some anglers still like to harvest trout.

Potential Drawbacks:

- Anglers who prefer to harvest trout will experience greater harvest restrictions.



Aerial photo of the Lees Ferry area showing the current and proposed boundaries.

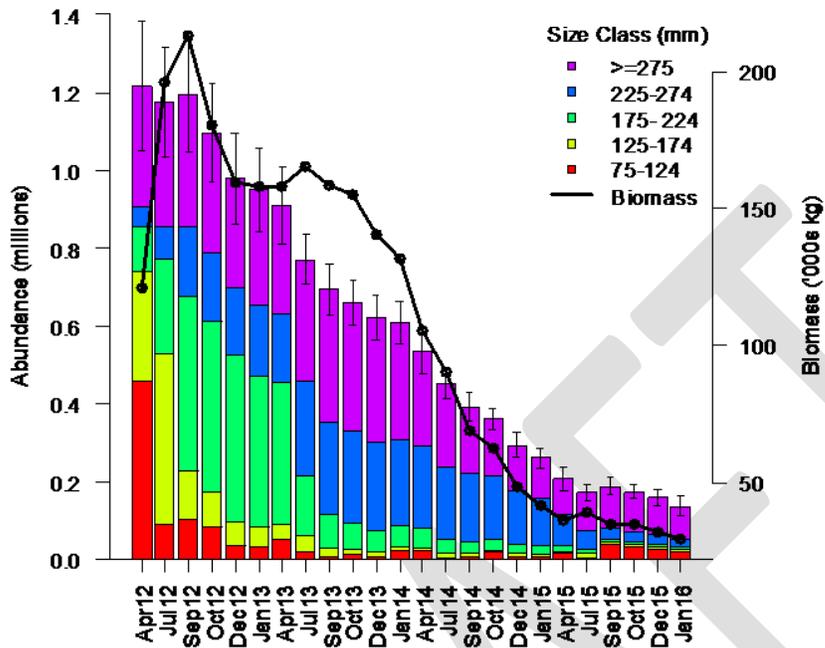


Figure 1. Estimated abundance by size class and biomass of rainbow trout from the Glen Canyon Dam to Lees Ferry (USGS preliminary data, April 2012- January 2016).

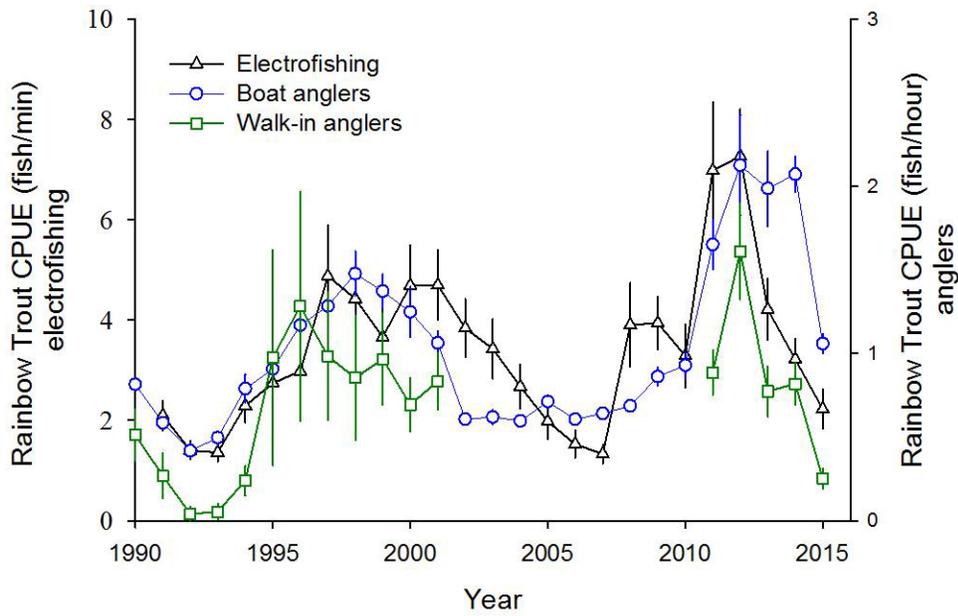


Figure 2. Average CPUE of Rainbow Trout from boat electrofishing (black) and average CPUE of boat (blue) and walk-in (green) anglers at Lees Ferry, Colorado River. Error bars are 95% confidence intervals.

