

NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE FISHERIES MANAGEMENT



FEDERAL AID JOB PROGRESS REPORTS

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2014

Mason Valley Wildlife Management Area Ponds

WESTERN REGION



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

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

State: *Nevada*
Project Title: *Statewide Fisheries Program*
Job Title: *Mason Valley Wildlife Management Area Ponds*
Period Covered: *January 1, 2014 through December 31, 2014*

SUMMARY

Hinkson Slough remained near or at full capacity throughout the year. Triploid grass carp grew substantially and aquatic vegetation has been visibly less since their introduction. Survival of stocked rainbow trout was low as summertime water temperatures and turbidity (partly due to a fluctuating common carp population) have increased during recent years. Anglers were satisfied with fishing at the Mason Valley Wildlife Management Area; Hinkson Slough received most of the angling pressure.

Angler use at North Pond increased from 2012 to 2014. Most bass reported by anglers were in the 11-14 in class and there were reports of rainbow trout larger than 14 in. Dense aquatic vegetation continued to interfere with angling from shore and boats. The angler satisfaction survey showed largemouth bass fishing was popular and fish larger than five pounds were reported anecdotally. An herbicide project was successful in reducing rooted aquatic vegetation through several of the deeper channels allowing more access for boats.

Fort Churchill Cooling Pond (FCCP) showed above average catch rates during 2014. The power plant that historically warmed the water throughout the winter was shut down and ice coverage has been significant (>50%) over the past three winters. In response to cooler pond temperatures, trout were stocked in the spring of 2013 and 2014 and anglers reported catching them for the first time this year.

A slot limit for largemouth bass went into effect in 2008. The new regulation was intended to protect bass in the 11 to 14 in range and allow harvest of smaller (<11 in) and larger ones (>14 in). The intent was to increase the number of largemouth bass reaching a larger harvestable size of 14 in; however, based on angler contacts, very few anglers chose to harvest fish under 11 in suggesting the slot regulation was not accomplishing its intended purpose. In addition, this regulation was unpopular and confusing to some anglers, so in September 2013, when the Nevada Board of Wildlife Commissioners was considering statewide fishing regulation for the 2014/2015 regulation year, NDOW proposed to reinstate the 14 in minimum size requirement that was in effect prior to changing the regulation in 2008. The proposed change was accepted and effective March 1, 2014. Fishing regulations at Mason Valley Wildlife Management Area ponds included the following length restrictions for black bass for all ponds on the MVWMA: "Minimum size for black bass is 14 inches total length."

BACKGROUND

Nevada Department of Wildlife (NDOW) has management responsibilities for Mason Valley Wildlife Management Area (MVWMA), which is located within the Walker

River Basin and is owned by Nevada Division of State Lands. There are numerous ponds throughout the area, and with the completion of Mason Valley Hatchery (MVH) in 1990, all ponds within the first series (i.e., Hinkson Slough, Bass, Crappie, and North ponds) receive hatchery effluent. Many other ponds receive water from the Walker River, via Joggles Ditch. The first series ponds (called the fishing series ponds) are managed primarily for sport fish along with waterfowl. The Eastside Waterfowl Series Ponds are managed primarily for waterfowl; however, some fishing does occur late in the season.

Anglers can possess up to 15 warmwater fishes (e.g., bluegill, crappie, and catfish) with a maximum of two largemouth bass, minimum size of 14 in. Rainbow trout are stocked to provide early season fishing in some waters, while they provide angling throughout the entire season in Hinkson Slough. The harvest limit for trout on the management area is five; however, in Hinkson Slough there is a two trout limit with a minimum total length of 16 inches and only artificial lures are allowed. The angling season begins the second Saturday in February and ends September 30 in the Fishing Series Ponds, while the season lasts from August 16 to September 30 in the Eastside Waterfowl Series Ponds.

OBJECTIVES

- Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in angler questionnaire data.
- Monitor lake level and clarity when on-site.
- Stock 1,000 channel catfish in North Pond and 1,000 in FCCP.
- Augment 500 largemouth bass in Bass Pond and 500 in Crappie Pond.
- Begin the planning process to eradicate carp from Hinkson Slough and potentially the entire fishing series ponds.
- Monitor fish in Hinkson Slough through electrofishing at four established transects during one night in the fall after the close of the fishing season.

