

FINAL

OBJECTIVE 1

Disease Risk Assessment

Contribution No. 1 to an *Evaluation of an Experimental Re-introduction of Sockeye Salmon into Skaha Lake: YEAR 3 of 3*

Presented to: Colville Confederated Tribes

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EXECUTIVE SUMMARY

The Okanagan Nation and tribes in the U.S. have proposed re-introducing sockeye salmon into Okanagan Lake. To investigate the risks involved, a multi-agency workshop recommended an experimental re-introduction into Skaha Lake. Risks might include competition between sockeye and kokanee, the introduction of exotic species, and the introduction of new diseases. This report summarizes the findings from the third year of a three-year disease risk assessment.

The first task was to compare the disease and infection status of fish above and below McIntyre Dam (the present limit of sockeye migration). Additional tasks included determining if lake conditions would contribute disease risks and assessing whether re-introduced fish were likely to interact with resident fish or extend the range of pathogens.

The disease agents of particular concern are:

- ◆ infectious pancreatic necrosis virus (IPNV),
- ◆ infectious haematopoietic necrosis virus type 2 (IHNV type2),
- ◆ erythrocytic inclusion body syndrome virus (EIBSV),
- ◆ the whirling disease agent (*Myxobolus cerebralis*), and
- ◆ the ceratomyxosis agent (*Ceratomyxa shasta*).

The Okanagan Nation Fisheries Commission was responsible for collecting fish from above and below McIntyre Dam, and, in year 2002, the number of fish collected surpassed the target of 720 fish from each area, although below the Dam, there was a shortfall of 11 fish in the non-salmonid fish sample. A wide variety of species was captured including sockeye, kokanee, whitefish and 11 species of non-salmonids.

Provincial and federal fish health laboratories performed the laboratory analyses. All of the virus isolates obtained appeared to be IHNV type I. However, IHNV type I is not a concern because it is already found above McIntyre Dam.

There was no indication of IPNV in any of the samples tested. Sampling for the erythrocytic inclusion body syndrome (EIBS), indicative of the presence of the EIBS virus, was not done this year because sampling for it in years 2000 and 2001 showed it to be widely distributed in fish above and below McIntyre Dam.

All adult sockeye samples tested in 2002 again proved negative for the whirling disease agent (*Myxobolus cerebralis*) and the ceratomyxosis agent (*Ceratomyxa shasta*). Live box exposures in 2002 of sentinel rainbow trout susceptible to these agents were conducted in spring but the results are not yet available. However, results from the fall 2001 exposures are now available. They failed to detect *M. cerebralis* above and below the Dam but detected *C. shasta* at one site below the Dam. Results for *C. shasta* testing in kokanee and whitefish collected in 2000 and 2001 above and below the Dam were delayed by an equipment failure but are now available. They proved negative for *M. cerebralis* but they detected *C. shasta* in kokanee above the Dam in 2000. Results of the 2002 exposures plus those of an additional live box test planned for the spring of 2003 will be presented in an addendum to this report later in 2003. (The planned live box test in 2003 was necessitated when the fall 2002 test proved impractical because of the unavailability of suitable sentinel test fish). Taken together, results for the myxosporidian

parasites to date suggest that *C. shasta* occurs both below and above the Dam but that *M. cerebralis* does not occur in either of these areas.

Samples of sockeye spawners, collected in 2001 and 2002 in the Okanagan River below McIntyre Dam as part of an unrelated study, proved positive for a myxosporidian parasite, *Parvicapsula minibicornis*. This parasite was not included in the list of “disease agents of particular concern” because it has only recently given cause for concern (it recently caused significant pre-spawning mortalities in sockeye in the Fraser River). Whether the parasite also occurs in fish above McIntyre Dam is unknown, but its presence in sockeye below the Dam, taken together with its pathogenicity potential, will have to be considered when making a decision on whether to proceed with the introduction of sockeye into Skaha Lake. Actions to be taken as a result of the *P. minibicornis* finding are discussed.

Limnological data for Okanagan and Skaha Lakes in 2002 revealed no extraordinary risk of predisposing fish to disease. Both lakes become stratified with a warm epilimnion and a cooler hypolimnion in summer followed by an overturn. Thus salmonids should be able to reside in non-stressful oxygen and temperature conditions all year long. However, Skaha Lake, which is much smaller and shallower than Okanagan Lake, may be slightly stressful to salmonids in very warm years.

Kokanee in Okanagan and Skaha Lakes have declined drastically due to reduced nutrient input and the introduction of mysids which compete with kokanee for zooplankton. There is some speculation that sockeye would add to the competition and could adversely affect the health of kokanee because starving fish are less likely to be robust and disease resistant. However, the decomposing carcasses of the spent sockeye would provide nutrients from the sea which may mitigate any negative effects.

Sockeye progeny will likely have eco-niche requirements and behaviour patterns similar to those of kokanee. Thus cross infections are possible. Cross infections may also be possible between salmonids and non-salmonids. However the important question is whether any new pathogens are likely to be introduced. The present pathogen survey is intended to provide answers to this important question but some additional testing and/or studies may be required to deal with the recent finding of *P. minibicornis* in sockeye below the Dam.

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ADDENDUM to OBJECTIVE 1 Disease Risk Assessment

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1.0 INTRODUCTION

1.1 Project Background

The Okanagan Nation Fisheries Commission (ONFC) has been investigating the risks involved in re-introducing sockeye salmon into Skaha Lake. This report summarizes the findings from YEAR 3 of 3 of the disease risk assessment.

The disease risk assessment compares disease infection status of salmonids and non-salmonids above and below McIntyre Dam. The disease agents identified that are of concern and examined this year are:

- infectious pancreatic necrosis virus (IPNV),
- infectious haematopoietic necrosis virus, type 2 (IHNV, type 2),
- the whirling disease agent (*Myxobolus cerebralis*), and
- the ceratomyxosis agent (*Ceratomyxa shasta*)

The salmonid samples consisted of kokanee and some whitefish above McIntyre Dam and sockeye and some whitefish below McIntyre Dam. The non-salmonids were also collected both above and below the dam and consisted of as many species as possible. Salmonids were tested for all of the above disease agents except for kokanee and whitefish which were not tested for *M. cerebralis*. The whirling disease agent was specifically tested for by exposing susceptible rainbow trout, held in live-boxes, to suspect water. These rainbow trout were also tested for *C. shasta*. The non-salmonids collected above and below the Dam were tested only for IPNV and IHNV.

1.2 Project Area

As in the previous two years, samples were taken above and below McIntyre Dam within the Okanagan Basin, specifically from Okanagan Lake to Osoyoos Lake to determine if the fish below the dam are carrying infectious agents not present in fish above the dam. Figure 1 shows the sampling locations and indicates the type and life stage of the fish targeted.

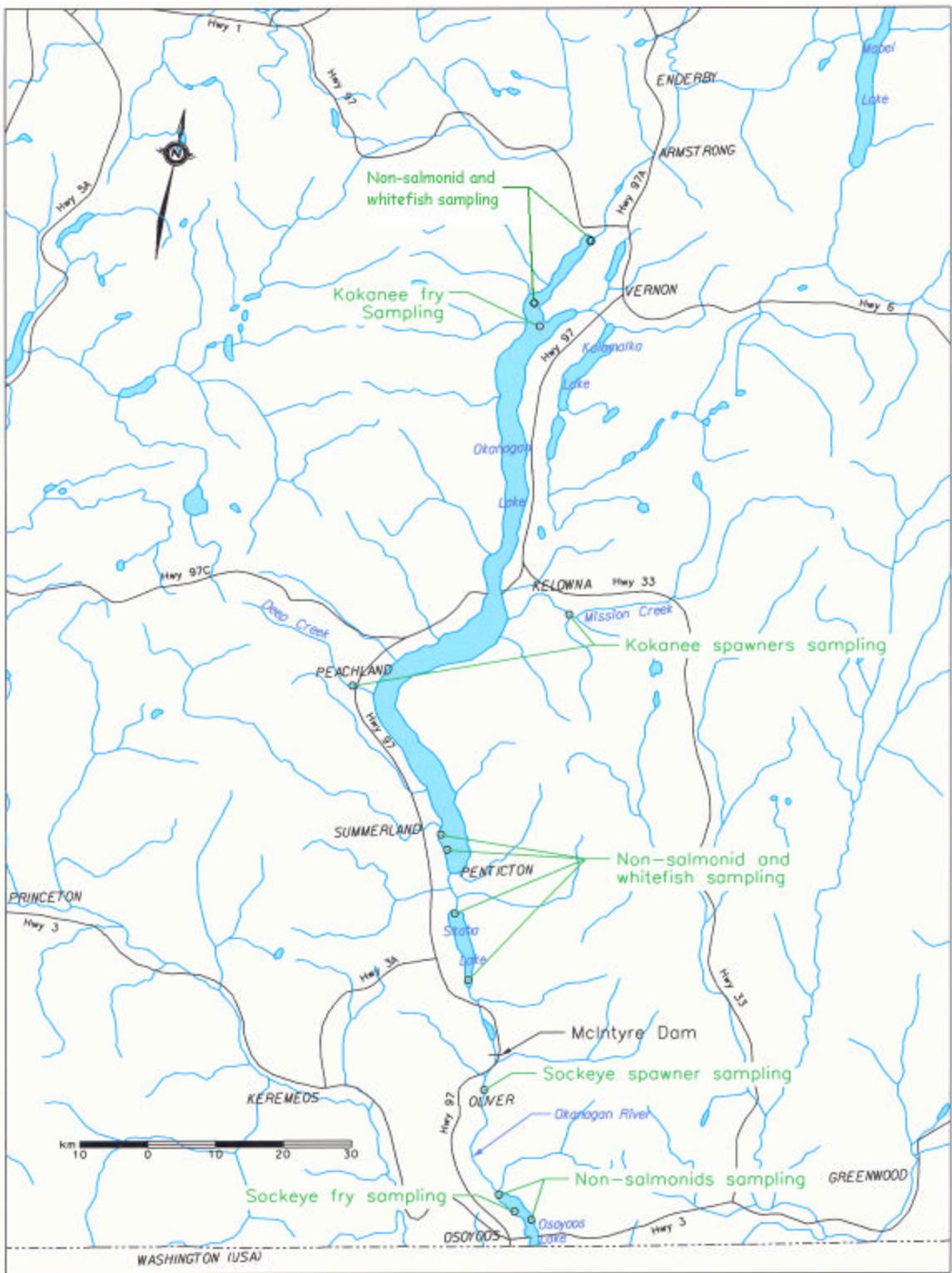


Figure 1. Overview of areas sampled and type of fish targeted

1.3 Project Objectives

The project objectives are outlined below:

1. Compare the disease and infection status of fish above and below the dam,
2. Determine if there are environmental conditions specific to the lakes in question that would either put fish at extraordinary risk for developing disease or that would maintain introduced infectious agents, and
3. Assess the opportunity for re-introduced fish to interact with susceptible resident fish or to extend the distribution of important pathogens.
4. It was requested at the sampling review meeting in YEAR 2 (March 1st, 2002) that an extra 60 non-salmonid fish be collected below the dam

2.0 METHODS

Sampling protocol was originally designed by Dr. Larry Hammel and Dr. Trevor Evelyn and was modified, as deemed appropriate, at the end of every sampling year at a multi-agency workshop hosted by the ONFC and the Colville Confederated Tribes (CCT). Field sampling was conducted by the ONFC and laboratory analyses were carried out by the BC MoWLAP for non-anadromous fish and by DFO for anadromous fish.

A review meeting was held on March 1st, 2002 and it was decided that sampling for YEAR 3 duplicate YEAR 2 with the following exceptions:

- discontinue blood smear collection and examinations (i.e.,sampling for Erythrocytic Inclusion Body Syndrome Virus (EIBSV)). The reason: EIBSV was shown in 2001 and 2002 to be widely distributed in fish both above and below the dam.
- collect an additional 60 non-salmonids below McIntyre Dam. The reason: to make up for a shortfall in the numbers of non-salmonids sampled below the dam in the years prior to 2002.

The collection of at least 720 fish from above the McIntyre Dam sampling region was duplicated from YEAR 2. The collection of at least 780 fish from below the dam sampling region was completed. Of the 720 fish from above the dam 360 were to be salmonids at various life stages and 360 were to be non-salmonids representing as many species as possible with no single species accounting for more than 25% of the sample (see Table 1). The sample below the dam was to consist of 360 sockeye at various ages and 420 non-salmonids with the same requirements as for the non-salmonids above the dam.

Table 1. Disease risk assessment sampling plan 2002

ABOVE MCINTYRE DAM

Fish species	Laboratory Responsible	Number of fish recommended	Test for	Sampling details
Salmonids, mostly kokanee salmon	Recent post-spawners	MOWLAP	150	IPNV, IHNV, and <i>C.shasta</i> Make up the total with other salmonids if necessary
	2-month old fry	MOWLAP	150	IPNV, IHNV, and <i>C. shasta</i>
	all ages (whitefish)	MOWLAP	60	IPNV, IHNV, and <i>C. shasta</i>
Non-salmonids	Migratory & Non-migratory fish	MOWLAP	360	IPNV, IHNV Collect as many species and age groups as possible from as many areas as possible. No single species should represent more than 25% of the sample.
TOTAL		720		

BELOW MCINTYRE DAM

Fish species	Laboratory Responsible	Number of fish recommended	Test for	Comments
Salmonids, mostly sockeye salmon	Recent post-spawners	DFO	180	IPNV, IHNV, <i>C.shasta</i> and <i>M. cerebralis</i> Make up the total with other salmonids if necessary
	2-month old fry	DFO	180	IPNV, IHNV, <i>C. shasta</i>
Non-salmonids	Migratory & Non-migratory fish	MOWLAP	420	IPNV, IHNV Collect as many species and age groups as possible from as many areas as possible. No single species should represent more than 25% of the sample.
TOTAL		780		

2.1 Field Sampling Methods

Samples were collected by the ONFC and sent to the provincial and federal laboratories. Resident salmonids and non-salmonids were sent to the MoWLAP laboratory Fish Health Unit and anadromous salmonids were sent to the DFO laboratory at the Pacific Biological Station. Samples were usually received at the laboratory on the day following field collection.

All non-salmonids were collected using a boat electroshocker at selected sites in Okanagan, Skaha and Osoyoos Lakes. The Smith-root model 7.5 GPP electrofishing boat was supplied and operated by the Colville Confederated Tribes.

Kokanee spawners were collected as post-spawners on the spawning grounds of Deep Creek and Mission Creek, tributaries to Okanagan Lake. Kokanee fry were caught by a local commercial Mysid shrimp operator in conjunction with MoWLAP at north end of Okanagan Lake. It did not prove feasible to collect kokanee alevins and emergent fry even though this might have enhanced the detecting of any IPNV present. However, had this virus been present, it should also have been detected using kokanee spawners. Sockeye spawners were collected on the spawning grounds downstream of McIntyre Dam in the Okanagan River by gill netting. Sockeye fry were collected by trawling in Osoyoos Lake.



Photo 1. Processing of sockeye spawners with DFO



Photo 2. Collection of kokanee fry with MoWLAP

2.2 Live box testing for *Myxobolus cerebralis* and *Ceratomyxa shasta*

Testing for the presence of *M. cerebralis* and *C. shasta* in waters above and below McIntyre Dam was done by exposing susceptible sentinel fish (rainbow trout) held in live-boxes to suspect water above and below McIntyre Dam. The alternate hosts of *M. cerebralis* (*Tubifex tubifex*) and *C. shasta* (*Manayunkia speciosa*) produce and shed the life-stages (TAMs) of the two parasites that are infectious for salmonids.

Sampling was to be conducted as in YEAR 2, with spring and fall exposures when the temperatures were between 9 and 15 degrees Celsius. The ONFC was able to complete the spring exposure, which occurred from May 6 to May 27, 2002. The fall exposure was not attempted because appropriate-size sentinel fish proved unavailable. It was then decided among the disease experts that a spring 2003 exposure should be conducted to replace the missed fall 2002 exposure. A spring exposure was also considered to be more likely to yield positive results than a fall exposure for biological reasons; in addition, during the first spring exposure, testing for *C. shasta* was overlooked for some kokanee samples and not done. If a spring 2003 exposure is done, the results will not be ready until December 2003. The results will be forwarded as an addendum to this report once completed. The fall 2001 exposure results are being included in the present report as they were not ready at the time the YEAR 2 report went into print.

For the live box exposures, one thousand rainbow trout were used from a stock known to be free of *M. cerebralis* and *C. shasta*. One hundred fish in each of 8 live-boxes were exposed to the test waters and 200 fish were held as unexposed controls in Skaha Hatchery. The fish were approximately 45 days in age.

Figure 2 shows the eight sites in the Okanagan River where the live boxes were placed once temperatures reached 9 degrees Celsius. The live boxes were placed in areas where water flow was sluggish but the oxygen levels adequate to satisfy the needs of the fish. The eight live boxes were separated into four sites above and four sites below McIntyre Dam. We aimed for 25 days of exposure but actual exposures in 2002 lasted only 22 days due to high mortality and rising temperatures. The fish were then grown out in the Skaha Hatchery for 1500 Thermal units when their tissues were sampled and sent to the MoWLAP laboratory for testing.