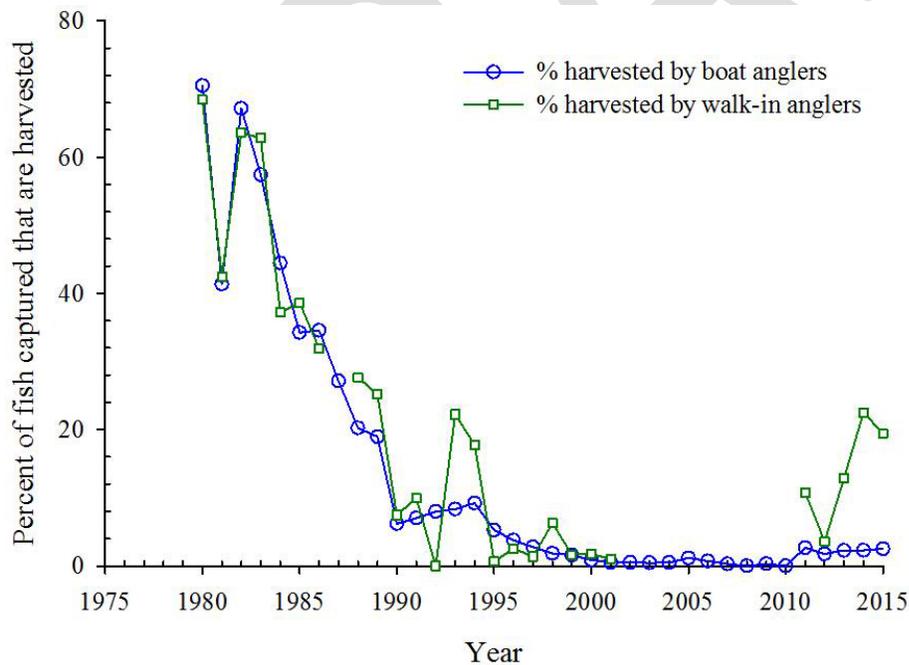


Figure 3. Percent of fish captured that are harvested via boat anglers (blue) and walk-in anglers (green), calculated from creel surveys at Lees Ferry from 1980 to 2015.

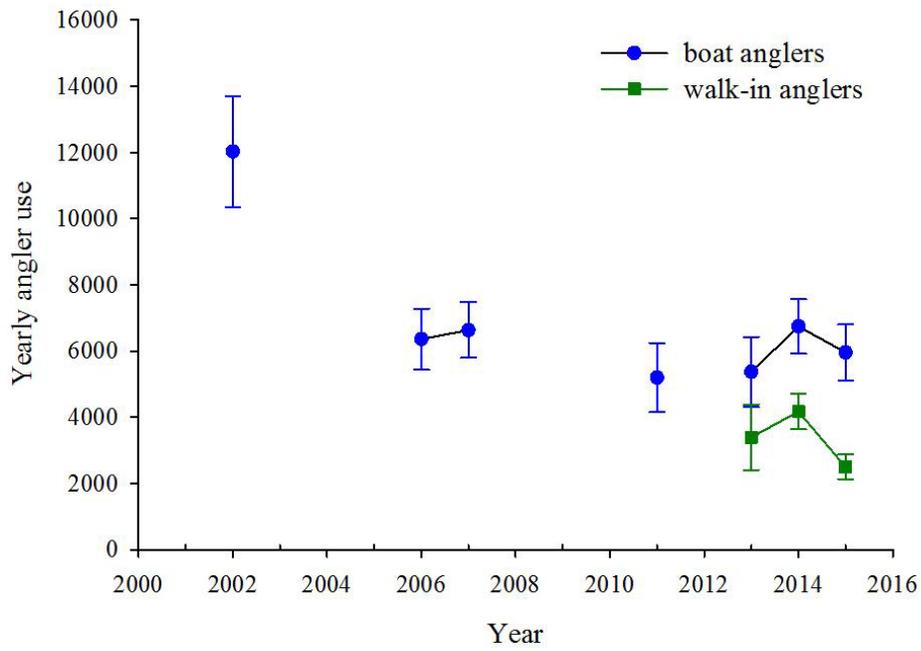


Figure 4. Estimated yearly angler use at Lees Ferry for both boat anglers (blue) and walk-in anglers (green). Only years with complete creel data are presented.

