

Chloramine-T Clinical Field Trials - INAD 9321

Year 2004 Annual Summary Report on the Use of Chloramine-T in Clinical Field Efficacy Trials

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Summary

Chloramine-T has been used effectively in the U. S. under compassionate INAD Exemption #9321 to control mortality in a variety of fish caused by common fish bacterial pathogens. In calendar year 2004 (CY04), the efficacy of chloramine-T (CLT) was evaluated in 140 disease trials involving approximately 14.9 million fish to control mortality in a variety of test fish caused by bacterial gill disease (BGD), external bacterial coldwater disease, or external columnaris. Trials were conducted at 27 fish culture facilities, including seven U.S. Fish and Wildlife Service National Fish Hatcheries (NFH), 15 state fish hatcheries, two private fish hatcheries and three tribal hatcheries. The compassionate study protocol under which treatments were administered allowed the investigator to use chloramine-T on either consecutive or alternate days up to three times/wk for 1hr at dosages ranging from 10 - 20 mg/L. Overall, results of trials conducted in CY04 indicated that treatments in approximately 51% of the trials appeared efficacious, treatments in 2% of the trials appeared ineffective, and treatments in 6% were characterized as inconclusive. In the remaining 41% of the trials, the Investigators did not report mortality data because the effectiveness technical section

for the specific disease claim and fish species treated has been completed and accepted by CVM.

Introduction

Bacterial gill disease (BGD) is one of the most common diseases of hatchery reared salmonids (Bullock 1990) and causes more fish losses than any other bacterial disease (Bills et al. 1988). Fish mortality is generally not a direct result of the infection, but is a consequence of the infection. Mortality is most likely the result of asphyxiation from lack of adequate oxygen exchange in severely congested gills. Stressors associated with intense fish culture may predispose fish to infection. Although *Flavobacterium branchiophilum* is the bacteria responsible for causing most outbreaks of BGD (Wakabayashi, H, et al., 1989; Ferguson et al., 1991), other gram-negative bacteria have also been implicated. These "other" bacteria include *F. aquatile*, *F. psychrophilus*, *F. columnaris*, as well as other flavobacters and aeromonads and pseudomonads. Clinical signs of BGD have been well documented, and it is widely known that this disease can cause the rapid proliferation of gill epithelium and the production of excess mucus as the host responds defensively to the infection. This response can "smother" gills and cause severe losses if prompt measures are not taken. If BGD, which is horizontally transmitted, is not diagnosed and treated early, an epizootic may occur within a 24-h period (Bullock et al. 1990).

Historically, several chemicals including benzalkonium chloride (available as Hyamine 1622 and 3500), diquat, and chloramine-T have been used to control mortality caused by BGD (Bullock et al. 1990). However, none of these chemicals have been approved by the FDA to control mortality in freshwater fish caused by BGD. Because chloramine-T appears to be the most effective therapeutant when salmonids have BGD (From 1980; Bullock et al. 1990) it has become the prime candidate for approval with the U.S. Food and Drug Administration (FDA) as a bath treatment. Chl-T has been characterized as a non-selective sanitizing agent and has been shown to clean up gills infested with bacteria and coated with excess mucus.

Purpose of Report

The purpose of this report is to summarize the results of calendar year 2004 (CY04) supplemental chloramine-T field efficacy data. Similar data have been submitted by the Service in previous years. We anticipate that CY04 data will be used to enhance the existing chloramine-T database established from previous years, and will be considered in the “body of evidence” for the purpose of developing an appropriate label claim for the use of chloramine-T in aquaculture.

Facilities, Materials, Treatment Procedures

1. Facilities

Twenty-seven fish culture facilities, including seven U.S. Fish and Wildlife Service NFH, 15 state fish hatcheries, two private fish hatcheries and three tribal hatcheries used chloramine-T to control/prevent mortality caused by various fish diseases. Water temperature during treatments at the various testing facilities ranged from 33.1 - 70.0 °F, with a mean treatment temperature of 55.9°F.

2. Chemical material

Chloramine-T (CAS No. 127-65-1) is a pure white crystal powder. All facilities used designated lots of chloramine-T provided by one of the following two manufactures: (1) Deerland Chemical, Corp., Littleton, Co. or (2) B.L. Mitchell, Inc., Greenville, MS. During CY04, a total of 3,344.8 kg of CLT was used in treatment trials conducted under INAD # 9321.

