

NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS
F-20-52
2016

URBAN FISHERIES
WESTERN REGION



**NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION
ANNUAL PROJECT REPORT**

Table of Contents

<u>Contents</u>	<u>Page</u>
SUMMARY	1
BACKGROUND	1
OBJECTIVES	1
PROCEDURES	2
FINDINGS	3
MANAGEMENT REVIEW	17
RECOMMENDATIONS	2121

NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION ANNUAL PROJECT REPORT

State: *Nevada*
Project Title: *Statewide Fisheries Program*
Job Title: *Western Region Urban Fisheries*
Period Covered: *January 1, 2016 through December 31, 2016*

SUMMARY

With a much needed near average winter in 2015/2016 and relief from a historic four-year drought, the Region's urban fisheries performed well in 2016 and continued to provide easy-to-access fishing for local anglers. Management is typically dependent on annual stocking programs that primarily encourage use in the spring and fall when water temperatures are favorable for trout and angling.

BACKGROUND

As the State of Nevada grows, its population continues to become increasingly urbanized. Urban sprawl is making it more difficult for people to find fishing opportunities near town. In addition, changing family dynamics is resulting in fewer children being exposed to the sport of fishing. Nevada's urban ponds are an invaluable means of providing angling opportunities to people living in an urban setting. Nevada currently has 18 urban fisheries throughout the State, which account for nearly 87,000 angler days per year.

Urban pond fisheries management includes meeting angler-approved goals, recruiting anglers, providing facilities for free-fishing day events and fishing clinics, providing stocking programs that support diverse sport fisheries (coldwater and warmwater), and providing effective and timely outreach to anglers regarding fishing opportunities. The Urban Pond Fisheries Management Concept specifies angler success rates of 0.25 to 0.75 fish per hour and 1.0 to 2.0 fish per angler day.

OBJECTIVES

- Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data.
- Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use.
- As part of the annual stocking program, 4,000 channel catfish will be stocked in each of Paradise Ponds, Virginia Lake (City of Reno), Mitch Park Pond (Town of Gardnerville), Sparks Marina (City of Sparks), and Liberty Pond (Churchill County Parks and Recreation). Mitch Park Pond may receive 500 largemouth bass and 1,000 bluegill.
- Conduct an electroshocking survey at Sparks Marina Reservoir for one night in late spring/early summer to determine species composition and abundance.

- Monitor tui chub populations through minnow trapping and visual encounter surveys on at least three occasions during summer and fall in Rose Creek Reservoir following stocking of tiger trout.

PROCEDURES

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. Unscheduled visits were made to various urban fisheries throughout the year for collecting creel survey data. Information on angler harvest, effort, and origin were recorded. Harvested fish were measured to fork length in millimeters. Opportunistic angler surveys occurred primarily during other scheduled work at or when nearby the ponds.

Angler use and success were assessed through the Mail-in Angler Questionnaire Survey conducted in 2015. Angler questionnaire data was derived from a survey mailed to 30,000 license purchasers.

Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division to coincide with angler fishing clinics. Annual stocking programs and schedules were provided to Headquarters and hatchery personnel in the spring of 2016. Prior to scheduled trout stocking and during the course of other duties, trips were made to the urban fisheries to visually ascertain water levels and measure water temperatures. As water levels, habitat conditions, and angler use fluctuated, stocking programs were altered as needed.

As part of the annual stocking program, 4,000 channel catfish will be stocked in each of Paradise Ponds, Virginia Lake (City of Reno), Mitch Park Pond (Town of Gardnerville), Sparks Marina (City of Sparks), and Liberty Pond (Churchill County Parks and Recreation) if available. If available, Mitch Park Pond may receive 500 largemouth bass and 1,000 bluegill. Channel catfish were purchased from Colorado Catch, LLC in Sanford, Colorado and stocked in Paradise Ponds, and Mitch Park Pond. Liberty Pond, Virginia Lake, and Sparks Marina did not receive any catfish in 2016 due to water quality concerns.

Conduct an electroshocking survey on Sparks Marina Reservoir for one night in the late spring/early summer to determine species composition and abundance. Electroshocking surveys were conducted utilizing an 18 foot, Smith Root electroshocking boat outfitted with a Smith-Root generator powered electroshocker. The boat served as the ground and the anode consisted of two electrode arrays, one at each corner at the bow. Each electrode array consisted of six stainless steel electrode droppers. One to three netters operated at the bow of the boat while one person maneuvered the boat. On September 13, five transects were completed in littoral habitat that contained mainly rock and bulrush habitats. See a map portraying transect locations in Attachment 1. During the survey, fish were placed into a live well that was supplied with fresh water and dissolved oxygen. At the conclusion of each transect,

each fish was identified to species, measured in millimeters to fork length, and released unharmed.

Monitor tui chub populations through minnow trapping and visual encounter surveys on at least three occasions during summer and fall in Rose Creek Reservoir following stocking of tiger trout. Tui chub population was monitored on April 12 and April 27. Twenty baited minnow traps were set around the shore in approximately one to four feet of depth and allowed to sit for four hours. Fish captured were measured to the nearest millimeter and released back into the reservoir. A visual survey consisted of walking the shoreline and tallying all fish observed. Three laps around the reservoir were completed and the number of fish observed was recorded.

FINDINGS

Baily Pond (Carson City)

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. The mail-in angler questionnaire estimated use at 493 anglers and 2,127 angler-days in 2015. Total catch was 5,332 fish and the success rate was 2.51 fish per angler-day. Baily Pond continued to be very popular among anglers during 2016.

Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division to coincide with angler fishing clinics. Water conditions for Baily Pond were suitable for trout stocking and occurred monthly between February and November (Table 1). Coordination occurred between Conservation Education Division and Mason Valley Fish Hatchery for providing fish during clinics and events. The stocking history is shown in Table 2.

Davis Creek Pond (Washoe Co.)

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. With a near average winter in 2015/2016, Davis Creek Pond retained water for longer into the summer than it had during the past four years. Mail-in angler questionnaire data estimated use at 74 anglers and 130 angler use days in 2015, both of which were more than double the numbers reported in 2014. This increase was due to the pond having water and being stocked in 2015, the pond was dry in 2014 and not stocked.

Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division to coincide with angler fishing clinics. Conditions at Davis Creek Pond were favorable up until mid-June in 2016. The pond was stocked six times and received 3,049 catchable rainbow trout (Table 3).

Table 1. Baily Fishing Pond Stocking Summary – 2016.

Date	Species	Number	Size	Strain
2/16/2016	RB	803	9.5	SHASTA
2/26/2016	RB	575	10.3	SHASTA
3/18/2016	RB	506	10.3	SHASTA
4/7/2016	RB	606	9.4	EAGLE LAKE
4/22/2016	RB	530	9.4	EAGLE LAKE
5/5/2016	RB	1,015	9.8	EAGLE LAKE
5/19/2016	RB	340	9	EAGLE LAKE
6/9/2016	RB	398	8.8	ERWIN-ARLEE
9/23/2016	RB	525	8.9	TRIPLOID
9/30/2016	RB	508	10.4	ERWIN/ARLEE
10/17/2016	RB	505	11	ERWIN/ARLEE
11/4/2016	RB	536	9.8	TAHOE
Total		6,847	8.8-11	

Table 2. Baily Fishing Pond Stocking History 2010 – 2015.

Year	Species	Number	Size Range
2015	Rainbow	6,359	9.3-11.5
2014	Rainbow	7,751	9.3-10.3
	Bowcutt	1,755	9.2-9.8
2013	Rainbow	7,654	9.8-11.5
	Brown	202	10.1
2012	Rainbow	6,313	9.7-11.5
	Brown	500	10.4
	Rainbow	150	17
2011	Rainbow	9,004	9.6-11
	Brown	1,073	10.8-11.2
	Rainbow	220	14
2010	Rainbow	3,404	10.1-11
	Bowcutt	1,507	9.7-10.9

Table 3. Davis Creek Pond Stocking -2016.