Proposal 3: *Simplify and reduce the trout bag limit to 5 at the Colorado River from Lake Mead to California-Nevada boundary (including Lake Mohave and Willow Beach).*

Proposed Regulation: *Lake Mead to California-Nevada boundary (including Lake Mohave and Willow Beach).* The limit is 5 trout in any combination; No change in other species of sportfish proposed.

Current Regulation: *Lake Mead.* The limit is 5 trout in any combination

From Hoover Dam to Davis Dam (including Lake Mohave and Willow Beach). The limit is 10 trout.

From Davis Dam to the California-Nevada boundary. The limit is 10 trout.

Justification: Members of the public, local dignitaries, as well as contributors of the funding that purchased the trout that have been stocked into the Colorado River this year have expressed interest in reducing the bag limit to make limits consistent on the Colorado River in shared waters with Nevada. The Department completed a roving creel survey of the Colorado River from Davis Dam to the California Nevada boundary from November 2015 to March 2016. The data from 381 interviews shows that of all the fish caught, 92.7% were Rainbow Trout. Of the Rainbow Trout caught, 93.1% were harvested (Figure 5). Catch and harvest rates remained high several days post stocking (Figure 6). Forty-one percent (41%) of anglers targeting trout were successful in catching 1 or more trout and 36% of anglers who were successful in catching one or more trout, had more than the proposed 5 trout limit. The Department believes based on historic use of the trout fishery that anglers targeting trout will continue to increase with the restoration of a more consistent trout stocking program by the Willow Beach National Fish Hatchery starting in late 2016. With so many of the caught trout being harvested, and catch rates remaining high several days after stocking, the Department believes it is necessary to reduce the limit. Reducing the bag limit to 5 trout will allow more anglers to have an opportunity to catch a trout and would increase the percentage of anglers who are catching 1 or more trout. Creel surveys will continue in conjunction with stockings to monitor trout catch and harvest rates.

Potential Benefits:

- Trout bag limit consistent in all Colorado River in shared waters with Nevada
- Allow for increased opportunity for anglers by increasing the number of anglers that will have an opportunity to catch trout following stocking events
- Reducing the bag limit allows more people to have a positive fishing experience due to increased demand for trout fishing opportunity and decreasing numbers of trout that our hatcheries can produce.

Potential Drawbacks:

- Though it is desired to have uniform fishing regulations along the Colorado River, California is not willing to change their regulations, so the limit would remain 10 at shared waters with California.
- This may cause confusion, but trout are not frequently caught in the reach shared with California and currently bag limits on catfish and crappie change at this location.
- Some anglers who have grown accustomed to the increased bag limit may not like the decrease and may see this as us taking something away from them.

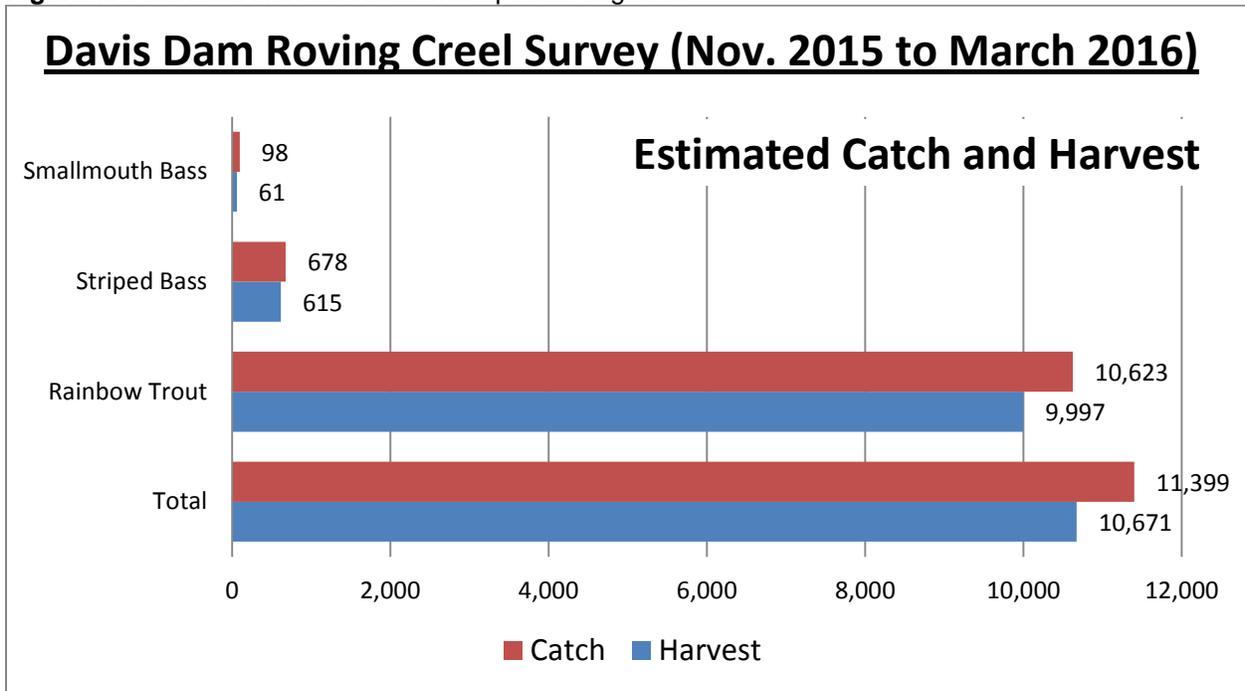
Figure 5. Catch and Harvest Rates from Roving Creel Surveys below Davis Dam, November 2015-March 2016.