PROCEDURES

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in, angler questionnaire data. Information obtained from anglers included total time fishing and number, size, and species of fish caught. Location of angler, place of residence, and type of bait or lure used was also recorded. Drop-boxes were located at Hinkson Slough, North Pond, and Fort Churchill Cooling Pond (FCCP). Mail-in, angler questionnaires were mailed at the end of 2013 to 30,000 anglers purchasing a Nevada fishing license. Data was received and summarized for number of anglers, days spent fishing, and number of fish caught.

Monitor water quantity (lake level) and water quality (clarity) when on-site. Visual observations were made and recorded for all fishing series ponds while on-site throughout 2014. Data recorded included estimated depth of pond, estimated percentage of open water, and type of vegetation.

Stock 1,000 channel catfish in North Pond and 1,000 in FCCP. No channel catfish were planted in 2014 due to ongoing drought conditions and resultant low water levels in most northern Nevada waters in 2014.

Augment 500 largemouth bass in Bass Pond and 500 in Crappie Pond. Bass and Crappie ponds were not augmented with largemouth bass during 2014.

Begin the planning process to eradicate carp from Hinkson Slough and potentially the entire fishing series ponds. The common carp population in Hinkson Slough was evaluated concurrent to sport fish monitoring activities, including electrofishing and angler contact surveys. Research was conducted to evaluate historical carp establishment and their effect on the sport fishery, particularly the events leading to their eradication during 2001. The planning process has been postponed due to the results of the population monitoring conducted during 2014.

Monitor fish in Hinkson Slough through electrofishing at four established transects during one night in the fall after the close of the fishing season. Electroshocking was completed at Hinkson Slough on the evening of October 7, 2014 using an 18 ft Smith-Root aluminum boat with two 24 in “spider” anodes. The electrofisher was set at 60 V pulsed DC at 20-30% of range and sampling occurred for approximately 12-15 min at four transects. Total time electrofishing was 52.68 min. Data recorded included species of fish, length of fish, number of fish, electroshocker settings, sampling time, and general health of all fish caught.

FINDINGS

Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in, angler questionnaire data. A total of 47 anglers were contacted during 2014 at MVWMA ponds. Rainbow trout and largemouth bass comprised the majority of the anglers’ creel. Anglers at Hinkson Slough reported catching rainbow trout at a catch rate of 0.71 fish per hour and average size of 12 in. Anglers at North Pond reported a largemouth bass catch rate of 1.05 fish per hour and average size of 14.0 in. No anglers were contacted at FCCP.

A total of 120 anglers filled out drop-box surveys during 2014. Drop-box data from all three ponds showed the catch rate (fish/hr) was higher during 2014 than for the 10 yr average (Table 1).

Size of fish reported through angler drop-box surveys for Hinkson is shown in Figure 1. Most rainbow trout reported were in the 8-11 and 11-14 in size classes (51% and 36% of total rainbow trout, respectively). Anglers reported 16 rainbow trout were over 16 in, however, this only represented one percent of the total catch (548 were reported in the 8-11 in category).

Anglers also reported that most largemouth bass caught were in the 8-11 in size range and seven percent were greater than 16 in, which is an increase from three percent reported by anglers during 2013 (Figure 2).

Table 1.

Drop-Box Catch Rate Data

	Fish/Day	Fish/Hour	No. Anglers
2014 Hinkson	17.8	3.84	66
10 yr average	9.98	1.9	48
2014 North Pond	5.76	1.49	21
10 yr average	4.31	1.19	10
2014 FCCP	5	1.27	33
10 yr average	3.8	0.89	18

Figure 1.

