



Kiwanis Lake Fisheries Management Plan 2020 -2030

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Approved [] by Chris Cantrell *D. Andrew Clark* acting for Date: 10/1/2020
Aquatic Wildlife Branch Chief

Location

Kiwanis Lake is located at Latitude 33°22'26.1"N Longitude 111°56'20.4"W near Baseline Road and S. Mill Avenue in Tempe (Figure 1).

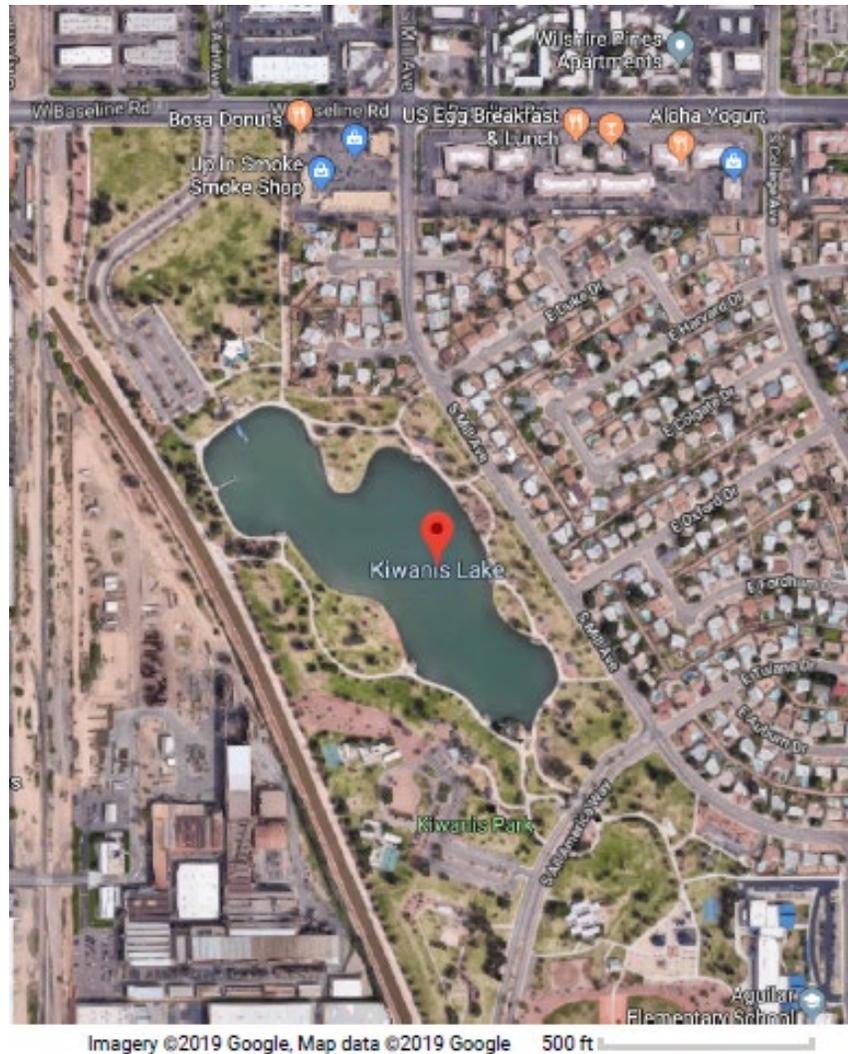


Figure 1. Kiwanis Lake, Tempe Arizona.

Management Prescription

The Arizona Game and Fish Department (Department) has developed approaches under Strategic Vision Documents (AGFD 2019a-b) to help guide fisheries management in Arizona. The Department also developed a Community Fishing Program (CFP) Vision in 2015 to further guide management objectives in CFP waters (AGFD 2015). Target catch rates and angler satisfaction is the same for all CFP waters: Achieve an angler satisfaction rate of at least 85% for each individual water, and overall catch-rates greater than 0.50 fish/hr. An Intensive Use management approach has been employed at Kiwanis since the lake was added to the program in 1984. Because the Department cannot possibly stock all CFP waters on the same frequent basis due to funding and logistical constraints, all CFP waters are designated under one of two stocking strategies, Core or Expansion. Kiwanis is designated under the Core strategy. Daily bag limits and frequency of stockings are listed in Table 1.

Management objectives and adaptive management strategies have been set under the Intensive Use approach. Monitoring activities, including frequent communication with communities and angler creel surveys will be used to determine if management objectives are being met. Guidelines and strategies to meet objectives are listed in Table 2.

Objective 1: Maintain an Intensive Use Rainbow Trout *Oncorhynchus mykiss* fishery.

Objective 2: Maintain an Intensive Use Channel Catfish *Ictalurus punctatus* fishery.

Objective 3: Maintain an Intensive Use Water for Bluegill *Lepomis macrochirus* and/or Redear Sunfish *Lepomis microlophus*.

Objective 4: Maintain an angler satisfaction rate of at least 85%.