15-16 Davis Dam Roving Creel - Summary Table								
Trout Stocking Season (Nov to March)	Shore			Boat			Total	
	n	Col. %	Row %	n	Col. %	Row %	n	Col. %
Est. Angler Hours:	14,654		83.4%	2,917		16.6%	17,571	
Catch								
Total:	9,731	100.0%	85.4%	1,668	100.0%	14.6%	11,399	100.0%
Rainbow Trout:	9,257	95.1%	87.1%	1,366	81.9%	12.9%	10,623	93.2%
Striped Bass:	383	3.9%	56.5%	295	17.7%	43.5%	678	6.0%
Smallmouth Bass:	91	0.9%	92.7%	7	0.4%	7.3%	98	0.9%
Harvest								
Total:	9,010	100.0%	84.4%	1,661	100.0%	15.6%	10,671	100.0%
Rainbow Trout:	8,630	95.8%	86.3%	1,366	82.3%	13.7%	9,997	93.7%
Striped Bass:	320	3.5%	52.0%	295	17.8%	48.0%	615	5.8%
Smallmouth Bass:	61	0.7%	100.0%	-	0.0%	0.0%	61	0.6%
% Harvest of Catch								
Total:	92.6%			99.6%			93.6%	
Rainbow Trout:	93.2%			100.0%			94.1%	
Striped Bass:	83.5%			100.0%			90.7%	
Smallmouth Bass:	66.9%			0.0%			62.0%	

Figure 6. Catch and Harvest Rates in days post stocking from Roving Creel Surveys below Davis Dam, November 2015-March 2016.

15-16 Davis Dam Roving Creel		RBT CPUE			RBT HPUE			
		Angler Type			Angler Type			
		Shore	Boat	Total	Shore	Boat	Total	
		Mean	Mean	Mean	Mean	Mean	Mean	
Days Following Stocking	1	1.45	0.53	1.37	1.23	0.53	1.16	
	2	1.65	0.08	1.37	1.65	0.08	1.37	
	3	1.09	1.00	1.07	0.97	1.00	0.98	
	4	0.92	-	0.81	0.92	-	0.81	
	5	1.04	-	1.04	1.04	-	1.04	
	6	0.68	2.00	0.74	0.68	2.00	0.74	
	7	0.59	-	0.46	0.59	-	0.46	
	8	0.57	0.56	0.57	0.57	0.56	0.57	
	9	0.76	0.80	0.76	0.76	0.80	0.76	
	11	0.18	-	0.13	0.18	-	0.13	
	12	0.65	-	0.57	0.46	-	0.40	
	14	-	-	-	-	-	-	
	15	-	-	-	-	-	-	
	16	-	-	-	-	-	-	
	18	-	-	-	-	-	-	
	19	0.06	-	0.05	0.06	-	0.05	
	20	-	1.56	0.78	-	1.56	0.78	
	22	0.02	0.50	0.08	0.02	0.50	0.08	
	24	-	-	-	-	-	-	
	28	-	-	-	-	-	-	
29	-	-	-	-	-	-		
Days Following Stocking		1 to 3	1.42	0.54	1.31	1.26	0.54	1.17
		1 to 10	1.04	0.50	0.97	0.97	0.50	0.91
		1 to 14	0.95	0.37	0.86	0.88	0.37	0.81
		1 to 29	0.67	0.40	0.63	0.62	0.40	0.59

Figure 7. Catch and Harvest Rates with species targeted.