Water	Species	Strain	Number	Size (in.)	Date
DAVIS CREEK PARK POND	RB	SHASTA	518	10.3	3/18/2016
DAVIS CREEK PARK POND	RB	EAGLE LAKE	471	9.8	4/6/2016
DAVIS CREEK PARK POND	RB	EAGLE LAKE	745	9.9	4/18/2016
DAVIS CREEK PARK POND	RB	EAGLE LAKE	518	9.3	5/13/2016
DAVIS CREEK PARK POND	RB	EAGLE LAKE	399	9.6	5/27/2016
DAVIS CREEK PARK POND	RB	ERWIN-ARLEE	398	8.8	6/9/2016
TOTAL FISH (ALL)			3049		

Idlewild Pond (Washoe Co.)

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. Mail-in angler questionnaire data estimated use of three anglers and three angler use days in 2015. These extremely low use numbers were expected as the pond was never stocked in 2015 and was void of water for majority of the year.

Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division to coincide with angler fishing clinics. Idlewild Pond was stocked on one occasion in 2016. The pond received 1,012 catchable rainbow trout on June 8 to coincide with an educational event at the pond. Soon thereafter, the pond receded and stocking was no longer possible.

Lampe Park Pond (Douglas Co.)

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. Mail-in angler questionnaire data for 2014 and 2015 estimated no use. However, an annual kids fishing derby took place during both years. No derby occurred in 2016.

Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division to coincide with angler fishing clinics. Water quality and habitat were not adequate for trout stocking during 2016. Historical stocking is shown in Table 4.

Liberty Pond (Churchill Co.)

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. The mail-in angler questionnaire estimated use at 65 anglers in 2015, which is a three year low. Total catch was 506 fish, which was also a three year low. The success rate was 1.19 fish per angler-day, slightly down from 1.43 in 2014 and 1.94 in 2013. Liberty pond receives water through a nearby irrigation canal which has been only been used briefly during the spring due to the low reservoir storage levels at Lahontan and short irrigation season, therefore stocking opportunities have been limited during the current four year drought.

Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division to coincide with angler fishing clinics. Water quality and fish habitat were adequate for trout stocking and fish were planted in April and May (Table 5). Fall trout stocking did not occur as water levels decreased during summer, however, channel catfish were stocked during late May. Generally, the water level declines in winter and the pond refills once the irrigation season begins by April 1. Historical stocking is presented in Table 6.

Table 4. Lampe Park Pond Stocking History 2008 – 2015.

Year	Species	Number	Size Range
2015	Rainbow	2,670	9.9
2014	Rainbow	4,073	10.1
2013	Rainbow	4,000	10.5
2012		0	
2011		0	
2010	Rainbow	4,000	10.7
	Tiger Trout	153	11.8
2009	Rainbow	1,800	11.9
2008	Rainbow	5,491	9.0 - 11.3

Table 5. Liberty Pond Stocking Summary – 2016.

Date	Species	Number	Size	Strain
4/26/2016	Rainbow	513	9.5	Eagle Lake
5/11/2016	Rainbow	539	9.3	Eagle Lake
5/26/2016	Channel catfish	500	6	Colorado Catch

Table 6. Liberty Pond Historical Stocking.

Year	Species	Number	Size Range
2015	Rainbow	497	10.5
2014	Rainbow	3,005	9.3-10.1
2013	Rainbow	5,468	9.6-10.8
	Brown	950	8.8-10.3
	Channel Catfish	1000	4
2012	Rainbow	8072	9.7-10.3
	Brown	1000	10.5
2011	Rainbow	5002	10.0-10.8
	Channel Catfish	1000	5
2010	Rainbow	3847	9.5-10.0
	Brown	1005	9.8
	Tiger Trout	650	11.8
	Channel Catfish	675	7
	Bowcutt	2008	9.5-9.7

Marilyn's Pond (Washoe Co.)

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. The mail-in angler questionnaire estimated use at 923 anglers and 3,999 angler use days in 2015, which are the highest estimates since 2012. Anglers caught 12,854 fish resulting in a catch rate of 3.2 fish per angler-day, which was in line with the 12-year average of 3.1 fish per angler day.

Marilyn's Pond is an easy-to-access fishery within minutes of Reno and is extremely popular. The pond is fed by a natural spring and this constant source of cool water provides for a productive fishery, even as the drought persists. The presence of a self-sustaining brook trout population also adds to the productivity of the fishery.

Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division to coincide with angler fishing clinics. The water level at Marilyn's Pond remained at capacity throughout the year and its proximity to a constant, cool source of inflow from Galena Creek provides healthy water quality for a trout fishery. From March 18 through August 28, 6,370 catchable rainbow trout were stocked (Table 7). Since 2009, annual stocking has fluctuated between 5,000 and 8,000 rainbow trout.

Table 7. Marilyn's Pond Stocking Summary – 2016.

Water	Species	Strain	Number	Size (in.)	Date
MARILYN'S POND	RB	SHASTA	518	10.3	3/18/2016
MARILYN'S POND	RB	EAGLE LAKE	538	9.8	4/6/2016
MARILYN'S POND	RB	EAGLE LAKE	745	9.9	4/18/2016
MARILYN'S POND	RB	EAGLE LAKE	508	9.3	5/10/2016
MARILYN'S POND	RB	EAGLE LAKE	508	9.6	5/27/2016
MARILYN'S POND	RB	ERWIN-ARLEE	398	8.8	6/9/2016
MARILYN'S POND	RB	TAHOE	519	8.8	7/6/2016
MARILYN'S POND	RB	TRIPLOID	516	9	7/29/2016
MARILYN'S POND	RB	TAHOE	521	9	8/12/2016
MARILYN'S POND	RB	Erwin-Arlee	512	9.9	8/26/2016
MARILYN'S POND	RB	TRIPLOID	590	9.5	9/15/2016
MARILYN'S POND	RB	Erwin-Arlee	497	10.4	9/28/2016
TOTAL FISH (ALL)			6370		

Martin Slough (Douglas Co.)

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. The mail-in angler questionnaire estimated 12 anglers fished in 2015. Total catch was eight fish and the success rate was 0.38 fish per angler-day. The mail-in angler questionnaire estimates angler use by expanding statistics and it may not be accurate for waters that receive low angler use or low reporting (only two anglers responded to the questionnaire during 2015).

Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division to coincide with angler fishing clinics. The water level at Martin Slough was influenced by water flow coming from the East Carson River. The pond was stocked during March, April, and May (Table 8) while water temperatures from the Carson River were adequate. The history of stocking is presented in Table 9.

Table 8. Martin Slough Stocking Summary – 2016.

Date	Species	Number	Size	Strain
3/18/2016	Rainbow	483	10.3	SHASTA
4/7/2016	Rainbow	479	9.2	EAGLE LAKE
5/5/2016	Rainbow	494	9.8	EAGLE LAKE
5/27/2016	Rainbow	399	9.6	EAGLE LAKE
	Total	1855	9.2-10.3	

Table 9. Martin Slough Stocking History 2008 – 2015.

Year	Species	Number	Size Range
2015	Rainbow	934	8.4-9.9
2014	Rainbow	2,258	9.3-10
2013	Rainbow	1529	10.4-10.6
2012		0	
2011	Rainbow	2093	10.1-11.0
2010	Rainbow	2608	9.3-10.2
2009	Rainbow	996	9.9-11.7
2008	Rainbow	3064	9.7-10.8
	Channel Catfish	242	14

Mountain View Pond (Lyon Co.)

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. The 2015 mail-in angler questionnaire estimated 17 anglers spent 39 days fishing and caught 145 fish for a success rate of 3.7 fish per angler-day. The mail-in angler questionnaire estimates angler use by expanding statistics and may not be accurate for waters that receive low angler use or low reporting (only four anglers responded to the questionnaire during 2015). By comparison, during 2012, 124 anglers spent 878 days fishing to catch 771 fish for a success rate of 0.88 fish per angler-day.

Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division to coincide with angler fishing clinics. Trout stocking was limited to the spring and fall (Table 10) since water temperatures were outside trout tolerances most other times of the year. Historical stocking is presented in Table 11.

Paradise Pond (Washoe Co.)

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. The mail-in angler questionnaire estimated use at 143 anglers and 646 angler-days in 2015. Both estimates are lower than the 2014 estimates and may be a function of extremely low water conditions. An estimated 147 fish were caught resulting in 0.2 fish per angler day.

Table 10. Mountain View Park Pond Stocking Summary – 2016.

Date	Species	Number	Size	Strain
3/10/2016	Rainbow	389	10.4	SHASTA
3/25/2016	Rainbow	462	9.5	EAGLE LAKE
4/10/2016	Rainbow	324	10.5	EAGLE LAKE
4/29/2016	Rainbow	311	9.3	EAGLE LAKE
5/11/2016	Rainbow	308	9.3	EAGLE LAKE
9/16/2016	Rainbow	325	9.5	TRIPLOID
10/17/2016	Rainbow	187	11	ERWIN/ARLEE
10/27/2016	Rainbow	215	9.6	ERWIN/ARLEE
Total		2,521		

Table 11. Mountain View Pond Stocking History.

Year	Species	Number	Size Range
2015	Rainbow	2,343	8.4-10.5
	Cuttbow	615	10.1
2014	Rainbow	1,256	9.3-10.3
2013	Rainbow	2,012	9.7-10.6
2012	Rainbow	1223	10.0-10.4
2011	Rainbow	1678	10.0-11.0
2010	Rainbow	1395	9.5-10.0
2009	Rainbow	2286	9.8-12.0
2008	Rainbow	2275	8.9-9.7
	Bowcutt	286	12

Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division to coincide with angler fishing clinics. Water conditions at Paradise Pond in 2016 were much improved from 2015 and allowed for several stocking events. The pond received 2,532 catchable rainbow trout and 5,169 sub-catchable channel catfish in 2016 (Table 12) from February to April.

Table 12. Paradise Pond Stocking Summary – 2016.

Water	Species	Strain	Number	Size (in.)	Date
PARADISE POND	RB	SHASTA	803	9.5	2/16/2016
PARADISE POND	RB	SHASTA	230	10.3	3/18/2016
PARADISE POND	RB	EAGLE LAKE	493	9.3	5/10/2016
PARADISE POND	CC	Channel Cat	5169	5.0	5/26/2016
PARADISE POND	RB	Erwin-Arlee	1006	10.4	9/28/2016
TOTAL FISH (ALL)			7701		

Rancho San Rafael Pond (Washoe Co.)

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. The mail-in angler questionnaire estimated use at three anglers and three angler days in 2015. Since only 30,000 license holders receive this survey, it is common for small urban fisheries such as this to go unreported. While little use was documented, it is believed that numerous anglers utilized Rancho San Rafael Pond during 2015.

Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division to coincide with angler fishing clinics. Habitat and water conditions were conducive for stocking 345 Shasta-strain rainbow trout in March (Table 13). Historical stocking is presented in (Table 14).

Table 13. Rancho San Rafael Pond Stocking Summary – 2016.

Water	Species	Strain	Number	Size (in.)	Date
RANCHO SAN RAFAEL POND	RB	SHASTA	345	10.3	3/18/2016

Table 14. Rancho San Rafael Pond Stocking History 2010 – 2015.

Year	Species	Number	Size Range (in.)
2010	Rainbow	1,007	9.4
2010 Total		1,007	
2011	Rainbow	1,000	10.2
2011 Total		1,000	
2012	Rainbow	385	10.4
2012 Total		385	
2013	Rainbow	310	9.9
2013 Total		310	
2014	Rainbow	586	9.1
2014 Total		586	
2015	Rainbow	603	9.1
2015 Total		603	
Total		3,891	

Rose Creek Reservoir (Hawthorne)

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. The mail-in angler questionnaire estimated use at 34 anglers and 65 angler-days in 2015. Total catch was 102 fish and the success rate was 1.58 fish per angler-day. This was the first year Rose Creek was open to the public since the late 1980's. During 2016, Rose creek remained popular, proving to be a good addition to the Urban Fisheries program. The Hawthorne Army Depot controls access to the area and as part of the negotiated fishing program, all

anglers are required to report their catch at the end of each fishing day. During 2016, the HAWD reported 129 persons visited the pond and 104 trout were caught. Numbers of anglers and fish caught were not recorded on the “opening weekend”; however, anecdotal information indicated the angler use and the fish caught were good.

Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division to coincide with angler fishing clinics. Water conditions at Rose Creek Reservoir were suitable for trout stocking and occurred on April 27, 2016 (Table 15). Coordination occurred between HAWD and Mason Valley Fish Hatchery for providing fish prior to the “fishing opener” on May 1, 2016. The recent stocking history is shown in Table 16.

Table 15. Rose Creek Reservoir Stocking Summary – 2016.

Date	Species	Strain	Number	Size
4/27/2016	Tiger Trout	TIGER	99	9.2
		Total	99	

Table 16. Rose Creek Reservoir Historical Stocking

Year	Species	Number	Size Range
2015	Tiger Trout	565	10

Sparks Marina Pond (Washoe Co.)

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. The mail-in angler questionnaire estimated use at 716 anglers and 6,291 angler-days in 2015, the lowest on record since the inception of the fishery in 1999. An expanded estimate of 21,006 fish was caught resulting in a catch rate of 3.3 fish per angler-day, almost triple of the 16-year average for the water. While fewer people reported fishing in 2015, the ones that did benefitted from high catch rates. Despite another reported die-off during the winter of 2014/2015, the Sparks Marina continues to be a productive coldwater, put-and-take fishery with a limited amount of carryover.

Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Sparks Marina Park Pond remained at full capacity throughout 2016 and the surface water temperature and water quality were conducive for stocking most of the year outside of July and August. A total of 21,531 catchable rainbow trout were stocked on seven occasions in 2016 (Table 17). Historical stocking is presented in Table 18.

Table 17. Sparks Marina Park Pond Stocking Summary – 2016.

Water	Species	Strain	Number	Size (in.)	Date
SPARKS MARINA PARK	RB	EAGLE LAKE	3902	9.5	2/17/2016
SPARKS MARINA PARK	RB	SHASTA	1168	9.5	2/17/2016
SPARKS MARINA PARK	RB	EAGLE LAKE	1521	10.1	4/13/2016
SPARKS MARINA PARK	RB	EAGLE LAKE	4449	9.6	6/8/2016
SPARKS MARINA PARK	RB	ERWIN-ARLEE	1980	10.1	6/8/2016
SPARKS MARINA PARK	RB	TRIPLOID	4260	9.4	9/9/2016
SPARKS MARINA PARK	RB	TRIPLOID	4251	9.4	10/7/2016
TOTAL FISH (ALL)			21531		

Table 18. Sparks Marina Park Pond Stocking History 2010 – 2015.

Year	Species	Number	Size Range (in.)
2010	Rainbow	27,791	10
	Tiger	497	11.8
	Brown	2,998	9.7
2010 Total		31,286	
2011	Rainbow	18,536	10.0 – 10.5
	Bowcutt	4,034	10
	Brown	3,000	9.8 – 10.6
	Channel Catfish	2,000	5
2011 Total		27,570	
2012	Rainbow	24,553	9.8 – 10.8
	Brown	3,001	10.0 – 10.2
2012 Total		27,553	
2013	Rainbow	45,917	4.4 - 10.9
	Brown	7,681	5.9 - 9.0
	Channel Catfish	4,000	5
2013 Total		57,598	
2014	Rainbow	43,740	9.8 – 10.8
2014 Total		43,740	
2015	Rainbow	22,583	9.8 – 10.8
2015 Total		22,583	
Total (All Fish)		210,330	

Virginia Lake (Washoe Co.)