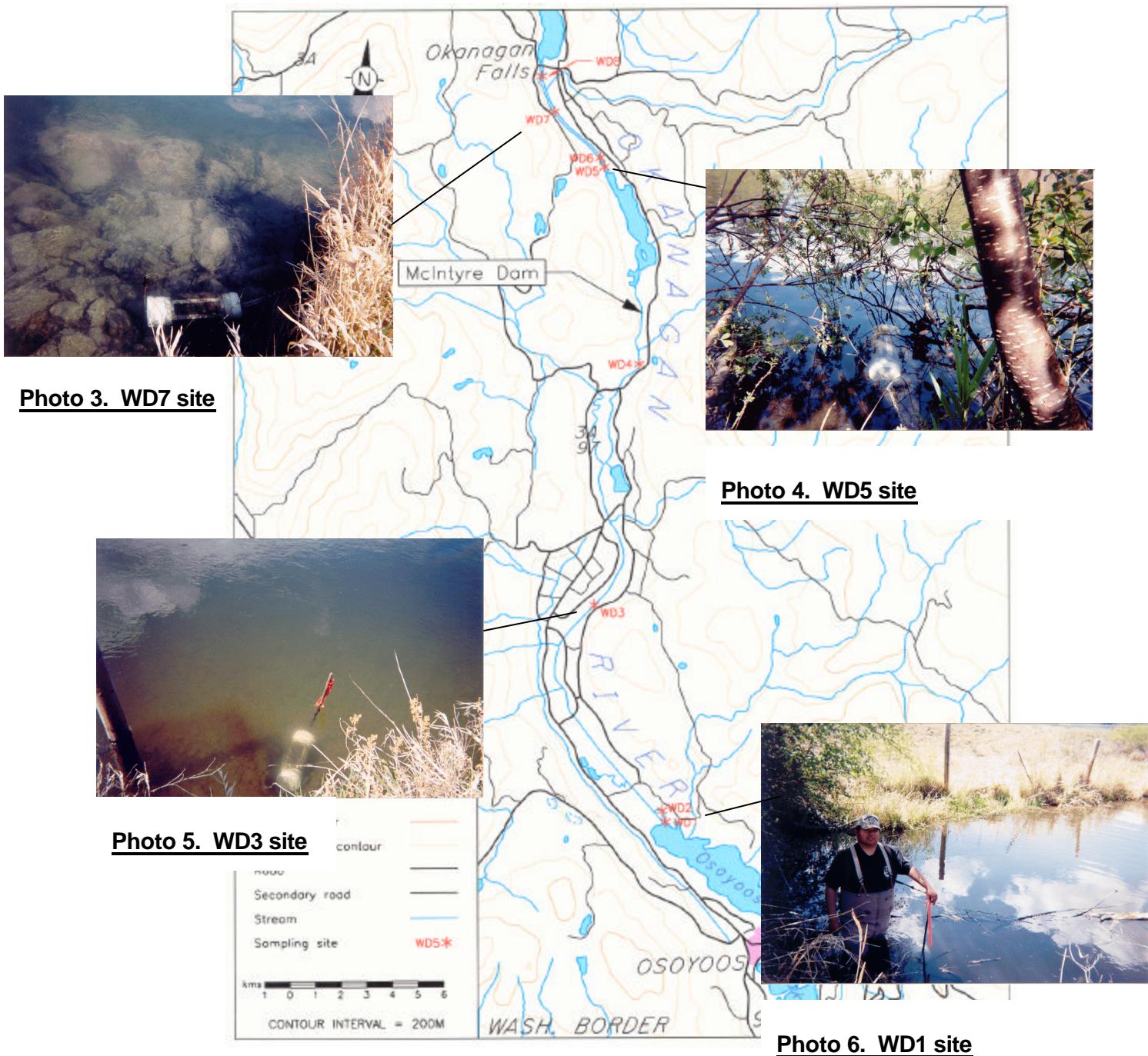


Figure 2. Whirling disease live box exposure sites

2.3 Laboratory methods used by Fisheries and Oceans Canada

In 2002, Fisheries and Oceans Canada (DFO) laboratory processed sockeye fry and spawners. In addition to the required number of sockeye fry and spawners, DFO processed sockeye eggs, alevins and emergent fry. Samples were shipped on ice and processed for virology within 24 hr of arrival at the Pacific Biological Station. If samples could not be processed within a period of 24 hours, they were stored at -80 C until assays were conducted. Dates of collection and assay are noted for each set of samples tested in the laboratory (see tables in Appendix D).

2.3.1 Virology

The majority of the samples were assayed individually using the plaque assay technique in order to determine viral titers present in each fish. If pooling of any samples was done it was recorded on the summary sheets. The following tissues were assayed from the different life stages.

- Eyed eggs
- Emerging fry-whole fish
- Fry (2-4cm)-gills plus viscera
- Adults-reproductive fluid and anterior kidney processed separately

Tissues were homogenized in Earle's balanced salt solution (EBSS) to prepare a 2% w/v solution. The homogenate was centrifuged at 3000 x g for 10 minutes and an additional 10 fold dilution prepared to produce a 0.2% suspension. Ovarian fluid and milt were diluted 1:2 and 1:20 with EBSS. Dilutions prepared from samples were inoculated (0.1ml) into wells containing monolayers of EPC and CHSE-214 cells. The cells were incubated at 15 C and observed 2-3 times per week for a period of 3 weeks for CPE. If CPE occurred supernatant from the affected wells was transferred on to new monolayers and resulting virus isolates were stored at -80 degrees Celsius.

The indirect fluorescent antibody technique (IFAT) was used to confirm the virus isolates as IHNV and to determine if any were IHNV Type II. Cell cultures infected with virus isolates from individual fish were tested with DiagXotics IHN monoclonal antibodies 14D (universal), 105B (Type II specific), and IPN panspecific monoclonal antibody.

2.3.2 Parasitology

Laboratory tests for the detection of *M. cerebralis* and *C. shasta* followed the procedures outlined in the procedures for the detection of certain myxosporidian spores as described in the Canadian Fish Health Protection Regulations. *M. cerebralis* - the pepsin/trypsin digest method. *C. shasta* - microscopic examination of smears.

2.4 Laboratory methods used by the Ministry of Water, Land and Air Protection

The MoWLAP laboratory processed all non-salmonid fish and resident salmonid fry and spawners. MoWLAP also processed the sentinel fish used for detecting *M. cerebralis* and *C. shasta*. If the samples could not be processed within 24 hours of arrival at the laboratory they were stored at -80 degrees Celsius.

2.4.1 Virology

All virology assays were conducted on CHSE-214 and EPC cells according to the methods laid out in the Fish Health Protection Regulations Manual of Compliance. Fish were pooled in three's, on average, using the same species and life stage. The following tissues were retained for analysis for the different life stages;

- Fry (2-4cm): retain gills, but discard head anterior to gills and tail posterior to the vent,
- Fingerlings (4-10cm): remove and retain the gills, gastro-intestinal tract, kidney, spleen and liver,
- Fingerlings (>10cm): remove and retain the kidney, spleen, pyloric ceaca, pancreas and gills.

Tissue homogenates were then inoculated onto the CHSE-214 and EPC cells and incubated for one hour and then over-laid with Hepes Minimum Essential Medium with 10% fetal bovine serum. Assays ran in an incubator for 3 weeks. Assays were examined three times a week for possible CPE. All suspect positives were re-inoculated onto CHSE-214 cells grown on circular glass cover slips. Once CPE developed, cover slips were fixed and stained using IFAT procedures to identify the virus. Samples with CPE were tested with IHNV and IPNV antisera.

2.4.2 Parasitology

Laboratory tests for the detection of *C. shasta* used the PCR method described by K.K. Peters, Boxeman Fish Health Center, Bozeman MT. Fish were pooled in groups of five. In addition, wet mounts for the detection of *C. shasta* spores were prepared to be used for confirmation if required. *C. shasta* testing was conducted on salmonids only.

Detection of *M. cerebralis* was done using the Pepsin-Trypsin Digest Method according to methods described in the American Fisheries Society Bluebook, "Suggested procedures for the detection and identification of certain finfish and shellfish pathogens, fourth edition, 1994". Fish were pooled in groups of five or less within each test group. *M. cerebralis* testing was done only on the sentinel rainbow trout used in the live box exposures.

3.0 RESULTS

The field season began in February and ended in November 2002. Above McIntyre Dam the ONFC was able to collect the required number of non-salmonids and two-month old kokanee fry. This year, it proved difficult to obtain all the required whitefish above the dam so an additional 10 spawning kokanee were collected, which when added together met the salmonid requirement. Below McIntyre Dam all of the sockeye salmon life stages required for the year, plus additional samples of sockeye eggs, alevins and emergent fry, were collected. Due to a clerical error that was caught too late to correct, ONFC was unable to collect the required number of non-salmonids below the dam. It came close to the usual annual target for non-salmonids (349 fish collected instead of 360) but it fell short of the 420 fish hoped for in 2002. The pathogen findings by the DFO and the MoWLAP laboratories on the sampled fish are given in Appendix C and Appendix D, respectively. Table 2 provides information on the number of fish and species collected, and on when the fish were collected for analysis.

3.1 Whirling disease live box exposures

The fall 2001 results are presented in this report because they were not available in time to be included in the YEAR 2 report. As described in the YEAR 2 report, the water temperatures decreased over the 25-day exposure period, which was expected for this time of year. The water temperatures ranged from approximately 20 degrees Celsius to 5 degrees Celsius. Over the 25day exposure, fish mortality was low and no vandalism occurred. The laboratory analysis showed none of the controls to be positive for *M. cerebralis* or *C. shasta*. In addition, none of the exposed fish were positive for *M. cerebralis*. However, a number of fish from exposure site 2 were positive for *C. shasta*. Site 2 was one of four sites located below McIntyre Dam. Details of the findings are given in Appendix A.

In 2002, the live box exposure was performed only in the spring (May 6 to May 27, 2002), for reasons outlined earlier. Temperatures collected while live boxes were in the river ranged from 8.9 to 18.8 degrees Celsius and are presented in Appendix B. During the spring exposure, conditions proved stressful and unsuitable for the sentinel fish. At sites 5 and 1 mortality was 100%, while the rest of the live boxes had fairly high mortality. Due to mortality and rising temperatures, the traps were pulled 3 days earlier than planned (i.e., in 22 rather than 25 days). Results will be included in an addendum to this report later in 2003.

Table 2. Disease risk summary of sampling results**ABOVE MCINTYRE DAM**

Fish species		Number of fish recommended	Fish Collected	Collection details	Collection times
Salmonids: Kokanee	Recent post-spawners	150	161	Collected from Mission Creek & Deep Creek spawning channels (10 from Skaha Lake)	Sept. & Nov. 2002
	2 month old fry	150	150	Mysid shrimp harvest boat in the North basin on Okanagan Lake	July 2002
Whitefish	various ages	60	50	Electrofishing boat collected in Okanagan and Skaha Lake	3 fish - April 16 fish - August 31 fish - Nov.
Non-salmonids	yellow perch, northern pike minnow, suckers, peamouth chub, prickley sculpin, pumpkin seed, smallmouth bass and red side shiner	360	364	Electrofishing boat collected in Okanagan and Skaha Lake	72 fish - April 228 fish – June 64 fish - August
TOTAL		720	725		

BELOW MCINTYRE DAM

Fish species		Number of fish recommended	Fish collected	Collection details	Collection times
Salmonids mostly sockeye	Recent post-spawners	180	180SK 8 KO	Collect from Okanagan River Channel near Oliver with DFO	Oct. 2002
	2-4 month old fry	180	184	trawling in Osoyoos Lake ONFC	June 2002 August 2002
	Eggs	Undetermined	40SK	Hydraulic sampling ONFC	February 2002
	alevins	Undetermined	260SK	Hydraulic sampling ONFC	Feb. & March 2002
	Emergent fry Various ages	Undetermined 60	120SK 77WF	Emergence fyke netting ONFC	April 2002
Whitefish	Yellow perch, smallmouth bass, largemouth bass, northern pike minnow, blue gill, prickley sculpin, pumpkinseed, black crappie, suckers, and peamouth chub	420	349	Electrofishing boat in Osoyoos Lake	151 fish - April 125 fish – June 150 fish - August.
TOTAL		420	1218		

3.2 Fisheries and Oceans Canada laboratory results

The DFO laboratory processed 180 sockeye spawners and 184 sockeye fry (two - four months old). In addition the laboratory also processed sockeye eggs (40), alevins (260) and emergent fry (120).