Hinkson Rainbow Trout Drop-Box Size of Fish

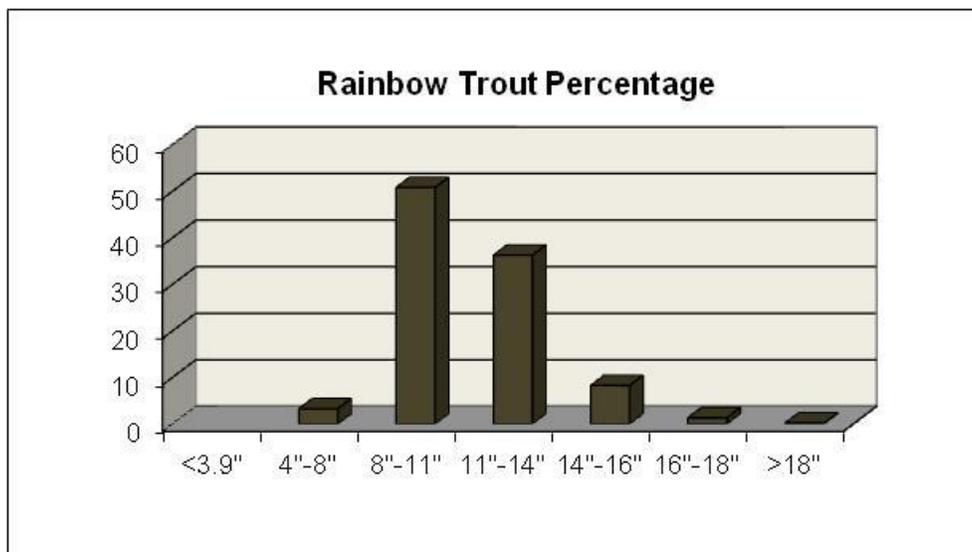
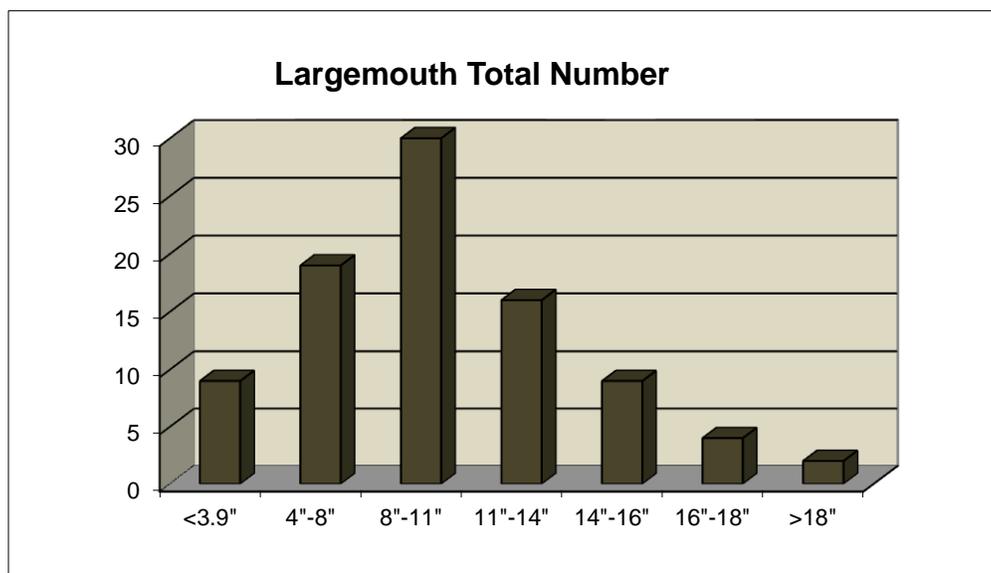


Figure 2.

