NEVADA DEPARTMENT OF WILDLIFE
STATEWIDE FISHERIES MANAGEMENT

FEDERAL AID JOB PROGRESS REPORTS

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2013

Mason Valley Wildlife Management Area Ponds

WESTERN REGION

NEVADA DEPARTMENT OF WILDLIFE, FISHERIES DIVISION
ANNUAL PROGRESS REPORT

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ANNUAL PROGRESS REPORT

State: *Nevada*
Project Title: *Statewide Fisheries Program*
Job Title: *Mason Valley Wildlife Management Area Ponds*
Period Covered: *January 1, 2013 through December 31, 2013*

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 an increasing common carp population) increased through July and August. 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 2013. 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 5 lbs were reported anecdotally. A 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 below average catch rates during 2013. The power plant that historically warmed the water throughout the winter was shut down and ice coverage has been significant (>50%) over the past two winters. In response to the cooler pond temperatures, trout were stocked in the spring.

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 choose 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, so effective March 1, 2014, fishing regulations at Mason Valley Wildlife Management Area ponds will include 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 heavily 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., largemouth bass, 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 length of 16 total inches and only artificial lures are allowed. The angling season begins the second Saturday in February and ends September 30 in the First 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.
- Install an electronic temperature sensor in Hinkson Slough and Fort Churchill Cooling Pond (FCCP).
- Based on data collected through ongoing studies at Hinkson Slough, evaluate common carp and develop a timeline for eradication.
- 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.
- Provide information to anglers regarding on-going fishery assessments with signage at Hinkson Slough throughout the year.
- Monitor tagged 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 2012 to about 10% of the 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), water quality (clarity), when on-site. Visual observations were made and recorded for all fishing series ponds while on-site throughout 2013. Data recorded included estimated depth of pond, estimated percentage of open water, and type of vegetation.

Install an electronic temperature sensor in Hinkson Slough and Fort Churchill Cooling Pond (FCCP). Temperature loggers were placed near the outlet structure at Hinkson Slough and off the dock at North Pond on June 17. No temperature logger was placed in FCCP during 2013.

Based on data collected through the ongoing studies at Hinkson Slough, evaluate the common carp population in Hinkson Slough and develop a timeline for eradication. 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 affect on the sport fishery, particularly the events leading to their eradication during 2001.

Stock 1,000 channel catfish in North Pond and 1,000 in FCCP. On June 27, 2,000 channel catfish were stocked into North Pond and 2,000 were stocked into Fort Churchill Cooling Pond.

Augment 500 largemouth bass in Bass Pond and 500 in Crappie Pond. Bass and Crappie ponds were not augmented with largemouth bass during 2013.

Provide information to anglers regarding on-going fishery assessments with signage at Hinkson Slough throughout the year. Signs were posted around Hinkson Slough on standard T-posts prior to the fishing season advising anglers of the ongoing assessments. Information was also posted on the kiosks located at Hinkson Slough near the entry road, at North Pond next to the boat ramp, and at Bass Pond next to the boat launch area.

Monitor tagged 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 November 26, 2013 using an 18 ft Smith-Root aluminum boat with two 24 in “spider” anodes. The electroshocker was set at 60 V pulsed DC at 20-30% of range and sampling occurred for approximately 10 min at three transects. A fourth transect was not sampled due to shallow water and an abundance of carp present; it would have been difficult to sort out any other species and there were too many carp for the live well to carry. 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 19 anglers were contacted during 2013 at MVWMA ponds. Rainbow trout and largemouth bass comprised the majority of the anglers’ creel. Anglers at Hinkson Slough only reported

catching rainbow trout at a catch rate of 3.50 fish per hour and average size of 12 in. Anglers at North Pond reported a largemouth bass catch rate of 0.58 fish per hour and average size of 10.9 in. Three anglers were contacted at FCCP; however, no fish were reported.

A total of 83 anglers filled out drop-box surveys during 2013. Drop-box data from all three ponds showed the catch rate (fish/hr) was higher during 2013 than for the 10 yr average (Table 1).