Proposal 4: *Kino Environmental Restoration Project fishing closure*

Proposed Regulation: Close the aquatic habitat within the boundaries of the Kino Environmental Restoration Project (KERP) to fishing.

Current Regulation: Currently open by default to fishing under statewide regulations.

Justification: In the mid 1990's the U.S. Army Corp of Engineers and Pima County agreed to reconstruct and expand the original 50-acre Ajo Detention Basin. The final footprint of the new KERP covers 141 acres that contains 28 acres of riparian and open water including a 5.6 acre, fifty foot deep pond; 21 acres of grassland, mesquite bosque, marsh and upland vegetation.

Since its completion the area has become a popular birding site as well as an important breeding location for native Great Plains and Narrow-mouthed toads. The site has also been evaluated as a release site for Lowland Leopard frogs, Sonoran Mud turtles and Northern Mexican Gartersnakes.

Pima County has determined that recreational fishing is not compatible with the goals and objectives of the project and Department staff agrees. We would prefer that the location be closed to fishing to further discourage the illegal introduction of non-native aquatic species.

Potential Benefits:

- Increased protection of native aquatic species now found at KERP
- Removes the incentive for anglers to illegally stock non-native aquatic species
- No net loss of fishing opportunity in the greater Tucson area.

Potential Drawbacks:

- Anglers in the immediate area may be dissatisfied with the decision to close the area to fishing. However because there is currently not a fishable population located at KERP and the presence of several Department supported Community Fishing Waters in close proximity impacts are expected to be negligible.

Proposal 5: *Simplify the trout bag limit change at Frye Mesa Reservoir.*

Proposed Regulation Change Language: The limit is 2 trout any species combination.

Current Regulation Language: The limit is 6 trout, any combination, **except** no more than 1 may be a Gila Trout.

Justification: Historically the Department has stocked Frye Mesa Reservoir with three different species of non-native trout; Rainbow Trout, Brown Trout and Brook Trout. All have been stocked opportunistically to support a recreational fishery. In or about 2010 the Department was presented with a unique opportunity to begin the stocking of native Gila Trout into Frye Mesa Reservoir. This effort marked the only opportunity for anglers to catch and harvest native Gila Trout in the state. Because of the possibility that anglers could still catch the other three species of trout previously stocked and the fact that the availability of Gila Trout was very limited initially, it was determined that the bag limit should remain at 6 trout in the bag but no more than 1 could be a Gila Trout.

Today, the Department continues to stock only Gila Trout and non-native trout species are no longer present. Angler reports and feedback from Department officers show that Gila Trout is the only species of fish currently being caught by anglers at Frye Mesa. Because no other trout species are being reported and the continued limited availability of Gila Trout for stocking it is proposed that the regulation be changed to allow anglers to catch and keep 2 trout regardless of species. This option will greatly reduce the confusion by anglers with the identification of the various trout species, still allow anglers to harvest fish but at the same time leave fish in the reservoir providing opportunity for additional anglers.

Potential Benefits:

- Simplification of the current regulation.
- Reduction in the number of misidentified fish in angler creel.
- Simplification of enforcement by Department officers.

Potential Drawbacks:

- Dissatisfaction by anglers wanting to keep a more traditional limit of 6 trout. However within a 20 mile radius of Frye Mesa reservoir there are 4 other locations where anglers can catch and keep 6 trout.

Proposal 6: *Allowing live bait caught on site at Riggs Flat Lake*

Proposed Regulation Change: Allow the use of Fathead Minnows caught on site to be used as bait at Riggs Flat Lake.

Current Regulation Language: Currently Riggs Flat is closed to the use of all live bait fish.