There was no indication of either IHNV or IPNV present in the sockeye eggs, alevins, emergent fry or the two-month old sockeye fry. IHN virus was detected only in the sockeye spawners (see Appendix C for details). Tests of the sockeye spawners for *M. cerebralis* and *C. shasta* proved negative (see Appendix C for the detailed results).

As part of another study unrelated to the present one, DFO also tested a number of sockeye spawners for the myxosporidian parasite, *Parvicapsular minibicornis*. Kidney samples of sockeye collected in 2001 and 2002 from the Okanagan River below McIntyre Dam, proved positive for the parasite using a PCR technique specific for the parasite. In 2001, 8 of 40 sockeye sampled were positive while in 2002 28 of 40 sockeye sampled were positive.

3.3 Ministry of Water, Land and Air Protection laboratory results

The MoWLAP laboratory processed 151 kokanee spawners and 150 two-month old kokanee fry for IHNV, IPNV and *C. shasta*. IHNV was the only virus detected in these fish and it occurred only in the spawners. Tests on these fish for *C. shasta* proved negative (see Table 3, Appendix D for details).

All whitefish caught and processed were tested for IHNV, IPNV and *C. shasta* whether they came from above or below McIntyre Dam. All whitefish proved to be negative for the three pathogens (see Table 3, Appendix D for details).

The MoWLAP laboratory received 349 non-salmonids for processing and testing for IHNV and IPNV. No virus was detected in any of the non-salmonids sampled. See Table 3, Appendix D for detailed results.

4.0 DISCUSSION OF RESULTS

4.1 Pathogen Survey

As in past years, fish sample collecting during year 2002 went off well. The sampling commenced, as planned, in February (with the collection of sockeye eggs and yolk sac sockeye) and ended in November (with the collection of kokanee post-spawners). This year, it was also possible to accomplish live box exposures for detecting the presence of *M. cerebralis* and *C. shasta*. However, only one of the two such exposures was possible (the spring exposure). The planned fall exposure had to be aborted when suitable age sentinel rainbow trout proved unavailable. To make up for this, a spring 2003 exposure is planned, the results of which will be reported later in 2003 in an addendum to this report. The numbers of fish samples collected this 2002 met and even exceeded the

360 fish target for salmonids above and below McIntyre Dam (see Tables 1, 3, and 5, Appendix E, which summarize the collections not only for year 2002 but also for years 2000, 2001, 2002). The same was true for the number of non-salmonids collected above the Dam (Tables 3 and 4, Appendix E). Unfortunately, however, for reasons mentioned earlier in this report, it was not possible to collect the required number of non-salmonids below the Dam (Tables 1 and 2, Appendix E). The collections came close to the usual annual target for non-salmonids (349 fish collected instead of 360) but fell short of the 420 fish hoped for in 2002, a 60 fish increase over the usual target that was intended to make up for an overall shortfall in non-salmonids collected in the preceding two years (Table 7, Appendix E). This shortfall in sample size slightly reduces the confidence that one can put in conclusions drawn from the below-the-Dam non-salmonid sample.

With non-salmonids, eight species were collected above the Dam and ten species below (Tables 4 and 2, Appendix E). This is in contrast to collections in years 2000 and 2001, when the numbers of fish taxa collected above the Dam were greater than those collected below the Dam (compare data in Tables 6 and 7, Appendix E). A goal was to have no single species account for more than 25% of the sample. This year, this goal was essentially met for the non-salmonid species collected above and below the Dam (yellow perch collected below the Dam actually exceeded the limit by a trifle: 25.5% instead of 25%) (based on data in Table 2, Appendix E).

Initial sampling plans called for migratory non-salmonids to constitute 75% of the non-salmonids collected because such fish were more likely to gain access to Skaha and Okanagan lakes once the barriers to migration were removed. However, it proved difficult to achieve consensus on which species are migratory and which are non-migratory. For this reason it was decided in March, 2002, to drop the 75% requirement for migratory species when sampling non-salmonids. However, if the species/groups collected below the Dam to date are rated as active migrants on the basis of their known ability to migrate upstream to spawn or on the ability to live in lotic situations (see Scott and Crossman, 1973), 8 of the 14 (or 57%) species/groups sampled during the 2000 to 2002 fish collections would have been rated as potentially migratory (see Table 7, Appendix E). Even sculpins would have qualified as migratory. How many of the species would qualify as "jumpers" is another relevant question, particularly as it appears likely that some form of barrier permitting the migration of sockeye but not of walleye would have to be put in place. Walleye occur downstream of McIntyre Dam but have yet to reach Osoyoos Lake. Because of their piscivorous nature, their presence in Osoyoos Lake and in the watershed above Osoyoos Lake would be contraindicated.

A final problem with the non-salmonid sampling program is that species of non-salmonids known or suspected to be present below the Dam were again not represented in the year 2002 samples. For example, tench, which are reported to occur below the Dam, were not represented. It seems likely that the sampling methods used and the locations sampled should have shown their presence. It is possible, therefore, that tench occur in relatively low numbers below the Dam and that this explains their absence in the samples.

Based on the results obtained from the fish samples processed in 2002, only one known viral fish pathogen, IHNV (almost certainly type I) was isolated and it occurred only in sockeye and kokanee (see Tables 1,2, 3, and 4, Appendix E). The identification protocol indicates that the IHNV isolates were not type II but it did not rule out the possibility that

they were type III. This possibility is, however, regarded as remote because type III is usually found in chinook salmon and its range is in southern Oregon and northern California. IHNV type I is not one of the “pathogens of concern” because it is already known to occur in salmonids above McIntyre Dam. As in the two previous sampling years, during the 2002 survey the virus was found in salmonid samples obtained from both below and above McIntyre Dam and was detected, not unexpectedly, in fish at the spawning and post-spawning stage. The virus was not detected in juvenile salmon -- not even in sockeye eggs, yolk sac fry, or emergent fry -- probably indicating that the virus is not vertically transmitted.

In 2002, no samples were taken for EIBS testing because it had been shown during 2000 and 2001 samplings to be widely distributed in fish both above and below McIntyre Dam. In 2001 the condition was detected in one salmonid (a whitefish) and six species of non-salmonids. In year 2000, it was found in all three species of salmonids tested and in seven species of non-salmonids. These findings were presented in last year’s report.

In year 2002, all sockeye tested for *C. shasta* and *M. cerebralis* proved negative for these pathogens (Table 1, Appendix E). A similar result was obtained for sockeye collected in years 2000 and 2001. Results for *C. shasta* testing of kokanee and whitefish collected in years 2000 and 2001 were delayed by an equipment failure but are now available (see Tables 1 and 2, Appendix D, for details or Table 8, Appendix E, for a summary). They showed whitefish in both years to be negative for *C. shasta*; however, 11 adult kokanee from above the Dam were positive for *C. shasta* in 2000. Tests for *C. shasta* on samples of kokanee and whitefish from above and below the Dam during 2002 all proved negative for the pathogen (Tables 3 and 1, Appendix E). Testing for *M. cerebralis* in the fall of 2001 using live box-exposed rainbow trout failed to detect the pathogen in fish exposed to waters below and above McIntyre Dam (see Appendix A). In these tests, *C. shasta* was not detected in fish exposed to waters above the Dam but it was detected in fish at a live-box exposure site (site #2) below the Dam (see Appendix A for details). It is hoped that positive PCR-based results for *C. shasta* can be reinforced in the future by observing spores typical of *C. shasta*). Results for the live-box exposures done in the spring of 2002 are not yet available and so they will also be included in the addendum to this report, to be ready later in 2003. The available results to date suggest that *M. cerebralis* does not occur in the sample areas above and below the Dam, and indicate that sockeye are not likely to be “vectors” of this pathogen which is known to occur in the Columbia River system. On the basis of available data, it appears that *C. shasta* occurs both above and below the Dam.

Samples of sockeye spawners, collected in 2001 and 2002 in the Okanagan River below McIntyre Dam as part of an unrelated study, proved positive for a myxosporidian parasite, *Parvicapsula minibicornis*. This parasite was not included in the list of “disease agents of particular concern” because it has only recently given cause for concern (it recently caused significant pre-spawning mortalities in sockeye in the Fraser River). Whether the parasite also occurs in fish above McIntyre Dam is unknown, but its presence in sockeye below the Dam, taken together with its pathogenicity potential, will have to be considered when making a decision on whether to proceed with the introduction of sockeye into Skaha Lake. Certainly, it would appear that some additional sampling to determine whether the parasite also occurs above the Dam would be in order. At this stage, not much is known about the life cycle of the parasite. It is not known, for example, whether the parasite requires an alternate host (as do *M. cerebralis* and *C. shasta*) to complete its life cycle. If it does, and if the alternate host does not

occur in the Okanagan watershed, the parasite would not be able to infect fish within the watershed. In which case, its presence in the sockeye would be of little concern should one wish to proceed with a test introduction of sockeye into Skaha Lake. On the other hand, if an alternate host is not required, direct fish-to-fish infections would be possible and thus any introductions of returning sockeye adults into Skaha Lake would be contraindicated unless it was found that the parasite already exists above the Dam. It is known, however, that myxosporidians affecting salmonids are not transmitted via salmonid eggs. Thus, if one wished to proceed with a test introduction of sockeye into Skaha Lake to study its interactions with kokanee and mysids, this could be immediately achieved without risk of spreading the parasite by planting sockeye fry derived from eggs collected from the returning sockeye adults. In going about this, however, well-known precautions would have to be taken to reduce the likelihood of fry losses due to IHN virus which the sockeye adults are known to harbour.