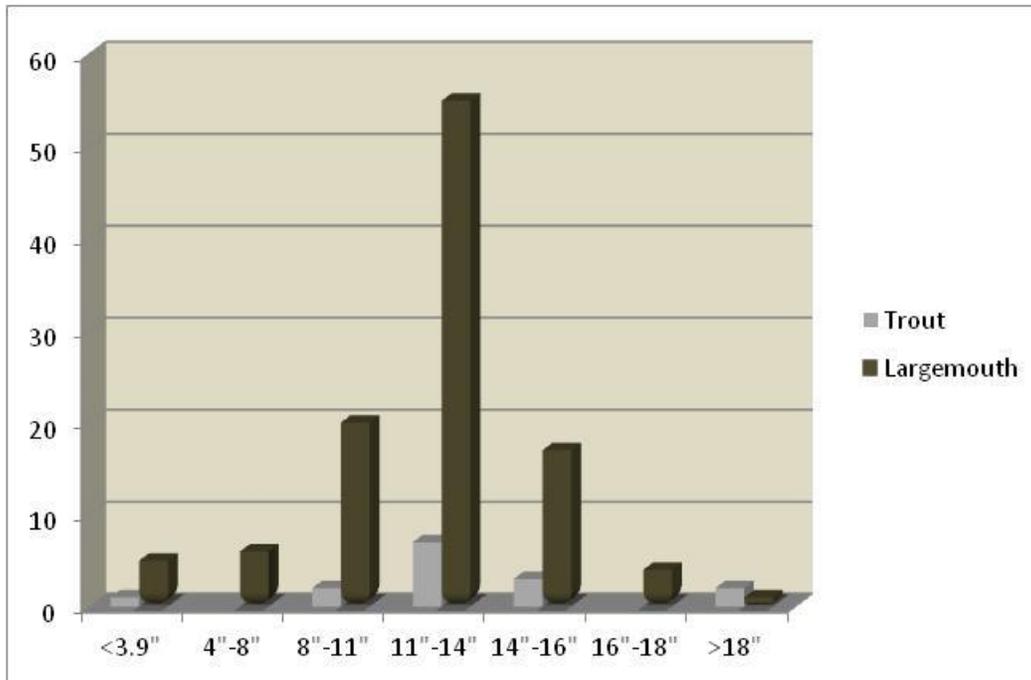
Hinkson Largemouth Bass Drop-Box Size of Fish



Size of fish reported through angler drop-box surveys for North Pond is shown in Figure 3. Most trout reported were in the 11-14 inch size class. Anglers reported two rainbow trout over 16 in. Anglers reported most largemouth bass caught were in the 11-14 in size class and five were reported greater than 16 in (only one was reported over 16 in during 2013).

Figure 3

North Pond Drop-Box Size of Fish



The angler satisfaction survey for Hinkson Slough, North Pond, and FCCP showed anglers were either satisfied or highly satisfied with all categories (Table 2).

The annual mail-in questionnaire for 2013 showed that angler use at FCCP and Hinkson Slough were lower than the six-year average (Table 3). Angler use at North Pond increased from 2011 to 2013 and it was well above the six-year average. Catch rates (fish/day) reported from the questionnaire were higher during 2013 than the six-year average for Hinkson and North pond, however, FCCP was below average.

Table 1 shows catch rates at FCCP fell within the range of the Warmwater General Fishery Management Concept, which states “Angler catch rates should range between 0.25 and 0.75 fish per hour and 1.0 and 2.0 fish per angler day.” Available survey information (drop box, creel, and questionnaire) suggests that FCCP is meeting the management objectives. The company that owns the power plant has operated intermittently over the past couple years and water temperatures have subsequently dropped. Angler drop-box survey at FCCP reported 93% for largemouth bass, zero for channel catfish, and seven percent for trout. Trout were stocked during 2012, 2013, and 2014; however, the 2014 drop-box survey was the first year anglers have reported catching trout.

Table 2.

MVWMA Satisfaction Survey

2014 FCCP						
	-2	-1	0	1	2	Total Ave.
Experience	3		10	11	8	0.66
Size of Fish	5		12	5	6	0.25
No. of Fish	4	1	11	4	9	0.45
2014 Hinkson						
	-2	-1	0	1	2	Total Ave.
Fishing exp.	3		2	19	41	1.46
Size of Fish	3	2	14	20	25	0.97
No. of Fish	2		14	14	34	1.22
2014 North Pond						
	-2	-1	0	1	2	Total Ave.
Fishing exp.	5	1	1	5	8	0.50
Size of Fish	7		2	5	6	0.15
No. of Fish	7		0	7	7	0.33

According to drop-box, mail-in angler questionnaire, and angler contact data, North Pond also met the objectives of the Warmwater General Fishery Management Concept. Channel catfish were stocked annually and even though only one was reported through the drop-box survey, four were measured during angler contacts, which averaged 17 in. Several bass anglers anecdotally reported catching over 50 fish per day in 2014, with catch rates as high as 10 fish per hour. Angler use in North Pond was limited in 2010 and 2011 due to submergent aquatic vegetation that restricted angler access. At the time, aquatic vegetation was estimated in excess of 70% coverage over the pond. A habitat improvement project, funded through the NDOW's Habitat Conservation Fee Account, was initiated in 2012 and continued through 2013; this resulted in reduced aquatic vegetation in several areas around North Pond, which improved angler access. Angler use and success appears to be increasing as a result.