Justification: On several different occasions wildlife managers have encountered anglers using live Fathead Minnows caught at the lake as bait to catch stocked Brown Trout. Officers reported that anglers using the fatheads as live bait were quite successful in catching the Brown Trout and were upset that they could not continue to do so after interactions with the officers.

In discussions with the district officer and field supervisor it was determined that there was no biological reasons why anglers could not catch live fatheads at the lake and use them as bait. Currently there are several locations across the state that allows for the use of live bait fish caught on site to be used to catch fish. This opportunity has been met with positive comments from the public and the Region sees this as an opportunity to increase angler success and satisfaction at Riggs Flat Lake.

Potential Benefits:

- Increased angler opportunity and satisfaction
- Removes the incentive for anglers to illegally transport and use live bait fish currently not found at Riggs Flat Lake.

Potential Drawbacks:

- Over harvest of Brown Trout.

Proposal 7: *Continue the bow and arrow fishing season for catfish at Apache, Canyon and Saguaro Lakes.*

Proposed Regulation: **Apache Lake, Canyon Lake, Saguaro Lake** the limit is 5 catfish, any combination, when taken by bow and arrow. (Note: the catfish limit is 10, any combination, for all other legal methods.)

Current Regulation: **Apache Lake, Canyon Lake, Saguaro Lake and Roosevelt Lake** the limit is 5 catfish, any combination, when taken by bow and arrow through Dec. 31, 2016.

Justification: The season allowing bowfishing for catfish went into effect January 1, 2014 at Roosevelt, Apache, Canyon and Saguaro lakes. Fish population surveys as well as creel surveys from several of these lakes have not shown an impact to catfish populations. However, trophy class Flathead Catfish are prevalent and desired at Roosevelt Lake.

The Department conducted a total of 128 days of creel surveys at Roosevelt Lake between 3/2/2014 and 2/28/2015. Of those days, 108 were exit surveys and 20 were roving surveys. Surveys were conducted between sunrise and sunset with the creel period broken into either AM (50%) or PM (50%). Of 1,197 total angler interviews, 41 (3.4%) indicated that they were specifically targeting Flathead Catfish or flathead and one or more other species. Daytime interviews typically underestimate the amount of anglers targeting catfish however, since most catfishing occurs after dark.

A fish population survey using electrofishing was done in October of 2015. A total of 88 Flathead Catfish were sampled during those surveys (Figure 8). Flathead Catfish were sampled at a rate of 16.70 fish per hour. The overall mean relative weight was 91.75. The PSD for Flathead Catfish was 40. This data suggests a healthy Flathead Catfish population with proportionately high numbers in the Memorable and Trophy size classes (Figure 9). Individual Flathead Catfish in these size classes can be more than 20 years old.

The Department has spent a total of 75 man days and close to 600 hours sampling the fish populations at Roosevelt, Apache, Canyon and Saguaro lakes since the fall of 2013. When combined with the creel survey effort, that numbers grows to 203 days of data collection at an estimated cost of \$22,000.

As a result of this data collection and analysis, the Department recommends continuing the bow fishing opportunity at Apache, Canyon and Saguaro lakes. However, an exceptional trophy Flathead Catfish fishery exists at Roosevelt Lake. Per the Roosevelt

Lake Fishery Management Plan, Roosevelt Lake will be managed for this trophy opportunity. While angling bag limits will stay the same at Roosevelt Lake, Department outreach as well as outreach from catfish clubs will stress the value of catch and release fishing for trophy class Flathead Catfish. Because these fish are exceptional in size and age, it is important to protect this special resource. Bow fishing is always lethal and is therefore not compatible with trophy catfish management at Roosevelt Lake. It is difficult to tell the difference between a Channel Catfish and a Flathead Catfish in many situations encountered by bow fishermen therefore it is advisable to remove the bowfishing season for all catfish at Roosevelt Lake and not just Flathead Catfish.

It will be important to continue to collect data on catfish populations in the Salt Chain Lakes to ensure overharvest or selective harvest is not occurring on trophy class catfish. Further details on how data collection will continue will be outlined in specific fishery management plans for each reservoir.

Potential Benefits:

- Aligns with management objectives of Trophy Cat at Roosevelt Lake
- Opportunity still exists at other lakes
- Overall daily bag limits are simplified to the statewide limit
- Minimal impact on opportunity.

Potential Drawbacks:

- Impacts may be occurring but we have not been able to detect them in just two years
- Removal of an opportunity at Roosevelt Lake.