At this stage of the pathogen survey, there is no evidence to indicate that the fish populations above and below the Dam differ with respect to the "disease agents of concern" that they carry. Thus, for the moment, none of these agents presents a reason for not proceeding with a test introduction of sockeye into Skaha Lake. On the other hand, the recent finding of the myxosporidian parasite, *P. minibicornis*, in sockeye spawners below the Dam would contraindicate any such introductions of returning sockeye adults until the distribution of the parasite in the watershed was better known. Such an introduction would only be reasonable if the parasite was already known to occur above McIntyre Dam. However, while efforts are being made to determine this, test introductions of sockeye (using fry hatched from eggs collected from the returning sockeye adults) would be permissible because such fry would pose no risk of spreading the parasite.

4.2 Effect of Water Quality on Pathogens

An examination of limnological data for Okanagan and Skaha lakes reveals no obvious environmental factors likely to pose an extraordinary risk of causing disease in salmonids or non-salmonids. Both lakes appear to undergo the classic stratification cycle for northern lakes, with a warm epilimnion and a cooler hypolimnion in summer followed by an overturn. Temperature regimes in the lakes are such that salmonids should be able to reside in water of non-stressful temperatures all year long. Brief entries into the epilimnion, for feeding, even during its warmest periods (where temperatures may be less than ideal for salmonids), are not likely to be stressful enough to cause disease because they are unlikely to induce chronic stress, the type of stress most conducive to disease. Likewise, oxygen concentrations in the hypolimnion appear normally to be at levels that are non-stressful to salmonids, although in Skaha Lake, which is much smaller and shallower than Okanagan Lake, oxygen concentrations in the hypolimnion may decline to levels that may be slightly stressful to salmonids in very warm years.

Populations of kokanee in the above lakes have declined drastically ever since anthropogenic nutrient input into the lakes was reduced and mysids, competitors for zooplankton needed by kokanee, were introduced. One might speculate, therefore, that the introduction of sockeye to these lakes would add to the competition for an already limiting food supply. Because starving fish are not likely to be as robust and disease resistant as well-fed fish, one might predict that the introduced sockeye would contribute to the poor health of kokanee and other fish in the lakes depending on zooplankton for

their food. However, introduced sockeye will also be providing the lakes with nutrients brought back from the sea in the form of spawning sockeye adults. Once sockeye runs return to their earlier healthy levels, these nutrients, released from the decomposing carcasses of the spent sockeye, may mitigate and perhaps even neutralise any negative effects resulting from the "extra (sockeye) mouths to be fed".

It is probably a given that any microbial fish pathogen introduced above the McIntyre Dam with sockeye or other fishes that are allowed to migrate there, will eventually establish infections in resident fish, if not disease. Most microbial pathogens are not highly host-specific, but rather can infect a variety of fish species. In addition, once released from infected fish, most of these pathogens can survive in water for significant periods. The virus responsible for IPN, for example, has a particularly wide host range, and its long-term persistence in water has been well documented. In addition, IPNV is considered to be a vertically transmitted pathogen (i.e., it can be transmitted from parent to progeny via the egg). It thus has the ability to persist in generation after generation of any introduced species, which can then serve as a constant potential source of infection for other fish sharing the same water.

With myxosporidian pathogens such as *M. cerebralis* and *C. shasta*, their persistence in a system following introduction is dependent on whether their alternate hosts are also present in the system. At the moment, it is not known if the alternate host for *M. cerebralis* occurs in the Okanagan drainage. However, in the case of *C. shasta* its presence below and above the Dam, as evidenced by positive PCR tests in adult kokanee and sentinel rainbow trout, would suggest that the alternate host for this parasite does indeed occur in the Okanagan watershed – both above and below the Dam.

4.3 Risk to Resident Fish

It seems very likely that the progeny of introduced sockeye will have very similar ecological requirements as resident kokanee and that their behaviour patterns will be very similar. It follows, therefore, that this will increase the chances of interactions between these fishes, thus increasing the chances that any pathogens carried by one or other of these fishes will cause cross infections. These factors will likely also hold true for cross infections between introduced and resident non-salmonid species. In addition, because of the survival of many microbial fish pathogens in water, cross infections between salmonids and non-salmonids will also be possible (e.g., with IPNV). Range extensions of fish pathogens are therefore a distinct possibility when fish carrying exotic pathogens move into new areas. However, in the present study, the important question is whether any new (i.e., exotic) pathogens are likely to be introduced. The present pathogen survey is intended to provide answers to this important question.

5.0 CONCLUSION

Data from three years of sampling suggest that none of the “disease agents of particular concern” present any reason for preventing a test introduction of sockeye into Skaha Lake. If this is borne out by results still to come, the risks posed by an introduction of sockeye into Skaha Lake would have to be based mainly on considerations of factors other than fish pathogens. The recent unexpected finding of *P. minibicornis* in sockeye salmon below the Dam will, however, almost certainly affect decisions about introducing sockeye into Skaha Lake, given the parasite’s recently recognized potential as a fish pathogen. Factors to be considered with respect to a sockeye introduction as a result of the *P. minibicornis* finding have been discussed above.

There are no indications that Okanagan and Skaha Lakes pose an extraordinary risk of causing disease in fish. Competition between kokanee and sockeye could conceivably add to a starvation problem which would make resident fish less robust and more susceptible to disease, but nutrients from decomposing sockeye carcasses may mitigate any such negative effects. It seems likely that any exotic pathogen introduced above McIntyre Dam by fish migrating from below the Dam would likely persist in its new location and over time lead to infections (and perhaps even disease) in fish above the Dam. It is important, therefore, that the barriers to fish migration from Osoyoos Lake into Skaha and Okanagan lakes be maintained until firm conclusions about the pathogens (including *P. minibicornis*) present in fish above and below the Dam are possible, and until the benefits and risks of removing the barriers are thoroughly considered.

6.0 REFERENCES

Scott, W.B. and E.J. Crossman. 1973. Freshwater Fishes of Canada. Bulletin 184. Fisheries Research Board of Canada. 966 p.

APPENDIX A

Whirling disease Results Fall 2001

Disease risk assessment -Whirling Disease Fall 2001 sampling

ONFC Live Box Study - Case # 2002-1025 Control Group #1				
Pool Number	Fish Number	Sample Date	<i>C. shasta</i> Positive Fish	<i>M. cerebralis</i> Positive Fish
1	1-5	Mar-12-02	Neg	Neg
2	6-10	Mar-12-02	Neg	Neg
3	11-15	Mar-12-02	Neg	Neg
4	16-20	Mar-12-02	Neg	Neg
5	21-25	Mar-12-02	Neg	Neg
6	26-30	Mar-12-02	Neg	Neg
7	31-35	Mar-12-02	Neg	Neg
8	36-40	Mar-12-02	Neg	Neg
9	41-45	Mar-12-02	Neg	Neg
10	46-50	Mar-12-02	Neg	Neg
11	51-55	Mar-12-02	Neg	Neg
12	56-60	Mar-12-02	Neg	Neg
13	61-65	Mar-12-02	Neg	Neg
14	66-70	Mar-12-02	Neg	Neg
15	71-75	Mar-12-02	Neg	Neg
16	76-80	Mar-12-02	Neg	Neg
17	81-85	Mar-12-02	Neg	Neg
18	86-90	Mar-12-02	Neg	Neg
19	91-93	Mar-12-02	Neg	Neg

ONFC Live Box Study - Case # 2002-1026 Control Group #2				
Pool Number	Fish Number	Sample Date	<i>C. shasta</i> Positive Fish	<i>M. cerebralis</i> Positive Fish
1	94-98	Mar-12-02	Neg	Neg
2	99-103	Mar-12-02	Neg	Neg
3	104-108	Mar-12-02	Neg	Neg
4	109-113	Mar-12-02	Neg	Neg
5	114-118	Mar-12-02	Neg	Neg
6	119-123	Mar-12-02	Neg	Neg
7	124-128	Mar-12-02	Neg	Neg
8	129-133	Mar-12-02	Neg	Neg
9	134-138	Mar-12-02	Neg	Neg
10	139-143	Mar-12-02	Neg	Neg
11	144-148	Mar-12-02	Neg	Neg
12	149-153	Mar-12-02	Neg	Neg
13	154-158	Mar-12-02	Neg	Neg
14	159-163	Mar-12-02	Neg	Neg
15	164-168	Mar-12-02	Neg	Neg
16	169-173	Mar-12-02	Neg	Neg
17	174-178	Mar-12-02	Neg	Neg
18	179-183	Mar-12-02	Neg	Neg

Disease risk assessment -Whirling Disease Fall 2001 sampling

ONFC Live Box Study - Case # 2002-1027 Experimental Site #1				
Pool Number	Fish Number	Sample Date	<i>C. shasta</i> Positive Fish	<i>M. cerebralis</i> Positive Fish
1	184-188	Mar-12-02	Neg	Neg
2	189-193	Mar-12-02	Neg	Neg
3	194-198	Mar-12-02	Neg	Neg
4	199-203	Mar-12-02	Neg	Neg
5	204-208	Mar-12-02	Neg	Neg
6	209-213	Mar-12-02	Neg	Neg
7	214-218	Mar-12-02	Neg	Neg
8	219-223	Mar-12-02	Neg	Neg
9	224-228	Mar-12-02	Neg	Neg
10	229-233	Mar-12-02	Neg	Neg
11	234-238	Mar-12-02	Neg	Neg