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. The mail-in angler questionnaire estimated use at two anglers and 10 angler-days in 2015, the lowest on record since 1980. As with other urban fisheries, since only 30,000 license holders receive this survey, it is common for urban fisheries such as this to go unreported. Another factor

that may have limited anglers was a water quality improvement project. The lake level was lowered in the later part of the summer and it did not fill until mid-winter.

Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division to coincide with angler fishing clinics. For the second consecutive year, Virginia Lake was not stocked.

Virginia Lake is currently undergoing water quality improvements with help from numerous agencies in the region. There are several components ranging from monitoring and evaluation to construction and redesign of the lake. The primary goal is to improve the water quality. During the summer of 2016, the Nevada Department of Wildlife installed a number of artificial habitat structures in areas of the lake that would provide the most protection from avian predators. Combining this with the water quality improvements, it should help to extend the duration of time that stocked fish survive in Virginia Lake. Stocking should return to a more normal routine in 2017.

Wilson Common Pond (Washoe Co.)

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. The mail-in angler questionnaire estimated use at 401 anglers and 2,162 angler days in 2015, which was an increase from 2014 estimates. An estimated 2,045 fish were caught resulting in 1.0 fish per angler day; this is lower than the 19-year average of 2.0 fish per angler day.

Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division to coincide with angler fishing clinics. The water elevation remained at or near capacity throughout 2016 and not including the warmest periods of summer, the fishery was productive. A total of 4,134 catchable rainbow trout of various strains were stocked on nine occasions from February through September (Table 19). Historical stocking is presented in Table 20.

Table 19. Wilson Common Park Pond Stocking Summary – 2016.

Water	Species	Strain	Number	Size (in.)	Date
WILSON COMMON PARK POND	RB	SHASTA	511	9.5	2/16/2016
WILSON COMMON PARK POND	RB	SHASTA	345	10.3	2/26/2016
WILSON COMMON PARK POND	RB	EAGLE LAKE	538	9.8	3/31/2016
WILSON COMMON PARK POND	RB	EAGLE LAKE	501	9.9	4/18/2016
WILSON COMMON PARK POND	RB	EAGLE LAKE	518	9.3	5/13/2016
WILSON COMMON PARK POND	RB	EAGLE LAKE	301	9.6	5/27/2016
WILSON COMMON PARK POND	RB	ERWIN-ARLEE	398	8.8	6/9/2016
WILSON COMMON PARK POND	RB	TRIPLOID	525	8.9	9/23/2016
WILSON COMMON PARK POND	RB	ERWIN/ARLEE	497	10.4	9/30/2016
TOTAL FISH (ALL)			4134		

Table 20. Wilson Common Park Pond Stocking History 2010 – 2015.

Year	Species	Number	Size Range (in.)
2010	Rainbow	5,959	10.1
	Tiger	166	12
2010 Total		6,125	
2011	Rainbow	5,406	9.6 – 10.5
	Brown	400	10.8
2011 Total		5,806	
2012 ²	Rainbow	4,002	9.0 – 10.6
2012 Total		4,002	
2013	Rainbow	3,279	9.4 – 10.8
2013 Total		3,279	
2014	Rainbow	3,073	9.6 - 10.3
2014 Total		3,073	
2015	Rainbow	4,969	9.0 - 12.0
2015 Total		4,969	
Total		27,254	

Verdi Pond/Crystal Peak Park Pond (Washoe Co.)

Conduct a general fisheries assessment through opportunistic angler contacts and mail-in angler questionnaire data. The mail-in angler questionnaire estimated use at 899 anglers and 4,667 angler days in 2015. An estimated 14,238 fish were caught resulting in a catch rate of 3.1 fish per angler day, the highest on record since the fishery opened in 2012.

Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division to coincide with angler fishing clinics. The pond level remained at or near capacity throughout 2016 and a cooler than average summer allowed for stocking most of the year. A total of 12,890 catchable trout consisting of 10,952 Pilot Peak strain LCT and 1,938 triploid rainbow trout were stocked. All Pilot Peak strain LCT originated from Lahontan National Fish Hatchery (LNFH) under agreement with NDOW for urban fishing opportunities. For the second consecutive year, a shortage of available fish from LNFH resulted in stocking additional rainbow trout.

All Western Region Urban Ponds

Evaluate annual stocking recommendations based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division fishing clinics. When appropriate, enhance, and/or augment existing warmwater fish populations. Annual stocking programs were evaluated and recommendations were made in early spring.

Table 21. Verdi Pond Stocking Summary – 2016.

Water	Species	Strain	Number	Size (in.)	Date
CRYSTAL PEAK PARK POND	CT	PILOT PEAK	1500	9.0	3/4/2016
CRYSTAL PEAK PARK POND	CT	PILOT PEAK	1576	9.1	3/10/2016
CRYSTAL PEAK PARK POND	CT	PILOT PEAK	1500	9.3	3/24/2016
CRYSTAL PEAK PARK POND	CT	PILOT PEAK	1500	8.7	4/12/2016
CRYSTAL PEAK PARK POND	CT	PILOT PEAK	1500	9.3	5/3/2016
CRYSTAL PEAK PARK POND	CT	PILOT PEAK	3376	9.5	5/16/2016
CRYSTAL PEAK PARK POND	RB	ERWIN-ARLEE	209	8.9	6/8/2016
CRYSTAL PEAK PARK POND	RB	TRIPLOID	254	9.2	7/14/2016
CRYSTAL PEAK PARK POND	RB	TRIPLOID	1475	9.5	9/15/2016
TOTAL FISH (ALL)			12890		

Table 22. Verdi Pond Stocking History – 2013 – 2015.

Year	Species	Number	Size Range (in.)
2013	LCT	11,932	8.7 - 11.2
	Brown	3,115	8.6 - 10.1
	Rainbow	7,736	9.7
2013 Total		22,783	
2014	LCT	13,199	8.3 - 11.3
2014 Total		13,199	
2015	LCT	7,848	7.5 - 9.8
	Rainbow	1,566	9.7 - 10.1
2015 Total		9,414	
Total		45,396	

As part of the annual stocking program, 4,000 channel catfish will be stocked in each of Sparks Marina (City of Sparks), Paradise Ponds (City of Reno), Mitch Park Pond (Town of Gardnerville), and Liberty Pond (Churchill County Parks and Recreation). Liberty Pond may also receive 500 largemouth bass, if available. Mitch Park Pond may receive 500 largemouth bass and 1,000 bluegill if available. Paradise Park Ponds received 5,169 sub-catchable channel catfish on May 26, 2016. It is expected these fish will survive for numerous years and reproduce to help augment the existing warmwater fishery. Sparks Marina did not receive channel catfish in 2016 due to the ongoing dissolved oxygen concerns and the associated winter die-offs. Mitch Park Pond and North Pond each received 1,000 channel catfish and Liberty pond received 500. Numbers of fish stocked were limited due to their availability and concerns of poor habitat conditions. Channel catfish stocked into North Pond are expected to survive and reproduce, however, fish stocked into Mitch Park and Liberty are expected to be caught and kept shortly after stocking. Largemouth bass and bluegill were not purchased or translocated during 2016.

Conduct an electrofishing survey on Sparks Marina Reservoir for one night in the late spring/early summer to determine species composition and abundance. For the third consecutive year, there was a mid-December report that dead fish were accumulating in the cove near the marina. This die off had the same characteristics of the 2014 and 2015 die offs but did not appear to be as extensive. The cause of these die offs has been determined to be oxygen depletion in the reservoir due to an unknown natural cause. Aeration and other possible treatment methods are being explored by the City of Sparks.

The electroshocking survey revealed several species of warmwater fish continued to occupy the reservoir after the winter fish kill along with a handful of carryover rainbow trout. Fish consisted of green sunfish (n=62), channel catfish (n=2), rainbow trout (n=5), Sacramento perch (n=2), and common carp (n=13). Table 23 presents specifics from the survey.

Table 23. 2016 Sparks Marina Pond Electrofishing Survey.