3. Treatment Methods

Chloramine-T treatments were administered using either a flow-through or standing bath treatment method. Both procedures called for accurately weighed amounts of dry chemical dissolved in an appropriate amount of non-chlorinated water. When using a flow-through system, dissolved chemical was metered into rearing units at a rate to achieve the desired treatment concentration during a 1

hr period. When using a standing bath method, water flow to the rearing unit was turned off and dissolved chemical added to the rearing unit and mixed thoroughly to ensure uniform chloramine-T concentration throughout the tank. Thorough mixing was essential to ensure there were no chloramine-T "hot spots." After the 1 hr treatment, water flow was turned on again to flush the chemical out of the rearing unit.

4. Drug dosages

During CY04, various chloramine-T doses were used. Listed below are the doses and the number of trials conducted with each dose:

1.	10 mg/L:	12 trials
2.	10 & 15 mg/L:	1 trial
3.	12 - 12.5 mg/L:	5 trials
4.	15 mg/L:	49 trials
5.	20 mg/L:	73 trials

Total		140 trials
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5. Number of treatments per disease outbreak

According to the Study Protocol, Investigators were allowed to administer chloramine-T on one, two, or three consecutive/alternate days when used to control mortality caused by BGD, and once/week when used to prevent mortality.

During CY04, the most common treatment regimen was to administered CLT on three consecutive days to control mortality in fish caused by BGD.

Fish Species Treated and Fish Diseases Involved in CY 2004 Trials

1. Species and size of fish treated

Sixteen fish species, including eight salmonids and eight non-salmonids, were treated during CY04. Treated fish ranged in length from 1.0 - 38.0 in. and the mean length of all treated fish was 6.9 in. Species treated included:

Salmonids: (1) apache trout *Oncorhynchus apache*, (2) chinook salmon *O. tshawytscha*, (3) chum salmon *O. keta*, (4) cutthroat trout *O. clarki*, (5) rainbow trout *O. mykiss*, (6) steelhead trout *O. mykiss*, (7) brook trout *Salvelinus fontinalis*, (8) lake trout *S. namaycush*

Non-salmonids: (1) channel catfish *Ictalurus punctatus*, (2) lake sturgeon *Acipenser fulvescens*, (3) largemouth bass *Micropterus salmoides*, (4) smallmouth bass *M. dolomieu*, (5) muskie *Esox masquinongy*, (6) northern pike *E. lucius*, (7) tiger musky *E. lucius x E. masquinongy*, (8) walleye *Stizostedion vitreum*.

2. Diseases treated

The disease treated most frequently was characterized as BGD. Other diagnosed diseases included external columnaris and external bacterial coldwater disease.

Data Collected

1. Pathologist's report

In CY04 a pathologist's report was submitted for 42% of the studies. Pathology reports are important for accurate interpretation of study results because they typically contain the following information:

1. A description of how the identity of disease agent(s) was verified
2. Disease identification records that confirm the presence of the disease agent
3. The name and title of the individual performing the diagnosis.

Additionally, evidence would typically be provided to document that there were no secondary infections or infestations caused by unrelated disease agents in the population of test fish.

2. Treatment response and drug accountability data

Drug receipt reports, drug use reports, diagnosis, treatment, and mortality reports (including adverse effects/toxicity observations), and fish disposition reports were prepared by study Investigators. Such reports were routed through the Study Monitor for review, and then sent to the Bozeman AADAP Office for review, data analysis and report writing, entering data into a database, and archiving in permanent files.

Based on correspondence with FDA, the following efficacy and safety technical sections have been completed:

1. Effectiveness of chloramine-T at a concentration of 12 ppm administered as a 60 min bath once per day every other day for a total of three treatments to control of mortality associated with bacterial gill disease in freshwater-reared salmonids (we refer to your file number INAD 4000 H-0071 dated July 11, 2000).
2. Safety of chloramine-T at a concentration of 20 ppm administered as a 60 min bath on three consecutive or alternate days for the control of mortality associated with bacterial gill disease in freshwater-reared salmonids (we refer to your file number INAD 4000 P-0093 dated September 13, 2002).