Table 1. Kiwanis Lake Stocking Management Strategies:

Species	Management Strategy	Regulations	Stocking
Focal Species ¹			
Rainbow Trout	Intensive Use – Winter Months	Limit 4 per day	Frequent; November to March
Channel Catfish	Intensive Use – Summer Months	Limit 4 per day	Frequent; March to November
Sunfish (Bluegill, Redear)	Basic Yield – Year Round	Limit 10 per day	Once per year
Largemouth Bass <i>Micropterus salmoides</i>	Low Yield – Year Round	Limit 2 per day, 13in minimum	Maintenance as needed
Other sport species ²			
Black Crappie <i>Pomoxis nigromaculatus</i>	Low Yield – Year Round	Statewide limits	Maintenance as needed

¹ Species approved for stocking by U. S. Fish and Wildlife Service.

² Species is present, but future stocking would require a new environmental analysis (EAC) and consultation.

Table 2. Kiwanis Lake Objectives and Adaptive Management Strategies:

<i>Objective 1: Maintain an Intensive Use Rainbow Trout fishery.</i>			
Parameters	Objective Guideline	Trigger point to address unmet Objectives	Strategies if Objectives are not met
Angler Catch Rates	Maintain an angler catch rate of 0.5 fish/hour during stocking season	Catch rates drop below 0.5 fish/hour during assessment of catch rates on a 5 year rotational basis through creel surveys	<ul style="list-style-type: none"> • Implement changes in daily bag limit • Increase number of trout stocked to meet target catch rate • Increase frequency of stocking • Increase law enforcement patrols to reduce poaching
<i>Objective 2: Maintain an Intensive Use Channel Catfish fishery.</i>			
Angler Catch Rates	Maintain an angler catch rate of 0.5 fish/hour during stocking season	Catch rates drop below 0.5 fish/hour during assessment of catch rates on a 5 year rotational basis through creel surveys	<ul style="list-style-type: none"> • Implement changes in daily bag limit • Increase number of catfish stocked to meet target catch rate • Increase frequency of stocking • Increase the amount of artificial habitat • Increase law enforcement patrols
<i>Objective 3: Maintain an Intensive Use Water for Bluegill and/or Redear Sunfish.</i>			
Parameters	Objective Guideline	Trigger point to address unmet Objectives	Strategies if Objectives are not met
Angler Catch Rates	Maintain an angler catch rate of 0.5 fish/hour	Catch rates drop below 0.5 fish/hour during assessment of catch rates on a 5 year rotational basis through creel surveys	<ul style="list-style-type: none"> • Implement changes in daily bag limit • Increase number of sunfish stocked • Increase frequency of stocking • Increase the amount of artificial habitat • Increase law enforcement patrols • Suppress predators

Objective 4: Maintain an angler satisfaction rate of at least 85%.			
Parameters	Objective Guideline	Trigger point to address unmet Objectives	Strategies if Objectives are not met
Angler Satisfaction	A minimum of 85% of anglers rate fishing as fair, good or excellent	Creel census shows less than 85% of anglers rate fishing as fair, good or excellent	<ul style="list-style-type: none"> • Increase stocking rates • Increase size of fish stocked • Increase or modify efforts for angler education, preferably at the lake • Increase law enforcement efforts

Background

Kiwanis is an artificially constructed lake located in Tempe, Arizona at the intersection Baseline Avenue and Mill Avenue. The lake is 13 acres in surface area with a maximum depth of 8 feet. There are several group ramadas located around the lake as well as a playground for children. There is a sports field to the northern end of the lake as well as a recreation center that includes a wave pool. Paddleboat rentals are available but only seasonally.

The lake is fed by the Western Canal, one of the major canals managed by the Salt River Project (SRP), through a gravity-fed buried pipe inflow on the west side of the lake. There is an outflow in the southern end of the lake which irrigates the surrounding grass and fields. There is no other outlet making this lake a closed system and therefore poses no threat of fish species emigration. The bottom of the pond is sealed with a plastic liner. Fish habitat was installed in 2018 and is quite extensive throughout the lake. See the Habitat section of this document for a full description.

Productivity/Water Quality

The City Parks and Recreation Department has a vendor/contractor that manages the algae and aquatic macrophytes via periodic application of herbicides/algaecides as well as managing the lake aeration system. The lake has good water quality on a consistent basis.

Forage/Prey

Based on stocking records as well as observations the lake is known to harbor Largemouth Bass, Channel Catfish, Bluegill, hybrid sunfish, Redear Sunfish, Rainbow Trout, White Amur *Ctenopharyngodon idella*, Common Carp *Cyprinus carpio*, and Black Crappie.

Habitat

The lake edge was modified in 2018 as part of a multi-park, multi-feature renovation project. In addition to the lake edge, fish habitat was installed throughout the lake. This habitat is centered near the docks and includes several Porcupine Cribs, Pallet Structures, Catfish Condos, Catfish Barrels, and Mossback Structures. See Figure 2 below for a map of installed structures (provided

courtesy of Bryant Dickens, Arizona Game and Fish Department, Aquatic Habitat Specialist).

Species

Data from the 2015 angler creel survey indicate that angler preference is most frequently for anything that bites, followed by the focal species being stocked at the time. During November to March, that primary target species was trout, and from March to November the primary target species was catfish.