Angler catch rates (fish per hour, fish per day) and size of fish reported through angler contacts, mail-in angler questionnaire, and drop-box data at Hinkson Slough suggest that the Coldwater Trophy Fishery Concept and the Warmwater Trophy Fishery Concept objectives were met during 2014. Comparing the drop-box data and angler satisfaction data from 2014 to previous years, angler participation and catch rates remained high (above the 10 yr average) and anglers were very satisfied with their overall fishing experience, size of fish, and number of fish caught (Table 2).

Table 3.

Mail-in, Angler Questionnaire Data

Fort Churchill Cooling Pond							
	2008	2009	2010	2011	2012	2013	AVE
No. Anglers	152	176	221	93	285	66	166
Days	644	548	1,098	222	1,566	283	727
Days/Angler	4.24	3.13	4.97	2.39	5.49	4.3	4.09
No. Fish	2,769	1,160	2,170	239	19,383	412	4356
Fish/Day	4.3	2.12	1.98	1.08	12.38	1.46	3.89
Fish/Angler	18.22	6.59	9.82	2.57	68.01	6.27	18.58
Hinkson Slough							
	2008	2009	2010	2011	2012	2013	AVE
No. Anglers	181	255	461	61	363	165	248
Days	816	626	2,129	172	1,490	505	956
Days/Angler	4.51	2.45	4.62	2.82	4.1	3.06	3.59
No. Fish	6,153	1,344	9,740	926	7,490	3,027	4780
Fish/Day	7.54	2.15	4.57	5.38	5.03	5.99	5.11
Fish/Angler	33.99	5.27	21.13	15.18	20.63	18.33	19.09
North Pond							
	2008	2009	2010	2011	2012	2013	AVE
No. Anglers	62	109	168	28	82	215	111
Days	1,699	303	444	51	324	1005	638
Days/Angler	27.4	2.78	2.64	1.82	3.95	4.67	7.21
No. Fish	4,743	714	465	301	1,137	4,745	2018
Fish/Day	2.79	2.36	1.05	5.9	3.51	4.72	3.39
Fish/Angler	76.5	6.55	2.77	10.75	13.87	22.04	22.08

Monitor lake level and clarity when on-site. Staff from Mason Valley Wildlife Management Area manages water movement throughout the area, including the fishing series ponds. Water quality and clarity remained good for the majority of 2014, however, since 2013, water clarity has been noticeably reduced in Hinkson Slough, most likely due to the increasing abundance of common carp. Water levels remained high during most of 2014 for North Pond, FCCP, and Hinkson Slough. Bass and Crappie ponds were drained, excavated, and refilled during 2011. Bass Pond was stocked with 201 largemouth bass from Bilk Creek Reservoir in 2012. During 2014, water was diverted around Bass and Crappie pond for several months during regular pond maintenance (cattail and bulrush burning and removal) therefore water levels were low.

Due to the high nutrient loads provided by hatchery effluent, submergent vegetation has become an angling nuisance in many of the fishing series ponds. Triploid grass carp were first introduced into Hinkson Slough during 2006, resulting in improving channels

previously choked by weeds and inaccessible to anglers. In 2010, a habitat improvement project was funded by NDOW's Habitat Conservation Fee Account to use biological and chemical means to control aquatic vegetation in North Pond. Triploid grass carp were introduced during 2010 to reduce submergent vegetation; additionally, herbicide treatments conducted in spring 2012 and spring 2013 were successful in reducing rooted aquatic vegetation. Monitoring throughout the fishing season indicated these treatments were successful in reducing vegetation. Anglers reported better access to more areas and were able to fish in areas that previously were not accessible. Catch rates and angler participation have increased since 2011.