	Average Length (mm)	T1	T2	T3	T4	T5	Total
Carp	228	2	8	2	1	0	13
Sunfish	85	4	18	14	25	1	62
Ccat	600	1	0	0	0	1	2
RB	303	0	1	2	2	0	5
Perch	115	0	2	0	0	0	2
Total Fish				84			

The total number of fish captured during the 2016 electrofishing survey was down from 415 in 2015 to 84 in 2016. This can be attributed to a later survey date in 2016 (September 18). With the water temperature being warmer for a longer period, green sunfish that made up the majority of catch in 2015 (400 in 2015, 62 in 2016) appear to have moved into areas that were less accessible for surveying in 2016. All other species captured had maintained at the same abundances with no marked increases or decreases. The presence of carryover rainbow trout lends to the belief that the 2015 winter die off was not as severe as events in preceding years. Further monitoring of the fishery will help to assess the fishery's ability to rebuild. All warmwater species continue to reside in Sparks Marina Pond, and having a less severe die off this past winter, it is believe that the fish community will rebound. The winter of 2016 has yet to reveal any die off events in Sparks Marina Pond.

Monitor tui chub populations through minnow trapping and visual encounter surveys on at least three occasions during summer and fall in Rose Creek Reservoir following stocking of tiger trout. During 2015, 264 tui chub were captured in minnow traps, marked, and released. No fish were recaptured. During 2016, no juvenile tui chub were trapped. This is likely due to poor weather conditions during the time of the survey (several schools of tui chub were observed during visual surveys). The population estimate for fish greater than 30 mm and less than 130 mm was 17,664 individuals during 2015. Due to the lack of fish captured during 2016, no

estimate could be derived. The lack of recaptured fish during 2015 resulted in low confidence in the population estimate.

During 2015, four visual surveys around the lake found from 466 fish to 2,610 fish, during 2016 three surveys were conducted and the number of individuals ranged from 10 to 130. Young-of-the-year fish were present and four age classes were identified during visual surveys during 2015 and 2016.

MANAGEMENT REVIEW

Baily Pond

The completion of Baily Pond in 2010 was well received by residents of Carson City. Angler catch rates and fish per angler day remained high throughout 2016 and stocking occurred each month during the fishing season. Per an agreement with upstream water users, no warmwater species will be stocked into Baily Pond, however, green sunfish have been reported. Although they were likely introduced illegally, they are providing some panfish angling during the summer.

The installation of artificial habitat structures in 2016 should help hatchery trout avoid predation from large piscivorous birds (Attachment 2).

Davis Creek Pond

Angler success was limited to years when conditions allowed for stocking. Davis Creek Pond is managed as a put-and-take fishery since water conditions typically exceed what trout can tolerate in both winter (anchor ice) and summer (above 80°F). Although the pond provides limited angling opportunity, a considerable amount of use is realized in the spring when conditions permit.

Idlewild Pond

Due to increased sedimentation and siltation in recent years, Idlewild Pond complex is characterized by shallow depths resulting in increased summertime water temperatures. Additionally, abundant waterfowl produce a heavy nutrient load. The ponds provide limited fish habitat and do not warrant year round trout stocking. This pond has suffered from the ongoing drought in the region and some relief is needed before this popular urban fishery can return to pre-drought conditions. The ponds do provide a good setting for fishing activities and clinics conducted by NDOW's Conservation Education Division since stocking can be timed prior to events, which assures better success.

Lampe Park Pond

Observations confirmed the pond received little use, however, anglers were observed fishing during events in 2016. The water temperature during the summer

exceeded the trout tolerance level and fishing was only optimal during spring and early summer.

Liberty Pond

Liberty Pond remained very popular among anglers living in Fallon and use was high during spring following trout stocking. Typically, consistent fishing activity begins in early February and continues until October. The water level is controlled through an irrigation canal, however, the water level decreases throughout the winter. The irrigation season typically begins on April 1 and the pond level is quickly brought to capacity and is kept full throughout the summer. Occasional stocking of channel catfish occurs during the summer, which provides additional angling opportunity when trout stocking is not recommended due to warm water temperatures. Due to the very short irrigation season of 2015 and 2016, it was only filled once during each year. The pond met the goals of an urban fishery in 2016.

The installation of artificial habitat structures in 2016 should help juvenile warmwater species mature and avoid predation from larger piscivorous fish and birds (Attachment 2).

Martin Slough

Martin Slough met the management objectives of an urban fishery in 2016. Water temperature during the summer exceeded what trout can tolerate and fishing was only optimal during spring and early summer. Martin slough is reliant on river flow, which has been dismal the past few years. However, above average winter precipitation during late 2016 and early 2017 is expected to bring better than average flows during 2017 and benefit Martin Slough.

Marilyn's Pond

Marilyn's Pond is one of the most popular urban fisheries in the Reno area. Based on quality habitat and stocking management, it supports heavier angler use. Angler questionnaire data suggests the fishery is exceeding the guidelines of the Urban Fishery Management Concept. Due to its constant source of cool, oxygenated water, trout can be stocked throughout the summer and it additionally sustains a naturally propagated brook trout population. When other urban ponds in the area reach temperatures too high for stocking, Marilyn's Pond generally remains cool enough to allow fishing throughout the summer.

Mountain View Pond

Mountain View Pond is the only urban pond in Lyon County and continues to be popular among locals living in Yerington. Based on angler catch rates, the urban fishery is meeting the management objective. An annual kids fishing derby held there had intermittent success and the Yerington Lyons Club (derby sponsor) moved the derby to

Mason Valley Fish Hatchery (Kuenzli Pond) in 2010, which was expected to reduce fishing pressure at Mountain View Pond.

Verdi Ponds

This urban fishery is extremely popular with anglers in the Reno and Verdi areas and provides for a scenic place to recreate. Stocking is limited to spring and fall due to warm water temperatures during summer, but heavy use is realized when stocking occurs. The ponds also provide an educational benefit by having Lahontan cutthroat trout stocked from the Lahontan National Fish Hatchery Complex. The 3.1 fish per angler day reported from the mail-in angler questionnaire far exceeds that recommended under a Coldwater Urban Fishery Concept. Installation of artificial habitat structures in 2016 may help to improve the longevity of stocked fish in the lake by providing protective cover from avian predators (primarily cormorants) (Attachment 2).

Paradise Ponds

Due to the shallow depth and heavy load of organic matter in Paradise Ponds, the opportunity to stock trout is limited. Early spring stocking is generally best, but the pond only supports a coldwater fishery for a limited amount of time. Warmwater species appear to do well and anglers have expressed interest for continued channel catfish stocking. The 2016 stocking of channel catfish should benefit the warmwater fishery for the foreseeable future.

Rancho San Rafael Pond

Due to its shallow nature, increased summertime temperatures, and aquatic vegetation, Rancho San Rafael Pond offers limited fishing opportunity. Early spring stocking is generally best, which provides a productive fishery for a few months every year. Use of this fishery is limited and it may benefit from increased publicity close to stocking dates.

Rose Creek Reservoir

The new urban fishery has proven to be both successful and popular among Hawthorne residents. Unlike other urban fisheries, there is an “opening day” that is advertised locally and is a well-attended event. The Rose Creek Reservoir opener is not dictated by NDOW regulation, but rather vehicle access. Snow and moisture conditions along the only road into the reservoir are typically restrictive until May. Coordination with the Mason Valley Hatchery is imperative in order to stock fish as soon as possible during the spring. Tui chub have been reported in Cat Creek Reservoir, which is connected to Rose Creek Reservoir through a gravity-fed pipeline. It is likely that juvenile tui chub were able to make it through the screen and have now established in Cat Creek Reservoir.

Due to the potential reduction in tui chub numbers observed during 2016, artificial habitat structures have been installed to provide cover habitat for tui chub to avoid predation from larger piscivorous fish and increase habitat complexity in the concrete lined reservoir (Attachment 2).

Sparks Marina Park Pond

Three consecutive fish die-offs during winter have undoubtedly had a negative impact on this extremely popular urban fishery. At this point, the root cause of the die-offs is still unknown, but the Nevada Department of Wildlife is working cooperatively with the City of Sparks and the University of Nevada, Reno to determine the cause and to determine what can be done to alleviate it. The reservoir will continue to be managed as a put-and-take coldwater fishery with a warmwater component that appears to be self-supported.