As a result of the completed technical sections, mortality data are no longer required when Investigators administer chloramine-T at a dosage of 12 - 20 ppm on three alternate or consecutive days for 60 min to control mortality associated with bacterial gill disease in freshwater-reared salmonids. In all other cases, collection of mortality data is still required and efforts were made to collect all such data. However, for a variety of reasons, mortality data were not always collected for the entire required data collection period. Reasons for incomplete mortality data included : 1) splitting fish into additional rearing units; and 2) stocking early life stage fish shortly after final treatment.

Discussion of Study Results

1. Relevance of study to a proposed label claim for chloramine-T

Results of CY04 trials conducted under Compassionate INAD exemption #9321 are similar to results detailed in reports previously submitted to FDA under INAD's #9321 and #4000.

2. General observations on the efficacy of CLT for the control of bacterial

diseases in salmonid and non-salmonid fish (Note: Table 1 provides a summary of all trials in which treatment appeared efficacious; Table 2 provides a summary of all trails in which treatment appeared ineffective; Table 3 provides a summary of all inconclusive trials; Table 4 provides a summary of all trials where mortality data was not required; Table 5 provides summary data for all trials; and Tables 6a and 6b provide a brief description of all trials

conducted during CY04 under INAD #9321; Table 6a lists trials sorted by study number; Table 6b is a list of trials sorted first by disease treated, second by whether treatments were efficacious or not, and lastly by fish species).

A. Efficacy at 10 mg/L chloramine-T

Fish were treated with 10 mg/L chloramine-T in 12 trials (Tables 1 - 3). Included in these 12 trials were nine trials in which chinook salmon, cutthroat trout, and rainbow trout were treated to control mortality associated with BGD; two trials in which rainbow trout and steelhead trout were treated to control mortality associated with external CWD; and one trial in which cutthroat trout were treated to control mortality associated with external columnaris disease. Treatment resulted in the following:

- 1) Of the nine trials in which BGD was diagnosed in chinook salmon, cutthroat trout, and rainbow trout; treatment in eight (89%) of the trials appeared efficacious; while treatment in the one (11%) trial involving rainbow trout was characterized as inconclusive.

- 2) Of the two trials in which external CWD was diagnosed in rainbow trout and steelhead trout; treatment in the trial involving the steelhead appeared to be efficacious; while treatment in the trial involving rainbow trout was characterized as inconclusive.

3) Treatment of cutthroat trout diagnosed with external columnaris did not appear to be efficacious.

B. Efficacy at 10 & 15 mg/L chloramine-T

One trial was conducted using 10 & 15 mg/L chloramine-T (Table 1) to control mortality in chinook salmon associated with BGD. The Investigator noted the drug dose was increased from 10 ppm on treatment day 1 to 15 ppm on subsequent treatment days. This trial appeared efficacious.

C. Efficacy at 12 - 12.5 mg/L chloramine-T

A total of five BGD trials were conducted using 12 - 12.5 mg/L chloramine-T (Table 1) on chinook salmon and rainbow trout (Tables 1, 3 & 4). Of these five trials, treatment in one (20%) of the trials involving rainbow trout appeared efficacious; treatment in one (20%) of the trials involving chinook salmon was characterized as inconclusive, and treatment in three (60%) of the trials involving rainbow trout were trials in which mortality collection and reporting were not required.

D. Efficacy at 15 mg/L chloramine-T

Fish were treated with 15 mg/L chloramine-T in 49 trials (Tables 1 - 4). Included in these 49 trials, were 43 trials in which treatments were administered to apache trout, brook trout, chinook salmon, chum salmon, coho salmon, cutthroat trout,

lake trout, rainbow trout, steelhead trout, and lake sturgeon to control mortality associated with BGD; four trials in which treatments were administered to chinook salmon and smallmouth bass to control mortality associated with external columnaris; and two trials in which treatments were administered to rainbow trout and chinook salmon to control mortality associated with external CWD (see Tables 1 - 4). Treatment resulted in the following:

1) Of the 43 trials in which BGD was diagnosed in apache trout, brook trout, chinook salmon, chum salmon, coho salmon, cutthroat trout, lake trout, rainbow trout, steelhead trout, and lake sturgeon, treatments in 41 (95%) of the trials appeared efficacious, while treatments in two (5%) trials involving rainbow trout were trials in which mortality collection and reporting were not required.

2) Treatments in all of the trials in which chinook salmon and smallmouth bass were diagnosed with external columnaris appeared to be efficacious.