Table 1

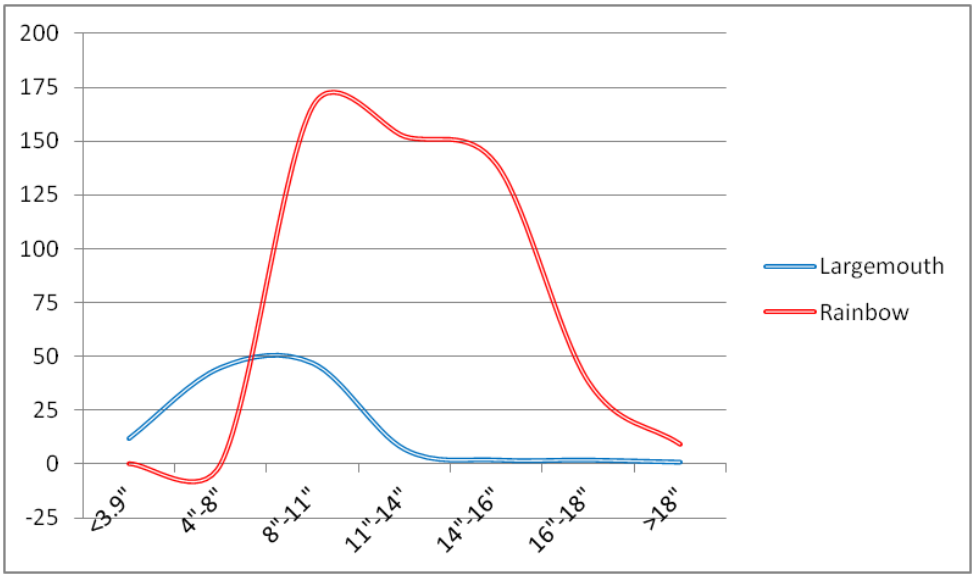
Drop-Box Catch Rate Data

	Fish/Day	Fish/Hour	No. Anglers
2013 Hinkson	11.77	2.36	53
10 yr average	9.2	1.71	47
2013 North Pond	5.42	2.22	19
10 yr average	4.15	1.15	9
2013 FCCP	2.67	1.00	11
10 yr average	3.68	0.89	16

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 (63% of total rainbows). Anglers reported 9% of rainbows were over 16 in. Anglers also reported 79% of largemouth bass caught were in the 4-8 and 8-11 in size ranges and only 3% of largemouth bass were greater than 16 in.

Figure 1

Hinkson Drop-Box Size of Fish

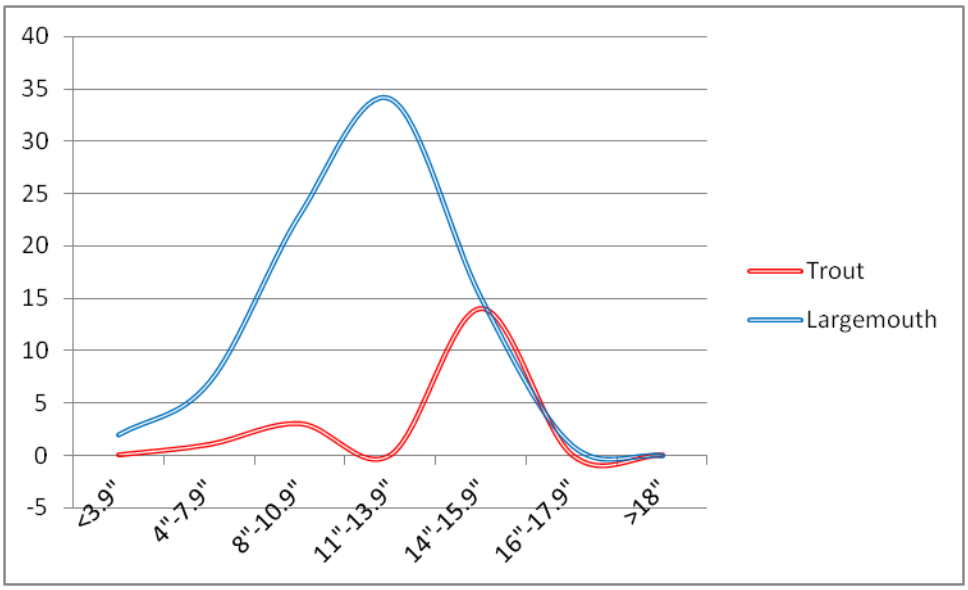


Size of fish reported through angler drop-box surveys for North Pond is shown in Figure 2. Most trout reported were in the 14-16 inch size class (78% of total rainbow trout). Anglers reported no rainbows over 16 in. Anglers reported 70% of largemouth bass

caught were in the 8-11 and 11-14 inch size ranges and only one largemouth was reported greater than 16 in.

Figure 2

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).