The CFP has conducted extensive angler creel surveys every 5 years to monitor target species, catch rates, angler satisfaction, harvest rates, and expenditures that can be used to evaluate the economic importance of the lake. Fish community surveys have not been completed with the exception of the Arizona Department of Environmental Quality sampling fish for contaminant studies.

Rainbow Trout: Catchable Rainbow Trout will continue to be stocked every 2 weeks from mid-November to mid-March (usually 9 stockings) at a rate of 30-40 pounds per acre. Stocked Rainbow Trout will average 0.75 pounds and have an average length of 10" to 13". An established bag limit of 4 trout per day shall remain until further notice.

Channel Catfish: Catchable catfish will continue to be stocked every 2 weeks from mid-March to mid-June, and late September to mid-November. No stocking shall take place in July or August due to extreme temperatures. Channel Catfish are stocked at a rate of approximately 100 pounds per acre. Stocked catfish average 1.5 to 2.0 pounds and have an average length of 14" to 18". An established bag limit of 4 catfish per day shall remain until further notice.

Bluegill and/or Redear Sunfish: Catchable sunfish are stocked once per year, usually in March or April. Sunfish are stocked at a rate of approximately 30 pounds per acre and have an average length of 5" to 8". An established bag limit of 10 sunfish per day shall remain until further notice.

Largemouth Bass: Catchable (13 inches or greater) or sub-catchable (less than 13 inches) Largemouth bass are stocked periodically depending upon available funds, but no more than once per year and usually in March or April. Largemouth Bass are stocked at a rate of approximately 20 to 30 pounds per acre. An established bag limit of 2 Largemouth Bass per day (Minimum length of 13 inches) shall remain until further notice.

Invasive Species

There are no confirmed records of aquatic invasive species at Kiwanis Lake, but the risk remains high due to the intensive public use it receives as well as the possible spread of invasive species through SRP canals. Specifically, Kiwanis' connection to the Western Canal puts the water at risk for Apple Snails and Quagga Mussels, though previous SCUBA dives have failed to find any Quaggas in the lake.

Access

Access to Kiwanis is via two parking lots, one on the northern end of the lake off of Baseline Avenue and the other on the southern end of the lake off of All-American Way, as well as parallel parking along Mill Avenue on the east side of the lake. Access to fishing along the shoreline is good and unrestricted. There is a boat ramp at the northern end of the lake, but boating is only permitted between sunrise and sunset and gas and electric motors are prohibited. The lake prohibits swimming and a permit is required to drink beer while all other alcoholic beverages are prohibited. The park is open from 6:00 am to 12:00 midnight.

Catch

Our target catch rates and angler satisfaction is the same for all CFP waters: Achieve an angler satisfaction rate of at least 85% for each individual water, and overall catch-rates greater than 0.50 fish/hour. Based on angler creel survey data, Kiwanis had angler catch rates of 0.44 fish/hour in 2000; 0.14 fish/hour in 2005; 0.31 fish/hour in 2010, and 0.34 fish/hour in 2015 (Table 3). Angler Use Days (AUDs) have remained remarkably similar over the past 15 years.

Overall catch rates fall short of the target catch rate but are still in the top 12 waters for catch rates 2015. Anglers typically target the species being stocked at the time; catfish in the summer and trout in the winter.

Satisfaction

Angler satisfaction is of paramount importance to the Department. Angler satisfaction is measured via two different methods. The first is by the median score on a 10-point scale; and the second is by the percentage of anglers giving a satisfactory score (6-10) on the same scale. Both indicators of satisfaction increased from 2005 to 2010 and then remained steady through the 2015 survey.

During Creel surveys and interactions with anglers, Department staff will ask a standardized question regarding an angler's satisfaction with the fishery. Angler satisfaction of 85% is the goal of the fishery and for the program as a whole.

Literature Cited

Arizona Game and Fish Department. 2015. Community Fishing Program Vision for 2015-2025. Arizona Game and Fish Department, Community Fish Program, Phoenix, Arizona.

Arizona Game and Fish Department. 2017. Community Fishing Program 2015 Creel Survey Report. Arizona Game and Fish Department, Community Fishing Program, Phoenix, Arizona.

Arizona Game and Fish Department. 2019a. Warmwater Sportfisheries Strategic Vision Document. Arizona Game and Fish Department, Statewide Sportfish Program, Phoenix, Arizona.

Arizona Game and Fish Department. 2019b. Coldwater Sportfisheries Strategic Vision Document. Arizona Game and Fish Department, Statewide Sportfish Program, Phoenix, Arizona.

Tables and Figures

Table 3. Catch rates of anglers at Kiwanis Lake as measured by creel surveys:

Lake and Year	Catch Rate Overall	Catch Rate RBT	Catch Rate CCF	Angler Satisfaction Median Score	Angler Satisfaction % Giving 6-10	AUD's (Angler Use Days)
KI 2000	0.44	NA	NA	7	63	27,400
KI 2005	0.14	NA	NA	7	77	37,300
KI 2010	0.31	NA	NA	8	88	34,100
KI 2015	0.34	NA	NA	8	88	34,300



Figure 2. Fish Habitat in Kiwanis Lake