3) Of the two trials in which rainbow trout and chinook salmon were diagnosed with external CWD, treatment in the trial involving rainbow trout was not efficacious, while treatment in the trial involving chinook salmon was characterized as inconclusive.

E. Efficacy at 20 mg/L chloramine-T

Fish were treated with 20 mg/L chloramine-T in 73 trials (Tables 1 - 4). Included in these 73 trials were 68 trials in which treatments were administered to chum salmon, rainbow trout, steelhead trout, musky, northern pike and tiger musky to control mortality associated with BGD; three trials in which treatments were administered to lake sturgeon, largemouth bass, and walleye to control mortality associated with external columnaris; and two trials in which treatments were administered to channel catfish to control mortality associated with external columnaris and BGD. Treatment resulted in the following results:

1) Of the 68 trials in which BGD was diagnosed in chum salmon, rainbow trout, steelhead trout, musky, northern pike, and tiger musky, treatment in 13 (19%) of the trials appeared efficacious, treatment in three (4%) of the trials involving rainbow trout were characterized as inconclusive, and treatment in 52 (77%) of the trials involving rainbow trout were trials in which mortality collection and reporting were not required.

2) Of the three trials in which external columnaris was diagnosed in largemouth bass, lake sturgeon and walleye, treatment in two (67%) of the trials involving largemouth bass and lake sturgeon appeared efficacious, while treatment in the one (33%) trial involving walleye was not efficacious.

3) Treatment in both trials involving channel catfish diagnosed with external columnaris and BGD were characterized as inconclusive.

3. Observed Toxicity

No toxicity or adverse effects relating to CLT treatment were reported in 139 trials; however, in the remaining trial, the pathologist reported indications of a “toxic response” to a chemical treatment in test fish following the treatment period. The indication was based on histological evaluation of kidney tissue, and it was suspected that this indication had resulted from some environmental contamination that may have been present in hatchery water at some time during the fishes life.

Summary of Study Results

Chloramine-T was used at dosages ranging from 10 - 20 mg/L in 140 trials. Fish were treated one, two, or three times to control mortality, and once per week when used to prevent mortality. Sixteen different species of fish were treated and trials involved approximately 14.9 million fish. Treated fish ranged in size from 1.0 - 38.0 in. Water temperature during treatment ranged from 33.1 - 70.0°F, with a mean treatment temperature of 55.9°F. Treatment in approximately 51% of trials appeared efficacious, treatment in 2% of the trials appeared ineffective, treatment in 6% of the trials were characterized as inconclusive, and in the remaining 41% of the trials, mortality data collection and reporting were not required. There was no evidence of toxicity or

adverse effects related to CLT treatment reported in all trials. Data from the CY04 trials support the results of previous Annual Report submissions under INAD #9321 and INAD #4000 that indicate that chloramine-T treatment is safe and effective to control/prevent mortality in a variety of fish species caused by external bacterial infections such as BGD. As a result of the lack of quality criteria, such as dose verification, use of controls, replicates, and randomization, it is understood that these data will be considered as ancillary data, and that pivotal efficacy studies are needed to definitively demonstrate chloramine-T efficacy for the treatment of BGD. However, the ancillary data described above should provide useful, corroborative data to help support a label claim for the use of chloramine-T to control mortality associated with BGD in a variety of fish species. Although it is anticipated that the majority of future efficacy data collected under INAD #9321 will also be ancillary data, efforts will be made to improve the quality of data whenever possible, with particular attention paid to the use of untreated control fish, dose verification, and the inclusion of fish pathologist reports.

References

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Table 1. Summary of Year 2004 Chloramine-T Efficacy Results - Efficacious Studies