Table 2

MVWMA Satisfaction Survey

2013 FCCP

	-2	-1	0	1	2	Total Ave.
Experience			3	4	4	1.09
Size of Fish			5	5	1	0.64
No. of Fish			4	3	4	1.00

2013 Hinkson

	-2	-1	0	1	2	Total Ave.
Fishing exp.		4	2	23	24	1.26
Size of Fish	1	3	12	19	18	0.94
No. of Fish	2	2	11	12	26	1.09

2013 North Pond

	-2	-1	0	1	2	Total Ave.
Fishing exp.			1	9	7	1.35
Size of Fish	1	1	5	5	5	0.71
No. of Fish		1	3	4	9	1.24

The annual mail-in questionnaire for 2012 showed that angler use at FCCP and Hinkson Slough were higher than the 6 yr average (Table 3). Angler use at North Pond increased from 2011 to 2012; however, it was still below the 6 yr average. Catch rates (fish/day) reported from the questionnaire were higher during 2013 than the 6 yr average for all ponds.

Table 3

Mail-in, Angler Questionnaire Data

Fort Churchill Cooling Pond

	2007	2008	2009	2010	2011	2012	AVE
No. Anglers	566	152	176	221	93	285	249
Days	2,841	644	548	1,098	222	1,566	1,153
Days/Angler	5.02	4.24	3.13	4.97	2.39	5.49	4.21
No. Fish	9,612	2,769	1,160	2,170	239	19,383	5889
Fish/Day	3.38	4.3	2.12	1.98	1.08	12.38	4.21
Fish/Angler	16.98	18.22	6.59	9.82	2.57	68.01	20.37

Hinkson Slough

	2007	2008	2009	2010	2011	2012	AVE
No. Anglers	496	181	255	461	61	363	303
Days	2,227	816	626	2,129	172	1,490	1,243
Days/Angler	4.49	4.51	2.45	4.62	2.82	4.1	3.83
No. Fish	4,736	6,153	1,344	9,740	926	7,490	5065
Fish/Day	2.13	7.54	2.15	4.57	5.38	5.03	4.47
Fish/Angler	9.55	33.99	5.27	21.13	15.18	20.63	17.63

North Pond

	2007	2008	2009	2010	2011	2012	AVE
No. Anglers	199	62	109	168	28	82	108
Days	1,077	1,699	303	444	51	324	650
Days/Angler	5.41	27.4	2.78	2.64	1.82	3.95	7.33
No. Fish	826	4,743	714	465	301	1,137	1364
Fish/Day	0.77	2.79	2.36	1.05	5.9	3.51	2.73
Fish/Angler	4.15	76.5	6.55	2.77	10.75	13.87	19.10

Table 1 shows catch rates at FCCP fell within the range of the Warmwater Quality Fishery Management Concept, which states “Angler catch rates should range between 0.30 and 1.25 fish per hour and 2.0 and 3.5 fish per angler day.” The Warmwater Quality Fishery Concept also states, “For these fisheries, anglers are provided the opportunity to consistently catch large fish, at high angler success rates.” Drop-box survey results from FCCP were 66% for largemouth bass and 34% for channel catfish at a combined catch rate of 1.0 fish per hour. The company which 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 74% for largemouth bass in the 8-11 and 11-14 in size classes and channel catfish ranged from 8-16 in. Trout were stocked during 2012 and 2013; however, there have been no trout reported through angler contacts or drop-box survey.

According to the drop-box, mail-in angler questionnaire, and angler contact data, North Pond met the objectives of the Warmwater Quality Fishery Concept. Channel catfish were stocked annually and made up 15% of the drop-box reported catch during 2013; several were greater than 18 in. Several bass anglers anecdotally reported catching over 40 fish per day in 2012, with catch rates as high as 10 fish per hour during 2013. Angler use in North Pond was limited in 2010 and 2011 due to submergent aquatic vegetation that limited 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 appeared 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 2013. Comparing the drop-box data and angler satisfaction data from 2013 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).

Monitor lake level and clarity when on-site. Staff from Mason Valley Wildlife Management Area manage water movement throughout the area, including the fishing series ponds. Water quality and clarity remained good for the majority of 2013; however, during the summer and fall, water clarity was noticeably reduced in Hinkson Slough, most likely due to the increasing abundance of common carp. Water levels remained high during most of 2013 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. 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 improveing 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 was 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.