In cooperation with the City of Sparks, the Sparks Rotary Club, and other local sponsors, Sparks Marina Pond provides an excellent backdrop for a Conservation Education Division event on Free Fishing Day that is the largest in the state.

The installation of artificial habitat structures in 2016 should help juvenile warmwater species mature and avoid predation from larger piscivorous fish (Attachment 2).

Virginia Lake

Virginia Lake continues to support a population of cormorants due to nesting habitat found on the island. Based on a variety of political components, the island has not been removed. As long as cormorants inhabit the area, trout will only be stocked from October to December. This management strategy allows trout to grow and acclimate over the winter, providing limited angling opportunity in spring prior to cormorant nesting. Installation of artificial habitat structures in 2016 may help to improve the longevity of stocked fish in the lake and provide protective cover for warmwater species (Attachment 2).

Wilson Commons

Wilson Commons provides a great urban fishery option for anglers who live in south Reno, Washoe Valley, and Carson City. The angler success rate is exceeding what is recommended under the Urban Fishery Management Concept. The stocking program appears to be consistent with angler use and no changes are proposed. The installation of artificial habitat in the pond should help to protect the stocked fish from avian predators and increase the time in which stocked fish survive in the pond (Attachment 2).

RECOMMENDATIONS

- Conduct a general assessment of angler use, success, and harvest through opportunistic angler contacts and mail-in angler questionnaire data.
- Coordinate trout stocking with the hatchery based on water levels, habitat conditions, and angler use. Coordinate stocking with Conservation Education Division for fishing clinics.
- Manage and/or develop new urban fisheries as opportunities arise.
- As part of the annual stocking program, 4,000 channel catfish will be stocked each in Sparks Marina (City of Sparks), Paradise Ponds (City of Reno), Martin Slough (Town of Minden), Liberty Pond (Churchill County Parks and Recreation), and Mitch Park Pond (Gardnerville Ranchos.)
- Conduct an electroshocking survey on Sparks Marina Reservoir for one night in the late spring/early summer to determine species composition and abundance.
- Monitor tui chub populations through minnow trapping and visual encounter surveys on at least three occasions during summer and fall in Rose Creek Reservoir and potentially Cat Creek reservoir.

Prepared By: Travis Hawks Kris Urquhart
Biologist III Biologist III
Western Region Western Region

Date: February 1, 2017

2015 Sparks Marina ElectroShocking Transects



FIELD TRIP REPORT

DATE: April, May, June, July, August.
TITLE: Urban Fishery Habitat Enhancement Project
FIELD PARTY: Travis Hawks, Kris Urquhart, Matt Kane, Darrin Miller, Kris Bragg

PREPARED BY: Travis Hawks, Kris Urquhart

OBJECTIVE

To improve the productiveness of the Region's urban fisheries by installing habitat structures that provide protective cover from avian and aquatic predators.

BACKGROUND

As the State of Nevada grows, its population continues to become increasingly urbanized. Urban sprawl is making it more difficult for people to find fishing opportunities near town. In addition, changing family dynamics is resulting in fewer children being exposed to the sport of fishing. Nevada's urban ponds are an invaluable means of providing angling opportunities to people living in an urban setting. Nevada currently has 18 urban fisheries throughout the State, which account for nearly 87,000 angler days per year.

Urban pond fisheries management includes meeting angler-approved goals, recruiting anglers, providing facilities for free-fishing day events and fishing clinics, providing stocking programs that support diverse sport fisheries (coldwater and warmwater), and providing effective and timely outreach to anglers regarding fishing opportunities.

Recent studies and anecdotal accounts show that carryover of stocked fish in urban fisheries is extremely limited. Lack of available food resources during certain times of the year, inability of hatchery raised trout to adapt to a new environment, and predation from avian and aquatic predators are factors that contribute to limited carryover. While food resource availability and adaptation are difficult to improve, providing protective cover from predation is a technique that has been successful in urban fisheries management.

PROCEDURES

In 2015 and 2016, the Nevada Department of Wildlife acquired funding through the Habitat Conservation Fee program for the Western Region Aquatic Habitat Development and Improvement Project and the Virginia Lake Fishery Improvement Project. These funding sources were used to purchase 72 artificial habitat structures for use in the Western Region Urban Fisheries Program. The structures, purchased from Mossback Fish Habitat, are made of nontoxic "scuffed" PVC trunks with composite limbs and simulate sunken trees or root structures that would be found in a natural environment. Three different types of structures were utilized consisting of Safe Havens (Figure 1), Root Wad 3 Posts, and Trophy Tree Kits. Product dimensions and

specifications are presented in Table 1.

Figure 1. Safe Haven Fish Habitat Structure.



Table 1. Mossback Habitat Specifications.

	Dimensions	Limbs	Number of Anchors
Safe Haven	50" x 50"	24	1
Root Wad 3 Post	25" x 50"	12	1
Trophy Tree Kit	50" x 50"-100"	36	2

All structures were constructed pond side and transported to the install locations with the use of a boat or existing docks. Suitable locations were chosen based on bathometric maps and then proofed using depth measuring devices. All structures were placed in at least six feet of water and not more than 15 ft in and targeted areas where all species were vulnerable to predation. These locations and depths also function as suitable spawning habitat for warmwater species producing offspring that will utilize the structures as well. Structures were submerged and anchored with a six-foot nylon coated, aircraft cable to either one or two cinder blocks. GPS locations were recorded for each structure for future monitoring. Maps of all locations and UTM coordinates are provided at the end of this report.

PROJECT DETAILS

Virginia Lake: Three habitat clusters were constructed for Virginia Lake. Each cluster consisted of five individual structures and the depths of the structures ranged from 9.0 to 11.5 ft. Deeper locations were chosen to allow for the water level fluctuations that become regular in Virginia Lake.

It is believed this habitat enhancement for Virginia Lake will benefit both the naturally reproducing warmwater species (channel catfish and largemouth bass) and hatchery-raised rainbow trout that are stocked occasionally in the spring and fall. These structures will provide much needed cover from the region's largest concentration of cormorants. Cormorants congregate on the man-made island that provides a suitable roosting site for the species.

Figure 2. Virginia Lake Habitat Structures.



Sparks Marina: A total of 23 individual habitat structures were placed around the perimeter of the Sparks Marina. Locations were chosen based on prior knowledge of warmwater species preferred spawning areas. Depths of structure locations varied from 7.0 to 12.0 ft. Several species of sport fish will benefit from the placement of these structures including rainbow trout, smallmouth bass, channel catfish, and Sacramento perch.

Crystal Peak Park Ponds: A total of 17 individual habitat structures were placed in the two ponds located within Crystal Peak Park. Only two structures were placed in the smaller pond due to the small area. Fifteen structures were placed in the larger of the two ponds and were placed in one large cluster. The depths ranged from 6.0 to 8.0 ft. These structures were installed to protect the hatchery raised rainbow trout and Lahontan cutthroat trout from avian predators.

Wilson Commons Park Pond: Six individual habitat structures were placed in Wilson Commons Park Pond. The structures were placed at depths ranging from 9.0 to

12.0 ft. Due to the small size of the pond and the possibility of anglers entangling fishing line in the structures, they were placed as far from the shore as possible. These structures will benefit hatchery-raised rainbow trout from cormorant predation.

Figure 3. Wilson Common Park Habitat Installation.



Rose Creek Reservoir: A total of six individual habitat structures were placed into the reservoir near the middle where suitable depth exists. These structures were installed to protect the Walker Lake tui chub from piscivorous fish and avian predators.

Liberty Pond: A total of two individual habitat structures were placed underneath the existing fishing dock where suitable depth exists and anglers are unlikely to get snagged during fishing. These structures were installed to protect the hatchery-raised trout from avian predators.