Hatchery	Number of efficacious trials	Fish Size (in.)	Fish Species	Number of Fish	Disease	Number of treatment days	Dose (mg/L)	Temp. (°F)
Darrah Springs SFH	1	3.00	RBT	112,000	BGD	1	10	57.0
Hayspur SFH	3	6.6 - 10.4	CUT	5,644	BGD	3	10	52.0
Lyons Ferry SFH	2	2.90	FCS	259,000	BGD	3	10	53.0
Nampa SFH	2	2.0 - 7.6	RBT	124,938	BGD	3	10	59.0
Magic Valley Steelhead SFH	1	5.00	STT	62,000	CWD	3	10	58.0
Diru Creek Hatchery	1	3.20	CKS	155,700	BGD	3	10&15	50.0
Tonto Creek SFH	1	9.00	RBT	95,564	BGD	2	12.5	50.0
Pequest SFH	1	6.10	BKT	25,000	BGD	1	15	50.0
Genoa NFH	1	5.50	SMB	6,000	Columnaris	1	15	54.0
Pendills Creek NFH	1	2.57	LAT	943,000	BGD	2	15	53.0
Alchesay-Williams Creek NFH	3	2.7 - 14.2	APT	80,438	BGD	3	15	52.0
Canyon Creek/Silver Creek SFH Complex	3	7.8 - 8.5	APT	125,781	BGD	3	15	64.0
Pequest SFH	1	5.50	BKT	13,500	BGD	3	15	50.0
Diru Creek Hatchery	1	1.50	CHS	641,267	BGD	3	15	50.0
Keta Creek Hatchery	3	1.4 - 1.5	CHS	662,000	BGD	3	15	48.0

Table 1. Summary of Year 2004 Chloramine-T Efficacy Results - Efficacious Studies - cont.

Hatchery	Number of efficacious trials	Fish Size (in.)	Fish Species	Number of Fish	Disease	Number of treatment days	Dose (mg/L)	Temp. (°F)
Mixsawbah SFH	2	2.0 - 2.7	CKS	263,660	BGD	3	15	48.2 - 50.0
Stillaguamish Tribal Hatchery	1	28.00	CKS	141	Columnaris	3	15	56.0
Mixsawbah SFH	3	2.0 - 2.4	COS	274,754	BGD	3	15	50.0 - 51.0
Alchesay-Williams Creek NFH	1	4.25	CUT	100,000	BGD	3	15	52.0
Garrison Dam NFH	1	4.90	CUT	43,000	BGD	3	15	50.0
Pendillis Creek NFH	4	1.0 - 3.4	LAT	1,434,000	BGD	3	15	46.0 - 53.0
Genoa NFH	1	1.00	LST	49,998	BGD	3	15	60.0
Pittsford NFH	1	1.00	LST	5,800	BGD	3	15	60.8
Alchesay-Williams Creek NFH	1	3.40	RBT	44,500	BGD	3	15	52.0
Ennis NFH	2	20.00	RBT	20,701	BGD	3	15	54.0
Garrison Dam NFH	1	1.00	RBT	144,000	BGD	3	15	55.0
Pequest SFH	2	6.7 - 7.2	RBT	26,000	BGD	3	15	50.0
Bodine SFH	3	1.5 - 1.9	STT	333,012	BGD	3	15	54.0 - 54.7
Mixsawbah SFH	5	1.5 - 3.3	STT	652,304	BGD	3	15	52.0 - 54.0
Similkameen Rearing Pond	1	4.80	CKS	585,010	Columnaris	7	15	39.0

Table 1. Summary of Year 2004 Chloramine-T Efficacy Results - Efficacious Studies - cont.

Hatchery	Number of efficacious trials	Fish Size (in.)	Fish Species	Number of Fish	Disease	Number of treatment days	Dose (mg/L)	Temp. (°F)
Jordan River NFH	1	1.50	LAT	2,700,000	BGD	11	15	48.0
Eastbank SFH	1	38.00	CKS	1,427	Columnaris	18	15	53.9
Keta Creek Hatchery	3	1.3 - 1.4	CHS	725,000	BGD	3	20	46.0 - 48.0
Genoa NFH	1	1.50	LMB	15,000	Columnaris	3	20	70.0
	1	3.00	LST	28,000	Columnaris	3	20	70.0
Hackettstown SFH	2	2.5 - 10.0	MUE	10,150	BGD	3	20	52.0 - 68.0
	1	1.10	MUH	25,000	BGD	3	20	68.0
	1	2.30	NOP	15,000	BGD	3	20	68.0
Alsea SFH	4	3.9 - 5.6	RBT	493,871	BGD	3	20	64.0 - 66.0
	1	4.90	STT	72,350	BGD	3	20	52.0
Mixsawbah SFH	1	2.91	STT	132,200	BGD	3	20	52.5

Table 2. Summary of Year 2004 Chloramine-T Efficacy Results - Ineffective Studies