Begin the planning process to eradicate carp from Hinkson Slough and potentially the entire fishing series ponds. During electroshocking surveys, common carp numbers increased from four in 2011 to over 300 in 2012. There was an estimated 2,000-4,000 observed in 2013, however, numbers dropped to 12 during 2014 with no juvenile carp being caught. Prior to the 2014 electrofishing survey, these numbers were consistent with numbers found during 1994-1996, prior to the 2001 carp eradication project. Trout numbers declined 90% from 1994 to 1996 and 72% from 2010 to 2012. Current and historical data suggest that trout will decline to very low numbers (less than ten were observed in 1996 and 1997) within three years after confirmed re-introduction of common carp. Only 16 trout were caught during electrofishing surveys in 2013 that were larger than 14 in and only five were caught during 2014, all other trout were likely to have been remnants of recent stocking. Anglers reported catching 16 fish larger than 16 in, however, this only represented approximately one percent of all trout caught. Largemouth bass and bluegill populations have increased in size and number.

Stock 1,000 channel catfish in North Pond and 1,000 in FCCP. Table 4 shows the stocking events for all MVWMA ponds during 2014. Table 5 shows historical stocking, 2009 to 2013. No channel catfish were stocked during 2014 due to ongoing drought conditions in northern Nevada.

Table 4.

MVWMA Stocking 2014				
Fort Churchill Cooling Pond				
Date	Species	Strain	Number	Size
02/04/14	Rainbow	Jumper	3,180	9.8
Hinkson Slough				
Date	Species	Strain	Number	Size
2/5/2014	Rainbow	EAGLE LAKE	2,500	9.5
2/5/2014	Rainbow	MT. SHASTA	1,550	9.3
10/10/2014	Rainbow	TAHOE	2,380	10.2
10/10/2014	Rainbow	TRIPLOID	546	9.7
Rainbow Total			6,976	9.7

North Pond				
Date	Species	Strain	Number	Size
2/5/2014	Rainbow	EAGLE LAKE	4,060	9.5
4/17/2014	Rainbow	TRIPLOID	1,596	9.1
5/5/2014	Rainbow	TRIPLOID	1,401	9.5
9/24/2014	Rainbow	EAGLE LAKE	1,393	10.8
10/21/2014	Rainbow	TAHOE	1,028	9.9
Rainbow Total			9,478	9.8

Table 5.

MVWMA Historical Stocking

	Hinkson			North Pond			FCCP		
	Species	Number	Size	Species	Number	Size	Species	Number	Size
2013	Rainbow	4,552	10.1	Rainbow	19,147	4.9	Rainbow	2,088	9.9
	Rainbow	7,799	4.5	Catfish	2,000	4.0	Catfish	2,000	4.0
2012	Rainbow	2,501	10.1	Rainbow	3,269	10.2	Rainbow	2,088	9.9
2011	Rainbow	5,502	10.0	Bowcutt	20,061	3.4	Channel Catfish	1,630	6.0
				Channel Catfish	1,630	6.0			
				Rainbow	2,046	10.0			
2010	Rainbow	3,592	9.2	Rainbow	1,995	10.3	Channel Catfish	4,288	7.0
	Rainbow	21,828	1.8	Rainbow	74,806	1.8			
				Grass Carp	1,500	10.5			
				Channel Catfish	8,701	7.0			
2009	Rainbow	3,022	10.9	Rainbow	4,000	10.4	No fish stocked		
	Grass Carp	218	12.0	Channel Catfish	373	18.2			
	Rainbow	87,840	0.9						

Augment 500 largemouth bass in Bass Pond and 500 in Crappie Pond. Largemouth bass were not stocked into Bass or Crappie ponds during 2014. Water was diverted around Bass and Crappie ponds for several months during regular pond maintenance and water levels were low, therefore, no stocking occurred.

Monitor fish in Hinkson Slough through electroshocking at four established transects during one night in the fall after the close of the fishing season. Table 6 shows CPUE (number of fish caught per 10 min of electroshocking) of largemouth bass captured during the electroshocking survey.