ONFC Live Box Study - Case # 2002-1028 Experimental Site #2				
Pool Number	Fish Number	Sample Date	<i>C. shasta</i> Positive Fish	<i>M. cerebralis</i> Positive Fish
1	239-243	Mar-13-02	Neg	Neg
2	244-248	Mar-13-02	Neg	Neg
3	249-253	Mar-13-02	Neg	Neg
4	254-258	Mar-13-02	Neg	Neg
5	259-263	Mar-13-02	261	Neg
6	264-268	Mar-13-02	Neg	Neg
7	269-273	Mar-13-02	269, 270, 271	Neg
8	274-278	Mar-13-02	275, 276, 278	Neg
9	279-283	Mar-13-02	Neg	Neg
10	284-288	Mar-13-02	Neg	Neg
11	289-293	Mar-13-02	Neg	Neg
12	294-298	Mar-13-02	295, 296	Neg
13	299-303	Mar-13-02	300, 302	Neg
14	304-307	Mar-13-02	307	Neg

Disease risk assessment -Whirling Disease Fall 2001 sampling

ONFC Live Box Study - Case # 2002-1029 Experimental Site #3					ONFC Live Box Study - Case # 2002-1030 Experimental Site #4				
Pool Number	Fish Number	Sample Date	C. shasta Positive Fish	M. cerebralis Positive Fish	Pool Number	Fish Number	Sample Date	C. shasta Positive Fish	M. cerebralis Positive Fish
1	308-312	Mar-13-02	Neg	Neg	1	348-352	Mar-13-02	Neg	Neg
2	313-317	Mar-13-02	Neg	Neg	2	353-357	Mar-13-02	Neg	Neg
3	318-322	Mar-13-02	Neg	Neg	3	358-362	Mar-13-02	Neg	Neg
4	323-327	Mar-13-02	Neg	Neg	4	363-367	Mar-13-02	Neg	Neg
5	328-332	Mar-13-02	Neg	Neg	5	368-372	Mar-13-02	Neg	Neg
6	333-337	Mar-13-02	Neg	Neg	6	373-377	Mar-13-02	Neg	Neg
7	338-342	Mar-13-02	Neg	Neg	7	378-382	Mar-13-02	Neg	Neg
8	343-347	Mar-13-02	Neg	Neg	8	383-387	Mar-13-02	Neg	Neg
					9	388-392	Mar-13-02	Neg	Neg
					10	393-397	Mar-13-02	Neg	Neg
					11	398-402	Mar-13-02	Neg	Neg
					12	403-407	Mar-13-02	Neg	Neg
					13	408-412	Mar-13-02	Neg	Neg
					14	413-417	Mar-13-02	Neg	Neg
					15	418-422	Mar-13-02	Neg	Neg

Disease risk assessment -Whirling Disease Fall 2001 sampling

ONFC Live Box Study - Case # 2002-1031 Experimental Site #5				
Pool Number	Fish Number	Sample Date	C. shasta Positive Fish	M. cerebralis Positive Fish
1	423-427	Mar-13-02	Neg	Neg
2	428-432	Mar-13-02	Neg	Neg
3	433-437	Mar-13-02	Neg	Neg
4	438-442	Mar-13-02	Neg	Neg
5	443-447	Mar-13-02	Neg	Neg
6	448-452	Mar-13-02	Neg	Neg
7	453-457	Mar-13-02	Neg	Neg
8	458-462	Mar-13-02	Neg	Neg
9	463-467	Mar-13-02	Neg	Neg
10	468-472	Mar-13-02	Neg	Neg
11	473-477	Mar-13-02	Neg	Neg
12	478-482	Mar-13-02	Neg	Neg
13	483-484	Mar-13-02	Neg	Neg

ONFC Live Box Study - Case # 2002-1032 Experimental Site #6				
Pool Number	Fish Number	Sample Date	C. shasta Positive Fish	M. cerebralis Positive Fish
1	485-489	Mar-13-02	Neg	Neg
2	490-494	Mar-13-02	Neg	Neg
3	495-499	Mar-13-02	Neg	Neg
4	500-504	Mar-13-02	Neg	Neg
5	505-509	Mar-13-02	Neg	Neg
6	510-514	Mar-13-02	Neg	Neg
7	515-519	Mar-13-02	Neg	Neg
8	520-524	Mar-13-02	Neg	Neg
9	525-529	Mar-13-02	Neg	Neg
10	530-534	Mar-13-02	Neg	Neg
11	535-539	Mar-13-02	Neg	Neg
12	540-543	Mar-13-02	Neg	Neg

Disease risk assessment -Whirling Disease Fall 2001 sampling

ONFC Live Box Study - Case # 2002-1033 Experimental Site #7				
Pool Number	Fish Number	Sample Date	C. shasta Positive Fish	M. cerebralis Positive Fish
1	544-548	Mar-14-02	Neg	Neg
2	549-553	Mar-14-02	Neg	Neg
3	554-558	Mar-14-02	Neg	Neg
4	559-563	Mar-14-02	Neg	Neg
5	564-568	Mar-14-02	Neg	Neg
6	569-573	Mar-14-02	Neg	Neg
7	574-578	Mar-14-02	Neg	Neg
8	579-583	Mar-14-02	Neg	Neg
9	584-588	Mar-14-02	Neg	Neg
10	589-593	Mar-14-02	Neg	Neg
11	594-596	Mar-14-02	Neg	Neg
12	597-599	Mar-14-02	Neg	Neg

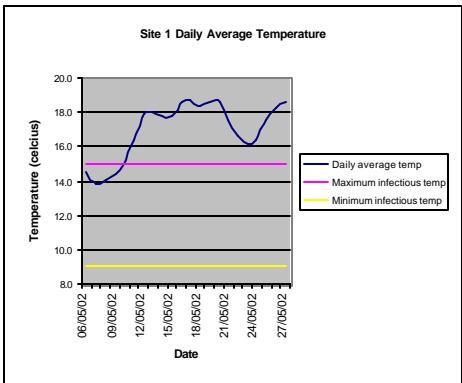
ONFC Live Box Study - Case # 2002-1034 Experimental Site #8				
Pool Number	Fish Number	Sample Date	C. shasta Positive Fish	M. cerebralis Positive Fish
1	600-604	Mar-14-02	Neg	Neg
2	605-609	Mar-14-02	Neg	Neg
3	610-614	Mar-14-02	Neg	Neg
4	615-619	Mar-14-02	Neg	Neg
5	620-624	Mar-14-02	Neg	Neg
6	625-629	Mar-14-02	Neg	Neg
7	630-634	Mar-14-02	Neg	Neg
8	635-639	Mar-14-02	Neg	Neg
9	640-644	Mar-14-02	Neg	Neg
10	645-649	Mar-14-02	Neg	Neg
11	650-654	Mar-14-02	Neg	Neg
12	655-659	Mar-14-02	Neg	Neg
13	660-664	Mar-14-02	Neg	Neg
14	665-669	Mar-14-02	Neg	Neg
15	670-672	Mar-14-02	Neg	Neg

APPENDIX B

**Whirling disease exposure daily
temperature data and site photos
Spring 2002**

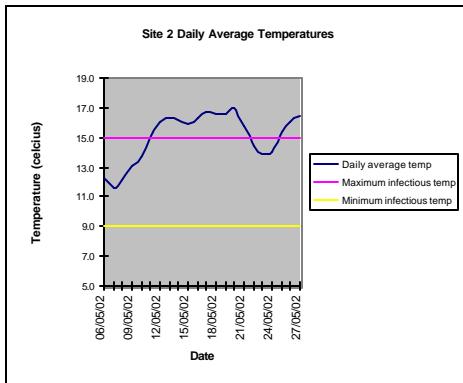
Date	Daily Avg Temp. (C)
2002	
Site 1	
06-May	14.5
07-May	13.9
08-May	14.1
09-May	14.4
10-May	15.0
11-May	16.4
12-May	17.9
13-May	18.0
14-May	17.8
15-May	17.7
16-May	18.7
17-May	18.8
18-May	18.4
19-May	18.6
20-May	18.6
21-May	17.6
22-May	16.6
23-May	16.1
24-May	16.4
25-May	17.6
26-May	18.3
27-May	18.6

Average 17.0



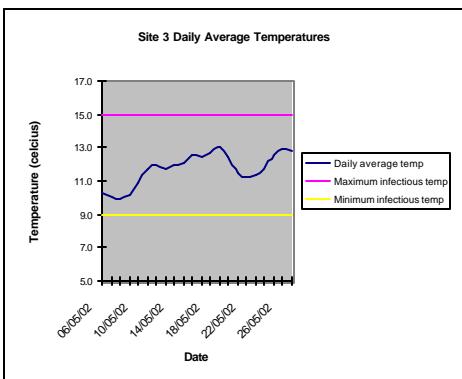
Date	Daily Avg Temp.
2002	
Site 2	
06-May	12.2
07-May	11.6
08-May	12.2
09-May	13.1
10-May	13.7
11-May	14.9
12-May	16.1
13-May	16.3
14-May	16.1
15-May	15.9
16-May	16.3
17-May	16.7
18-May	16.6
19-May	16.6
20-May	16.9
21-May	15.7
22-May	14.4
23-May	13.9
24-May	14.1
25-May	15.3
26-May	16.0
27-May	16.4