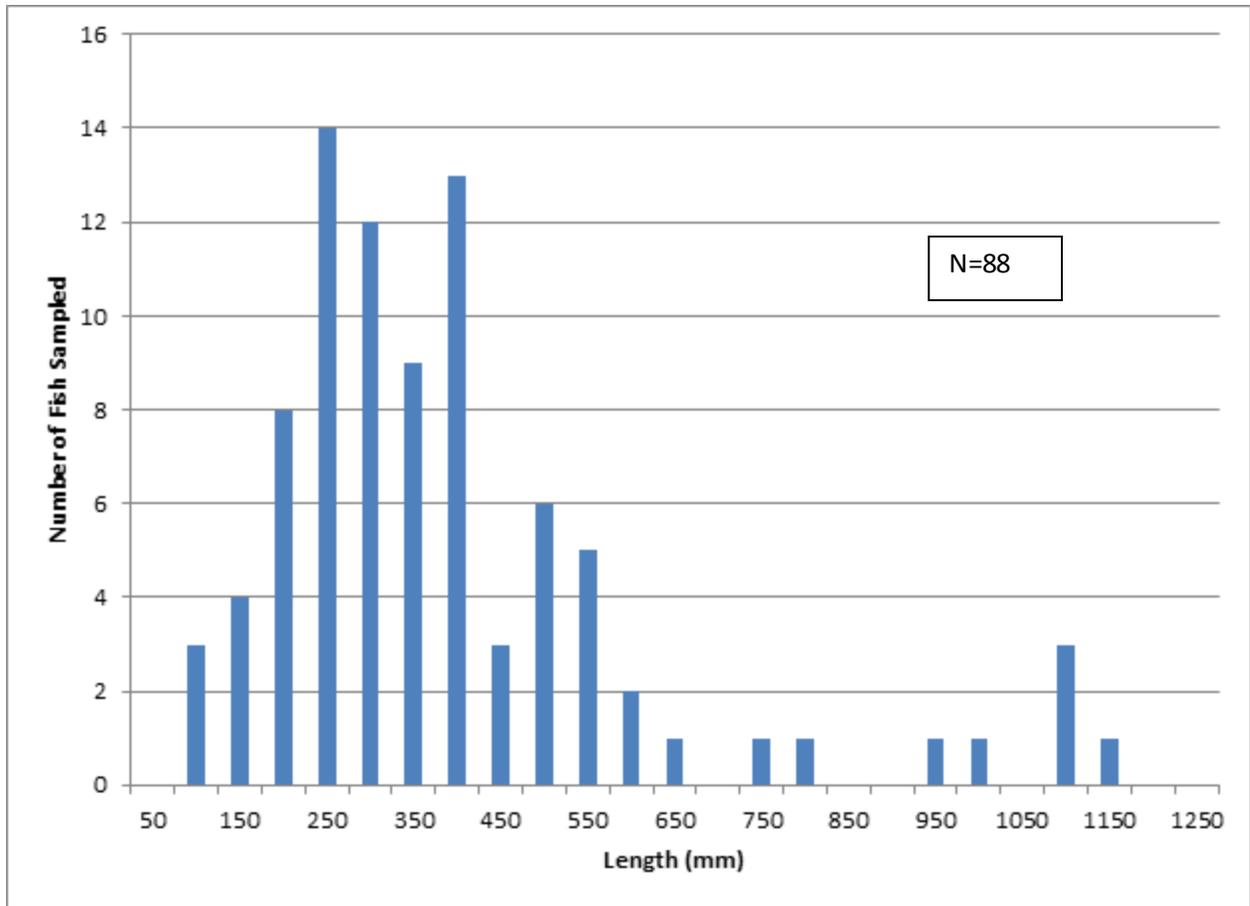


Figure 8. Size distribution of Flathead Catfish from Roosevelt Lake survey during October 19-22, 2015.

Figure 9. Proportional stock density and incremental stock densities for fish caught electrofishing at Roosevelt Lake on October 19-22, 2015.

Species	PSD	PSD S-Q	PSD Q-P	PSD P-M	PSD M-T
Largemouth Bass	49.54	50.46	32.11	16.51	0.92
Bluegill	1.33	98.67	1.33	0	0
Flathead Catfish	40	60	20	5	5