Install an electronic temperature sensor in Hinkson Slough and Fort Churchill Cooling Pond (FCCP). Temperature loggers were placed in Hinkson and North Pond during 2013. There was a greater need for temperature data from North Pond rather than FCCP to better evaluate recent water management changes implemented on the WMA. The temperature logger placed near the outlet structure in Hinkson slough removed accidentally while digging up vegetation and sediment during regular pond maintenance. I it was unrecoverable. The North Pond monitor was placed at the boat dock and recorded temperatures throughout the summer at 2 ft deep. Temperature ranged from 32°F in

November to 81°F in August. Water temperature was also taken with a hand-held thermometer and the highest surface water temperature for Hinkson Slough was 82°F in July. Flow into Hinkson Slough during this time was limited; however, due to the vegetation management (via. grass carp) and the amount of cool hatchery water flowing in, a few rainbow trout found thermal refuge to survive. Very limited carryover was observed.

Based on data collected through the ongoing studies at Hinkson Slough, evaluate the common carp population in Hinkson Slough and develop a timeline for eradication. During electroshocking surveys, common carp numbers have increased from 4 in 2011 to over 300 in 2012. There was estimated 2-4,000 observed in 2013. This was consistent with numbers found during 1994 to 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, all other trout were likely to have been remnants of recent stocking.

Stock 1,000 channel catfish in North Pond and 1,000 in FCCP. Table 4 shows the stocking events for all MVWMA ponds during 2013. Table 5 shows historical stocking, 2008 to 2012. A total of 4,000 channel catfish were stocked in June and were split between North Pond and FCCP.

Table 4

MVWMA Stocking 2013

Fort Churchill Cooling Pond					
Date	Species	Strain	Number	Size	Water Temp
6/27/2013	Channel Catfish	COLORADO	2,000	4	67
2/7/2013	Rainbow	MT. SHASTA	2,088	9.9	45

Hinkson Slough					
Date	Species	Strain	Number	Size	Water Temp
10/17/2013	Rainbow	JUMPER	1,737	10.2	53
9/16/2013	Rainbow	TAHOE	1,528	9.9	70
9/16/2013	Rainbow	MT. SHASTA	3,505	4.5	70
9/18/2013	Rainbow	MT. SHASTA	4,294	4.4	67
2/7/2013	Rainbow	MT. SHASTA	1,287	10.2	54
		Rainbow Catchable	4,552	10.1	
		Rainbow Fingerling	7,799	4.5	

North Pond					
Date	Species	Strain	Number	Size	Water Temp
12/9/2013	Rainbow	EAGLE LAKE	12,166	5.3	32
9/18/2013	Rainbow	MT. SHASTA	6,981	4.4	68
6/27/2013	Channel Catfish	COLORADO	2,000	4	65
		Catfish Total	2,000	4.0	
		Rainbow Total	19,147	4.9	

Table 5

MVWMA Historical Stocking

	Hinkson				North Pond				FCCP		
2012	**Species**	**Number**	**Size**		**Species**	**Number**	**Size**		**Species**	**Number**	**Size**
	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								
2008	Rainbow	5,157	9.8		Rainbow	7,014	9.0		Channel Catfish	17,000	3.0
					Channel Catfish	1,563	12.0				

Augment 500 largemouth bass in Bass Pond and 500 in Crappie Pond. Largemouth bass were not stocked into Bass or Crappie ponds during 2013.

Provide information to anglers regarding ongoing fishery assessments with signage at Hinkson Slough throughout the year. Signs were posted at Hinkson Slough, Bass Pond, and North Pond on permanent Kiosks prior to and during the fishing season advising anglers of ongoing fishery assessments.

Figure 3

Bass Pond Kiosk

Monitor tagged fish through electroshocking at four established transects during one night in the fall after the close of the fishing season. No tagged fish were caught during electrofishing surveys in 2013; however, during 2011 and 2012 electrofishing surveys, 17 Tahoe strain rainbow trout, 14 Bel-Air strain rainbow trout, 14 bowcutt strain trout, and 4 Eagle Lake strain rainbow trout with tags were captured. These fish were measured and released. Only one angler-caught tagged fish was reported during 2013, a 20 in Eagle Lake strain rainbow trout. Therefore, no additional data was included in the rainbow strain study and results reported during 2012 are now final. 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

MANAGEMENT REVIEW

Several water management changes had taken place during 2008; these changes have 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, 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 was evident from electroshocking results and CPUE was highest for bass in the 6-8 in range. Based on available data for catch rate and size of fish caught, Hinkson Slough met management objectives during 2013.

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-50's to the mid-80's 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. 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 electroshocking surveys. 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 2013 and will likely drop dramatically during the 2014 fishing season. An eradication project is recommended during 2015.

RECOMMENDATIONS

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

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