Average 15.1



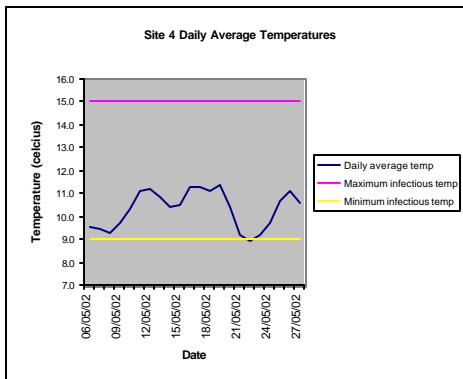
Date	Daily Avg Temp. (C)
2002	
Site 3	
06-May	10.3
07-May	10.0
08-May	9.9
09-May	10.2
10-May	10.9
11-May	11.8
12-May	12.0
13-May	11.8
14-May	11.9
15-May	12.0
16-May	12.6
17-May	12.5
18-May	12.7
19-May	13.0
20-May	12.4
21-May	11.5
22-May	11.2
23-May	11.3
24-May	11.8
25-May	12.6
26-May	12.9
27-May	12.8

Average 11.7



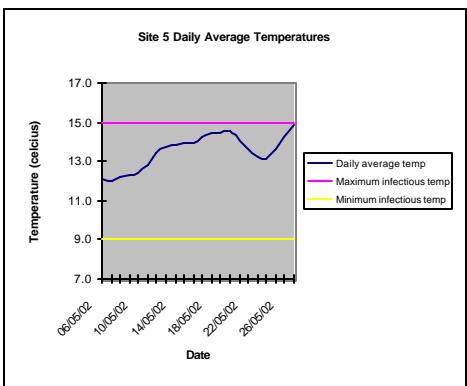
Date	Daily Avg Temp.
2002	
Site 4	
06-May	9.6
07-May	9.4
08-May	9.3
09-May	9.7
10-May	10.3
11-May	11.1
12-May	11.2
13-May	10.9
14-May	10.4
15-May	10.5
16-May	11.2
17-May	11.3
18-May	11.1
19-May	11.4
20-May	10.4
21-May	9.2
22-May	8.9
23-May	9.2
24-May	9.7
25-May	10.6
26-May	11.1
27-May	10.6

Average 10.3



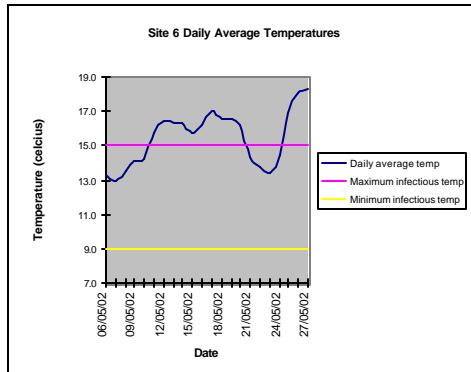
	Daily Avg Temp. (C)
Date	Site 5
06-May	12.1
07-May	12.0
08-May	12.2
09-May	12.3
10-May	12.4
11-May	12.8
12-May	13.4
13-May	13.8
14-May	13.9
15-May	13.9
16-May	13.9
17-May	14.2
18-May	14.4
19-May	14.5
20-May	14.6
21-May	14.1
22-May	13.6
23-May	13.3
24-May	13.1
25-May	13.6
26-May	14.3
27-May	14.8

Average



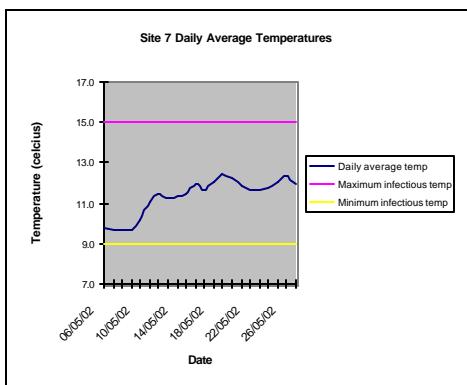
	Daily Avg Temp.
Date	Site 6
06-May	13.3
07-May	12.9
08-May	13.5
09-May	14.1
10-May	14.2
11-May	15.7
12-May	16.4
13-May	16.3
14-May	16.3
15-May	15.7
16-May	16.3
17-May	17.0
18-May	16.6
19-May	16.6
20-May	16.2
21-May	14.3
22-May	13.7
23-May	13.4
24-May	14.5
25-May	16.8
26-May	18.1
27-May	18.3

Average



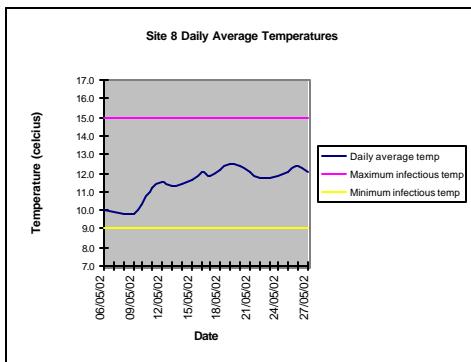
	Daily Avg Temp. (C)
Date	Site 7
06-May	9.8
07-May	9.7
08-May	9.6
09-May	9.6
10-May	10.2
11-May	11.0
12-May	11.4
13-May	11.2
14-May	11.4
15-May	11.5
16-May	11.9
17-May	11.7
18-May	12.0
19-May	12.4
20-May	12.3
21-May	11.9
22-May	11.7
23-May	11.6
24-May	11.8
25-May	12.0
26-May	12.4
27-May	11.9

Average



	Daily Avg Temp.
Date	Site 8
06-May	10.0
07-May	9.9
08-May	9.8
09-May	9.8
10-May	10.3
11-May	11.1
12-May	11.5
13-May	11.3
14-May	11.5
15-May	11.6
16-May	12.1
17-May	11.8
18-May	12.1
19-May	12.5
20-May	12.4
21-May	12.0
22-May	11.8
23-May	11.7
24-May	11.8
25-May	12.1
26-May	12.4
27-May	12.0

Average





Whirling Disease Site 8



Whirling Disease Site 6



Whirling Disease Site 4



Whirling Disease Site 2

APPENDIX C

Fisheries and Oceans Canada

laboratory results

Collection Site-Okanagan River Collection Date-Feb. 12, 2002 Sample-eggs, alevins sockeye salmon Assay Date-Feb. 13, 2002 (samples not frozen) Cell lines-EPC and CHSE-214				Collection Site-Okanagan River Collection Date-Feb. 19, 2002 Sample-alevins sockeye salmon Assay Date-Feb. 20, 2002 (samples not frozen) Cell lines-EPC and CHSE-214				Collection Site-Okanagan River Collection Date-Feb. 26, 2002 Sample-alevins sockeye salmon Assay Date-Feb. 27, 2002 (sample not frozen) Cell lines-EPC and CHSE-214				Collection Site-Okanagan River Collection Date-March 5, 2002 Sample-alevins sockeye salmon Assay Date-March 7, 2002 (sample not frozen) Cell lines-EPC and CHSE-214				Collection Site-Okanagan River Collection Date-March 12, 2002 Sample-alevins sockeye salmon Assay Date-March 15, 2002 (samples frozen at -80) Cell lines-EPC and CHSE-214			
Pool No.	Number of fish/pool	Virology Results	Remarks	Pool No.	Number of fish/pool	Virology Results		Pool No.	Number of fish/pool	Virology Results		Pool No.	Number of fish/pool	Virology Results		Pool No.	Number of fish/pool	Virology Results	
1	2	nvd *	alevins	1	2	nvd*		1	2	nvd*		1	2	nvd*		1	2	nvd*	
2	2	nvd	alevins	2	2	nvd		2	2	nvd		2	2	nvd		2	2	nvd	
3	2	nvd	alevins	3	2	nvd		3	2	nvd		3	2	nvd		3	2	nvd	
4	2	nvd	alevins	4	2	nvd		4	2	nvd		4	2	nvd		4	2	nvd	
5	2	nvd	alevins	5	2	nvd		5	2	nvd		5	2	nvd		5	2	nvd	
6	2	nvd	alevins	6	2	nvd		6	2	nvd		6	2	nvd		6	2	nvd	
7	2	nvd	alevins	7	2	nvd		7	2	nvd		7	2	nvd		7	2	nvd	
8	2	nvd	alevins	8	2	nvd		8	2	nvd		8	2	nvd		8	2	nvd	
9	2	nvd	alevins	9	2	nvd		9	2	nvd		9	2	nvd		9	2	nvd	
10	2	nvd	alevins	10	2	nvd		10	2	nvd		10	2	nvd		10	2	nvd	
11	2	nvd	eyed eggs	11	2	nvd		11	2	nvd		11	2	nvd		11	2	nvd	
12	2	nvd	eyed eggs	12	2	nvd		12	2	nvd		12	2	nvd		12	2	nvd	
13	2	nvd	eyed eggs	13	2	nvd		13	2	nvd		13	2	nvd		13	2	nvd	
14	2	nvd	eyed eggs	14	2	nvd		14	2	nvd		14	2	nvd		14	2	nvd	
15	2	nvd	eyed eggs	15	2	nvd		15	2	nvd		15	2	nvd		15	2	nvd	
16	2	nvd	eyed eggs	16	2	nvd		16	2	nvd		16	2	nvd		16	2	nvd	
17	2	nvd	eyed eggs	17	2	nvd		17	2	nvd		17	2	nvd		17	2	nvd	
18	2	nvd	eyed eggs	18	2	nvd		18	2	nvd		18	2	nvd		18	2	nvd	
19	2	nvd	eyed eggs	19	2	nvd		19	2	nvd		19	2	nvd		19	2	nvd	
20	2	nvd	eyed eggs	20	2	nvd		20	2	nvd		20	2	nvd		20	2	nvd	
21	2	nvd	eyed eggs	21	2	nvd		21	2	nvd		21	2	nvd		21	2	nvd	
22	2	nvd	eyed eggs	22	2	nvd		22	2	nvd		22	2	nvd		22	2	nvd	
23	2	nvd	eyed eggs	23	2	nvd		23	2	nvd		23	2	nvd		23	2	nvd	
24	2	nvd	eyed eggs	24	2	nvd		24	2	nvd		24	2	nvd		24	2	nvd	
25	2	nvd	eyed eggs	25	2	nvd		25	2	nvd		25	2	nvd		25	2	nvd	
26	2	nvd	eyed eggs	26	2	nvd		26	2	nvd		26	2	nvd		26	2	nvd	
27	2	nvd	eyed eggs	27	2	nvd		27	2	nvd		27	2	nvd		27	2	nvd	
28	2	nvd	eyed eggs	28	2	nvd		28	2	nvd		28	2	nvd		28	2	nvd	
29	2	nvd	eyed eggs	29	2	nvd		29	2	nvd		29	2	nvd		29	2	nvd	
30	2	nvd	eyed eggs	30	2	nvd		30	2	nvd		30	2	nvd		30	2	nvd	
Total	20 alevin	0/20		Total	60	0/60		Total	60	0/60		Total	60	0/60		Total	60	0/60	
	40 eggs	0/40																	

nvd* - no virus detected

Collection Site-Okanagan River
 Collection Date-April 17, 2002
 Sample-fry
 sockeye salmon
 Assay Date-April 18, 2002
 (samples not frozen)
 Cell lines-EPC and CHSE-214