Table 6.**Hinkson Slough CPUE Electrofishing Data – Largemouth bass**

Year	<4.9"	5-5.9"	6-7.9"	8-9.9"	10-11.9"	12-13.9"	14-15.9"	16-17.9"	18-19.9"	20-21.9"	Total CPUE
2003	1.52	2.39	0.65								4.57
2004	24.40	4.40	0.00	1.60	0.80	0.80					32.00
2005	25.50	0.25	1.50	3.50	0.50						31.25
2006	10.67	9.00	1.67	0.67		2.33	1.00	0.33			25.67
2007	5.00	0.67	0.67	2.67	2.67	2.33	4.33	2.67			21.00
2009	15.11	0.21	4.04	1.91	0.85	0.64	0.64	0.64	0.21		24.26
2010	0.36	0.00	1.25	0.71	0.89	0.18	0.89			0.18	4.46
2011	0.49	0.49	3.41	0.73	2.93	2.44	1.71	0.98	0.98		14.15
2012	12.38	4.29	1.19	2.86	0.95	0.71	0.24	0.24			22.86
2013	1.76	0.88	17.65	3.82	3.53	1.76	0.29				29.71
2014	4.53	5.85	7.74	11.13	4.91	1.89	0.75	0.57	0.38	0.38	38.11

MANAGEMENT REVIEW

Several water management changes were implemented in 2008; these changes have since been adopted as regular management practices. The most notable was the management of water through Hinkson Slough. Flow was maintained through Hinkson Slough throughout most of the 2009 through 2012 summers, which allowed for carryover of rainbow trout. During 2013 and 2014, however, carryover was limited and likely a result of the increased turbidity and temperature caused by the increasing common carp population. Trout fishing at Hinkson Slough remained popular and even though large trout (>16 in) catch rates were low, anglers reported catching a few larger than 20 in. Largemouth bass showed limited spawning recruitment in the spring of 2010 and 2011, however, a successful spring spawn during 2012 and 2013 was evident from electroshocking results. CPUE was highest for bass in the 6-8 in range during 2013 and 8-9 in range during 2014. Based on available data for catch rate and size of fish caught, Hinkson Slough met management objectives during 2014.

The other notable change in water management was the inactivity of Fort Churchill Power Plant. NV Energy uses FCCP for cooling the natural gas fired power plant. The power plant experienced periods of inactivity during 2009 through 2013 and, subsequently, water temperature has fallen considerably. Ice can be observed covering more than 50% of the surface during the winter. This is vastly different from the past 25 years of operation where winter and spring temperatures ranged from the mid-50s to the mid-80s at the north end of the pond. This change seems to have had a negative impact on the largemouth bass and channel catfish fishing during the spring. Trout were stocked to provide anglers with opportunity to catch fish during the cooler spring months and anglers reported catching them for the first time during 2014. The FCCP management objectives should change from a "Quality Warmwater Fisheries Management Objectives" to a "General Warmwater Fisheries Management Objectives," however, regulations should be consistent with the fishing series ponds.

Common carp were found in Hinkson Slough during population surveys in October 2011. During 2012, over 300 were observed and over 2,000 were estimated during 2013, however, only 12 were found during 2014 and no juvenile carp were observed. An investigation into the previous carp eradication project in 2001 revealed similar population numbers from the time they were first confirmed. Past performance has been consistent and trout fishing dropped off during the 2013 and 2014 fishing season. Due to the results

of 2014, an increasing bass population (2014 population survey had the highest CPUE for largemouth bass since they were reintroduced over 10 years ago) and a potentially decreasing carp population, the eradication project has been postponed until populations stabilize.

RECOMMENDATIONS

- Conduct a general fisheries assessment through opportunistic angler contacts, angler drop-box surveys, and mail-in, angler questionnaire data.
- Monitor lake level and water clarity when on site.
- Stock 1,000 channel catfish in North Pond and 1,000 in FCCP.
- Monitor the common carp population in Hinkson Slough and North Pond and evaluate the need for a carp eradication project.
- Monitor fish in Hinkson Slough and North Pond through electroshocking at four established transects during one night in the fall after the close of the fishing season.

Prepared by: Kris Urquhart
Biologist III, Western Region

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