# Veteran's Oasis Lake
## Fisheries Management Plan
## 2019-2029


## Scott Gurtin, Community Fishing Program Manager



**The Arizona Game and Fish Department (AGFD) prohibits discrimination on the basis of race, color, sex, national origin, age, or disability in its programs and activities. If anyone believes that they have been discriminated against in any of the AGFD's programs or activities, including its employment practices, the individual may file a complaint alleging discrimination directly with the Directors Office, 5000 W. Carefree Hwy, Phoenix, AZ 85086-5000, (602) 942-3000 or U.S. Fish and Wildlife Service, Attn: Civil Rights Coordinator for Public Access, 5275 Leesburg Pike, MS:WSFR, Falls Church, VA 22041-3803.**

Persons with a disability may request a reasonable accommodation or this document in an alternative format by contacting the Director's Office as listed above.


Approved [X] by Chris Cantrell _____ Date: 6/28/19
Aquatic Wildlife Branch Chief

## Location

Veterans Oasis is located near South Lindsay Road and East Chandler Heights Road, Chandler. Latitude 33.236792 Longitude -111.769019 (Figure 1).

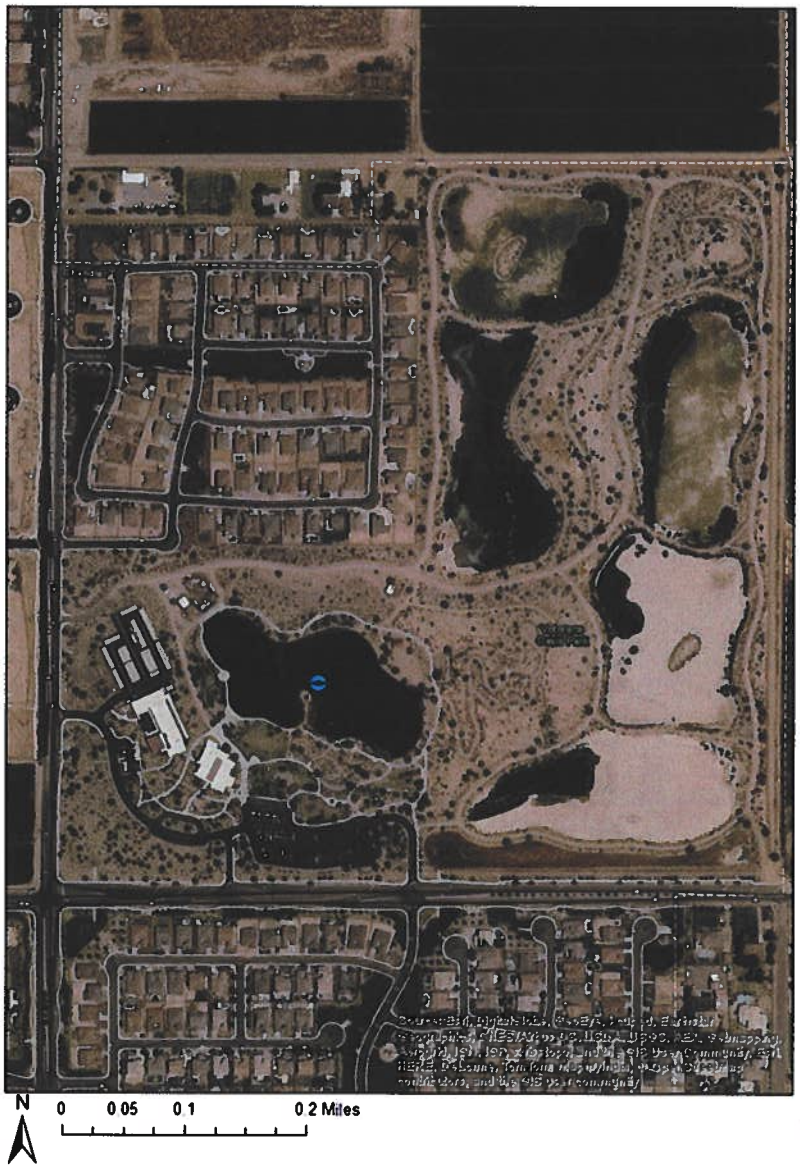


**Figure 1**. Veterans Oasis Lake, Chandler AZ.

## Management Prescription

The Arizona Game and Fish Department (Department) has developed concepts 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, for angler catch per unit effort (CPUE; fish caught per hour) and angler satisfaction (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. Veterans Oasis has employed an Intensive Use or put-and-take management strategy since the lake was added to the program in 2008. Current approved fish species for stocking include Rainbow Trout, Channel Catfish, Bluegill and Redear Sunfish, and Largemouth Bass.

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

**Channel Catfish** *Ictalurus punctatus*: 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"-18". An established bag limit of 4 catfish per day shall remain until further notice.

**Bluegill** *Lepomis macrochirus* and/or **Redear Sunfish** *Lepomis microlophus*: 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"-8". An established bag limit of 10 sunfish per day shall remain until further notice.

**Largemouth Bass** *Micropterus salmoides*: 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 20-30 pounds per acre. An established bag limit of 2 Largemouth Bass per day (Minimum length of 13 inches) shall remain until further notice.

**Table 1.** Veterans Oasis 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 | Low Yield – Year Round | Limit 2 per day, 13 in minimum | Maintenance as needed |

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

**Table 2.** Veterans Oasis Lake Objectives and Adaptive Management Strategies:

| ***Objective 1: Maintain an Intensive Use Rainbow Trout fishery.*** | | | |
|---|---|---|---|
| **Parameters** | **Objective Guideline** | **Trigger point to address unmet Objectives** | **Strategies if Objectives are Unmet** |