Hatchery	Number of non-efficacious trials	Fish Size (in.)	Fish Species	Number of Fish	Disease	Number of treatment days	Dose (mg/L)	Temp. (°F)
Garrison Dam NFH	1	8.41	CUT	42,791	Columnaris	3	10	60.0
Canyon Creek/Silver Creek SFH Complex	1	5.50	RBT	219,000	CWD	2	15	50.0
Genoa NFH	1	6.30	WAE	1,600	Columnaris	3	20	52.0

Table 3. Summary of Year 2004 Chloramine-T Efficacy Results - Inconclusive Studies

Hatchery	Number of inconclusive trials	Fish Size (in.)	Fish Species	Number of Fish	Disease	Number of treatment days	Dose (mg/L)	Temp. (°F)
Canyon Creek/Silver Creek SFH Complex	1	2.50	RBT	300,000	CWD	3	10	50.0
Nampa SFH	1	7.64	RBT	59,922	BGD	3	10	59.0
Crystal Lake Hatchery	1	4.70	CKS	276,700	BGD	3	12	35.8
Similkameen Rearing Pond	1	4.38	SUS	267,458	CWD	3	15	33.1
Jones Hatchery	2	2.0 - 3.0	RBT	107,000	BGD	1	20	59.0
Jones Hatchery	1	8.80	RBT	25,000	BGD	2	20	59.0
A.E. Wood SFH	2	9.00	CCF	20,000	Columnaris & BGD	3	20	58.0 - 64.0

Table 4. Summary of Year 2004 Chloramine-T Efficacy Results -Studies where efficacy data was not needed

Hatchery	Number of trials where mortality was not needed	Fish Size (in.)	Fish Species	Number of Fish	Disease	Number of treatment days	Dose (mg/L)	Temp. (°F)
Ennis NFH	3	15.1 - 22.5	RBT	15,035	BGD	3	12	54.0
Alchesay-Williams Creek NFH	1	3.80	RBT	44,300	BGD	3	15	52.0
Ennis NFH	1	9.98	RBT	4,000	BGD	3	15	54.0
Jones Hatchery	52	2.0 - 14.5	RBT	1,982,500	BGD	3	20	59.0

Table 5. Summary Data Regarding Year 2004 Chloramine-T Efficacy Studies

Total Number of Fish Treated: **14,872,016**

Number of fish treated in efficacious studies 11,506,710

Number of fish treated in non-efficacious studies 263,391

Number of fish treated in inconclusive studies 1,056,080

Number of fish where efficacy was not needed 2,045,835

Total Number of Studies: **140**

Rearing Units in Efficacious Studies 71

Rearing Units in Non-efficacious Studies 3

Rearing Units in Inconclusive Studies 9

Rearing Units where efficacy was not needed 57

Treatment Regimens and Frequency Used:

10 mg/L - one time 1 trial

10 mg/L - three times 11 trials

10 & 15 mg/L - three times 1 trial

12 mg/L - three times	4 trials
12.5 mg/L - three times	1 trial
15 mg/L - one time	2 trials
15 mg/L - two times	2 trials
15 mg/L - three times	42 trials
15 mg/L - seven times	1 trial
15 mg/L - eleven times	1 trial
15 mg/L - eighteen times	1 trial
20 mg/L - one time	2 trials
20 mg/L - two times	1 trial
20 mg/L - three times	70 trials

Treatment Water Temperature (°F):

Temperature Range	33.1 - 70.0
Mean Temperature	55.9

Size of Treated Fish (in.):

Size Range	1.0 - 38.0
Mean Length	6.9

Species Treated:

Salmonids:

apache trout *Oncorhynchus apache*

chinook salmon *O. tshawytscha*

chum salmon *O. keta*

cutthroat trout *O. clarki*

rainbow trout *O. mykiss*

steelhead trout *O. mykiss*

brook trout *Salvelinus fontinalis*

lake trout *S. namaycush*

Non-salmonids:

channel catfish *Ictalurus punctatus*

lake sturgeon *Acipenser fulvescens*

largemouth bass *Micropterus salmoides*

smallmouth bass *M. dolomieu*

muskie *Esox masquinongy*

northern pike *E. lucius*

tiger musky *E. lucius* x *E. masquinongy*

walleye *Stizostedion vitreum*.