Baily Fishing Pond: A total of two individual habitat structures were placed underneath the existing fishing dock where suitable depth exists and anglers are unlikely to get snagged during fishing. These structures were installed to protect the hatchery-raised trout from avian predators.

Mitch Park Pond: A total of two individual habitat structures were placed against the existing concrete wall where suitable depth exists and anglers are less likely to get snagged during fishing. These structures were installed to protect the hatchery-raised trout from avian predators.

Figure 4. Rose Creek Reservoir Habitat Installation.



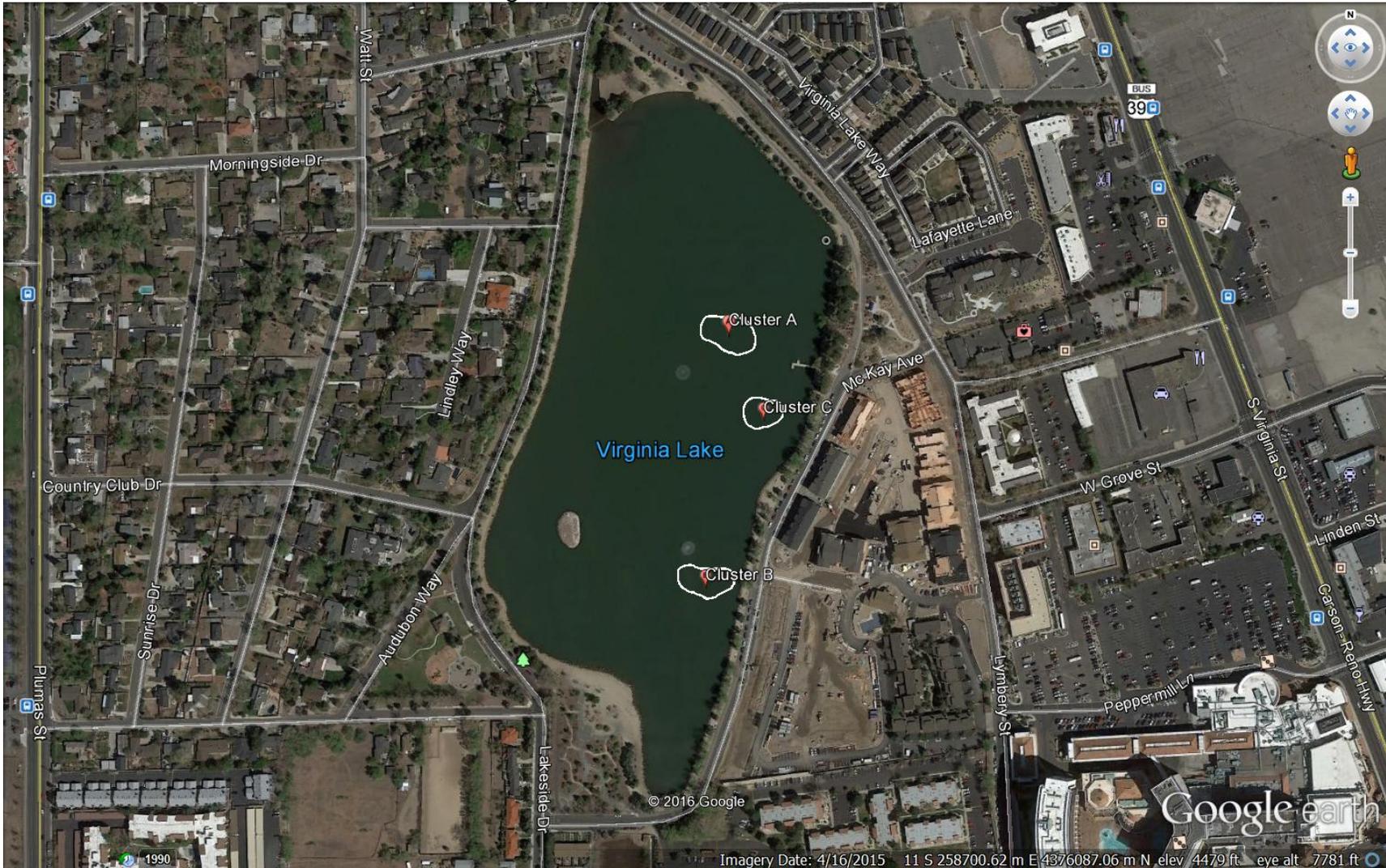
EVALUATION

The Urban Fishery Habitat Enhancement Project will benefit the anglers and fisheries of the Region and provide more opportunity for people who would otherwise be unable to enjoy Nevada's outdoor resources. The structures will be monitored for their effectiveness and use by different species.

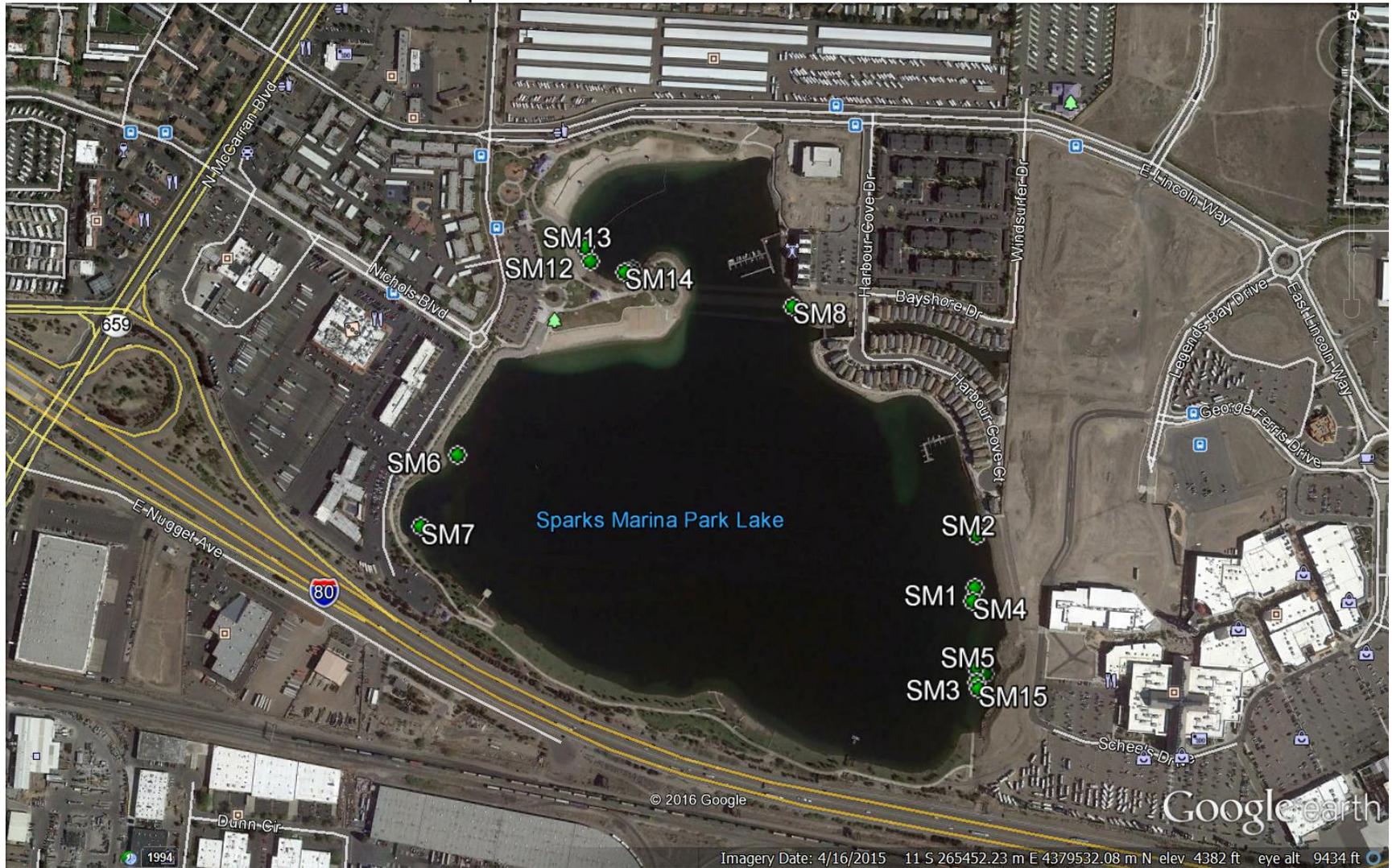
Figure 5. Green Sunfish Utilizing Habitat at Sparks Marina.