| 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. | • Implement changes in daily bag limit.<br>• Increase number of Rainbow Trout stocked to meet target catch rate.<br>• Increase frequency of stocking.<br>• Increase law enforcement patrols to reduce poaching. |
| ***Objective 2: Maintain an Intensive Use Channel Catfish fishery.*** | | | |
| 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. | • Implement changes in daily bag limit.<br>• Increase number of Channel Catfish stocked to meet target catch rate.<br>• Increase frequency of stocking.<br>• Increase the amount of artificial habitat.<br>• Increase law enforcement patrols. |

| ***Objective 3: Maintain an Intensive Use Water for Bluegill and/or Redear Sunfish.*** | | | |
|---|---|---|---|
| **Parameters** | **Objective Guideline** | **Trigger point to address unmet Objectives** | **Strategies if Objectives are Unmet** |
| 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. | • Implement changes in daily bag limit.<br>• Increase number of bluegill stocked to meet target catch rate.<br>• Increase frequency of stocking.<br>• Increase the amount of artificial habitat.<br>• Increase law enforcement patrols.<br>• Suppress predators. |
| ***Objective 4: Maintain satisfaction rate of at least 85%.*** | | | |
| 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. | • Increase stocking rates.<br>• Increase size of fish stocked.<br>• Increase or modify efforts for angler education, preferably at the lake.<br>• Increase law enforcement efforts. |

## Background

Veteran's Oasis is an artificially constructed lake located in Chandler Arizona at the intersection of Chandler Heights Road and Lindsay Road. This 5-acre lake is part of a 113-acre community park completed in November of 2007. The park included five recharge basins to recharge the local aquifer, a hummingbird/butterfly habitat area, lowland and upland vegetation, student and Native American gardens, an Environmental Education facility, a police facility, ramadas, children's play area, and walking and equestrian trails. The lake and park area was designed to accommodate urban angler needs such as parking, restrooms, handicap access, stocking truck access, and fishing access.

Veterans Oasis Lake is a closed system lake, constructed for recreation and aesthetics. Lake depths average 9 feet with a maximum depth of 13 feet, and the lake bottom has been sealed to eliminate seepage. Water is supplied by groundwater pumped directly from the aquifer, and the lake provides irrigation water for surrounding park turf and landscape which has been engineered to minimize any surface runoff into the lake. This man-made municipal lake is an excavated basin that has no outflow and is located outside of any natural drainage. Consequently, there are no means for fish immigration into or out of Veterans Oasis Lake via drainages, outflows, or surface runoff.