Virginia Lake Habitat Cluster Locations



Sparks Marina Habitat Structure Placement



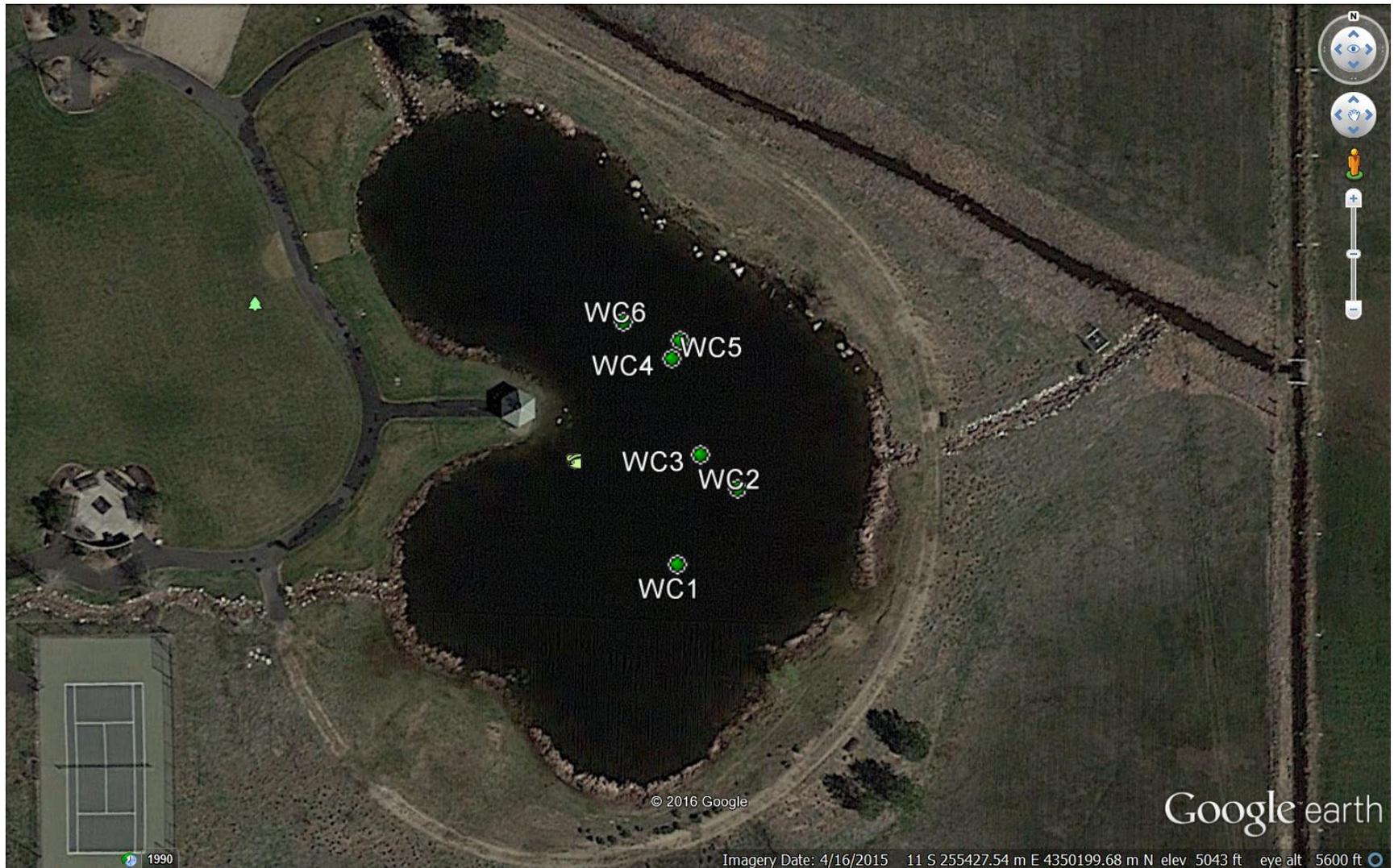
Crystal Peak Park Ponds Habitat Placement



Rose Creek Reservoir Habitat Placement



Wilson Commons Park Pond Habitat Placement



Baily Pond Habitat Structure Map



Liberty Pond Habitat Structure Map



Mitch Park Pond Habitat Structure Map



Attachment 2

UTM Coordinates for Urban Fishery Habitat Structures

Waypoint	Easting	Northing	Zone		Waypoint	Easting	Northing	Zone
Crystal Peak Park					Wilson Commons			
CP2	242499.4	4378345	11		WC1	255423.9	4350182	11
CP3	242473	4378359	11		WC2	255432.7	4350192	11
CP4	242488.4	4378379	11		WC3	255427.6	4350197	11
CP5	242483.1	4378380	11		WC4	255424	4350211	11
CP6	242499.1	4378359	11		WC5	255425.2	4350213	11
CP7	242505.5	4378357	11		WC6	255417.3	4350216	11
CP8	242499.5	4378348	11		Sparks Marina			
CP9	242490.4	4378357	11		SM9	265828.6	4379240	11
CP10	242491.3	4378356	11		SM8	265568.2	4379701	11
CP11	242482.5	4378361	11		SM7	265099.2	4379406	11
CP12	242481.7	4378363	11		SM6	265143.8	4379499	11
CP13	242474.1	4378360	11		SM5	265816.4	4379248	11
CP14	242477.7	4378361	11		SM4	265809.6	4379332	11
CP15	242471.9	4378364	11		SM3	265818	4379228	11
CP16	242473.9	4378363	11		SM2	265812.9	4379416	11
CP1a	242484.9	4378257	11		SM1	265812.1	4379349	11
CP1b	242480.5	4378259	11		SM10	265361.5	4379743	11
Virginia Lake					SM11	265358.3	4379739	11
C-05	258747.6	4376103	11		SM12	265306.8	4379751	11
C-04	258751.3	4376108	11		SM13	265299.7	4379769	11
C-03	258751.4	4376109	11		SM14	265351.3	4379738	11
C-02	258749.3	4376104	11		SM15	265820.3	4379220	11
C-01	258748.8	4376103	11		SM16	265820.3	4379233	11
B-05	258688.8	4375969	11		SM17	265821.2	4379243	11
B-04	258699.1	4375964	11		SM18	255423.9	4350182	11
B-03	258700	4375963	11		SM19	255432.7	4350192	11
B-02	258706.9	4375968	11		SM20	255427.6	4350197	11
B-01	258708.8	4375969	11		SM21	255424	4350211	11
A-05	258725	4376173	11		SM22	255425.2	4350213	11
A-04	258727.8	4376166	11		SM23	255417.3	4350216	11
A-03	258726.2	4376178	11					
A-02	258715.6	4376176	11					
A-01	258717.4	4376174	11					
Label	Water Body	Easting	Northing	Zone				
S-10	Baily Pond	260146.7	4333151	11				
S-11	Baily Pond	260147.2	4333143	11				
S-12	Mitch park	262886.3	4310086	11				
S-9	Mitch park	262889.3	4310079	11				
S-17	Liberty Pond (2)	346873.9	4368820	11				

Attachment 2

S-3	Rose Creek Res.	347756.1	4272534	11
S-4	Rose Creek Res.	347766.3	4272529	11
S-5	Rose Creek Res.	347774.6	4272522	11
S-6	Rose Creek Res.	347781	4272516	11
S-7	Rose Creek Res.	347790.3	4272514	11
S-8	Rose Creek Res.	347806.1	4272510	11