Veterans Oasis was designated as a Community (Urban) Fishing water in September 2008, after construction was completed. Since adding to the program, fish stocking has been routine with catchable catfish during the summer months (March-November) and Rainbow Trout during the winter months (November-March). Sunfish were often stocked twice per year around March and October. Regulations and bag limits have not changed since the lake was added to the program, and no documented records of past fishery studies were found.

## Productivity/Water Quality

The City Parks and Recreation Department has a contractor (Aquatic Consulting and Testing Inc) that manages the algae and aquatic macrophytes via periodic application of herbicides. Prior to 2016, the lake was known to have very good water quality. In February 2016, the lake was confirmed to have Golden Algae *Prymnesium parvum* following a partial fish kill. While the lake still has very good water quality, the presence of Golden Algae will henceforth pose threats to the fishery due to its ability to produce toxin that kills fish and other gill breathing animals.

## Forage/Prey

Very little data has been collected by the Department on forage or prey species assemblage from Veteran's Oasis Lake since construction in 2008. Based on stocking records as well as observations, the lake is known to harbor Fathead Minnow *Pimephales promelas* as well as Bluegill and Redear Sunfish.

## Habitat

The lake was designed with abundant piles of large and mid-size cobble and an aeration system. Emergent aquatic vegetation has grown in significantly around the perimeter of the lake since construction. As mentioned above, the City has a lake management consultant to monitor and control aquatic plants and algae, which are rarely problematic. Water quality and clarity is usually good or excellent at the lake. The lake has a somewhat natural shoreline around the east and south shores, and concrete edges on the west and north. The naturalized shoreline is extremely popular to anglers who prefer fishing in a more natural setting.

## Access

Access to Veterans Oasis is via the park off Chandler Heights Road on the south side of the lake. Access to fishing along the shoreline is generally good and unrestricted. There are no boat ramps on the lake and the park posts open times from 6am to 10:30pm, but park gates usually remain open 24 hours per day, so public access at this lake is very generous. There are walking trails all the way around the lake.

## Species

No data has been collected on fish species assemblage from Veterans Oasis since it was constructed. 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*. Data from the 2015 angler creel survey indicate that anglers are targeting

any fish most frequently, 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 lake consultant likely has stocked White Amur to control aquatic vegetation.

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.

*Invasive Species*

There are no confirmed records of aquatic invasive species at Veterans Oasis. The risk however, remains high because of its intensive public use. Golden Algae was detected in the lake in February 2016 following a minor fish kill.

## 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/hr. Veterans Oasis had an overall CPUE of 0.39 in 2010, and AUD of 27,700. In 2013 a Department survey estimated AUD's at Veterans Oasis to be at 151,705 based on license sales, which is likely an extreme overestimate. In 2015, angler catch rate was 0.25 fish/hr and AUD's had decreased to 25,600 (Arizona Game and Fish Department 2017).

Target species are usually the species being stocked, depending upon the time of year. Within the Community Fishing Program, Veteran's Oasis was once in the top 5 most heavily used waters in the program, but in 2015 angler use had decreased to 14$^{th}$ place overall.

## Satisfaction

Angler satisfaction is of paramount importance to the Department. We measure angler satisfaction 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. In 2010 median angler satisfaction was 8 out of 10, with 95% of anglers giving a satisfactory score.

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 Veteran's Oasis Lake as measured by creel surveys. AUD = Angler user day.

| | Catch Rate Overall | Catch Rate RBT | Catch Rate CCF | Angler Satisfaction Median Score | Angler Satisfaction % Giving 6-10 | AUD's |
|---|---|---|---|---|---|---|
| VO 2010 | 0.39 | 0.69 | .35 | 8 | 95 | 27,700 |
| VO 2015 | 0.25 | NA | NA | 9 | 95 | 25,600 |