Pool No.	Number of fish/pool	Virology Results
1	2	nvd *
2	2	nvd
3	2	nvd
4	2	nvd
5	2	nvd
6	2	nvd
7	2	nvd
8	2	nvd
9	2	nvd
10	2	nvd
11	2	nvd
12	2	nvd
13	2	nvd
14	2	nvd
15	2	nvd
16	2	nvd
17	2	nvd
18	2	nvd
19	2	nvd
20	2	nvd
21	2	nvd
22	2	nvd
23	2	nvd
24	2	nvd
25	2	nvd
26	2	nvd
27	2	nvd
28	2	nvd
29	2	nvd
30	2	nvd
Total	60 fish	0/60

Collection Site-Okanagan River
 Collection Date-April 23, 2002
 Sample-fry
 sockeye salmon
 Assay Date-April 25, 2002
 (samples not frozen)
 Cell lines-EPC and CHSE-214

Pool No.	Number of fish/pool	Virology Results
1	2	nvd *
2	2	nvd
3	2	nvd
4	2	nvd
5	2	nvd
6	2	nvd
7	2	nvd
8	2	nvd
9	2	nvd
10	2	nvd
11	2	nvd
12	2	nvd
13	2	nvd
14	2	nvd
15	2	nvd
16	2	nvd
17	2	nvd
18	2	nvd
19	2	nvd
20	2	nvd
21	2	nvd
22	2	nvd
23	2	nvd
24	2	nvd
25	2	nvd
26	2	nvd
27	2	nvd
28	2	nvd
29	2	nvd
30	2	nvd
Total	60 fish	0/60

Collection Site-Osoyoos Lake
 Collection Date-June 12, 2002
 Sample-fry
 sockeye salmon
 Assay Date-July 31, 2002
 (samples frozen at -80)
 Cell lines-EPC and CHSE-214

Pool No.	Number of fish/pool	Virology Results
1	2	nvd *
2	2	nvd
3	2	nvd
4	2	nvd
5	2	nvd
6	2	nvd
7	2	nvd
8	2	nvd
9	2	nvd
10	2	nvd
11	2	nvd
12	2	nvd
13	2	nvd
14	2	nvd
15	2	nvd
16	2	
17	2	
18	2	
19	2	
20	2	
21	2	
22	2	
23	2	
24	2	
25	2	
26	2	
27	2	
28	2	
29	2	
30	2	
Total	30 fish	0/30

Collection Site-Osoyoos Lake
 Collection Date-June 24, 2002
 Sample-fry
 sockeye salmon
 Assay Date-Aug. 13, 2002
 (samples frozen at -80)
 Cell lines-EPC and CHSE-214

Pool No.	Number of fish/pool	Virology Results
1	2	nvd *
2	2	nvd
3	2	nvd
4	2	nvd
5	2	nvd
6	2	nvd
7	2	nvd
8	2	nvd
9	2	nvd
10	2	nvd
11	2	nvd
12	2	nvd
13	2	nvd
14	2	nvd
15	2	nvd
16	2	
17	2	
18	2	
19	2	
20	2	
21	2	
22	2	
23	2	
24	2	
25	2	
26	2	
27	2	
28	2	
29	2	
30	2	
Total	30 fish	0/30

nvd* - no virus detected

Collection Site-Osoyoos Lake		
Collection Date-Aug. 27, 2002		
Sample-fry		
sockeye salmon		
Assay Date-Dec. 20, 2002		
(samples frozen at -80)		
Cell Lines-EPC and CHSE-214		
Pool Number	Number of fish/pool	Virology Results
1	2	nvd*
2	2	nvd
3	2	nvd
4	2	nvd
5	2	nvd
6	2	nvd
7	2	nvd
8	2	nvd
9	2	nvd
10	2	nvd
11	2	nvd
12	2	nvd
13	2	nvd
14	2	nvd
15	2	nvd
16	2	nvd
17	2	nvd
18	2	nvd
19	2	nvd
20	2	nvd
21	2	nvd
22	2	nvd
23	2	nvd
24	2	nvd
25	2	nvd
26	2	nvd
27	2	nvd
28	2	nvd
29	2	nvd
30	2	nvd
Total	60 fish	0/60

Disease risk assessment - Sockeye spawner

Collection Site- Okanagan River

Collection Date-October 15-18, 2002

Sample 180 sockeye adults post-spawners plus 8 kokanee post-spawners

Assay Date-October 23-November 27, 2002 (samples frozen)

Cell lines-EPC and CHSE

Virology Fish Number	Number of fish/pool	Sex	Virology Results pfu/ml		<i>Myxobolus cerebralis</i>	<i>Ceratomyxa shasta</i>	Virus Isolate tested by IFAT
			Reprod	Fl			
1	1	F	*nvd	nvd	negative	negative	
2	1	F	nvd	nvd	negative	negative	
3	1	M	nvd	nvd	negative	negative	
4	1	M	nvd	nvd	negative	negative	
5	1	M	nvd	nvd	negative	negative	
6	1	M	nvd	nvd	negative	negative	
7	1	M	nvd	10 ³	negative	negative	
8	1	M	nvd	nvd	negative	negative	
9	1	M	nvd	nvd	negative	negative	
10	1	M	nvd	nvd	negative	negative	
11	1	F	nvd	nvd	negative	negative	
12	1	F	nvd	nvd	negative	negative	
13	1	F	nvd	nvd	negative	negative	
14	1	M	nvd	nvd	negative	negative	
15	1	M	nvd	nvd	negative	negative	
16	1	M	nvd	nvd	negative	negative	
17	1	M	nvd	nvd	negative	negative	
18	1	M	nvd	nvd	negative	negative	
19	1	M	nvd	nvd	negative	negative	
20	1	M	nvd	nvd	negative	negative	
21	1	M	nvd	nvd	negative	negative	
22	1	M	nvd	nvd	negative	negative	
23	1	M	nvd	nvd	negative	negative	
24 kok	1	M	nvd	nvd	negative	negative	
25 kok	1	M	nvd	nvd	negative	negative	
26 kok	1	M	no sample	nvd	negative	negative	
27 kok	1	M	nvd	nvd	negative	negative	
28 kok	1	M	nvd	nvd	negative	negative	
29kok	1	M	nvd	nvd	negative	negative	
30 kok	1	M	nvd	nvd	negative	negative	
31 kok	1	M	nvd	nvd	negative	negative	
32	1	F	nvd	nvd	negative	negative	
33	1	F	nvd	nvd	negative	negative	
34	1	F	nvd	10 ⁴	negative	negative	
35	1	M	nvd	nvd	negative	negative	
36	1	M	nvd	nvd	negative	negative	
37	1	M	nvd	nvd	negative	negative	
38	1	M	nvd	nvd	negative	negative	
39	1	M	nvd	nvd	negative	negative	
40	1	F	10 ⁶	10 ⁶	negative	negative	** react with Mab 14D

Disease risk assessment - Sockeye spawner

Collection Site- Okanagan River

Collection Date-October 15-18, 2002

Sample 180 sockeye adults post-spawners plus 8 kokanee post-spawners

Assay Date-October 23-November 27, 2002 (samples frozen)

Cell lines-EPC and CHSE

Virology Fish Number	Number of fish/pool	Sex	Virology Results <u>pfu/ml</u>		<i>Myxobolus cerebralis</i>	<i>Ceratomyxa shasta</i>	Virus Isolate tested by IFAT
			Reprod	Fl			
41	1	M	nvd	nvd	negative	negative	
42	1	M	nvd	nvd	negative	negative	
43	1	F	nvd	nvd	negative	negative	
44	1	F	nvd	nvd	negative	negative	
45	1	F	nvd	nvd	negative	negative	
46	1	M	nvd	nvd	negative	negative	
47	1	M	nvd	nvd	negative	negative	
48	1	M	nvd	nvd	negative	negative	
49	1	M	nvd	nvd	negative	negative	
50	1	F	nvd	nvd	negative	negative	
51	1	F	nvd	nvd	negative	negative	
52	1	F	nvd	10^4	negative	negative	
53	1	F	nvd	nvd	negative	negative	
54	1	M	nvd	nvd	negative	negative	
55	1	M	nvd	nvd	negative	negative	
56	1	M	nvd	nvd	negative	negative	
57	1	M	nvd	nvd	negative	negative	
58	1	M	nvd	nvd	negative	negative	
59	1	M	nvd	nvd	negative	negative	
60	1	M	nvd	10^3	negative	negative	
61	1	M	nvd	nvd	negative	negative	
62	1	M	nvd	nvd	negative	negative	
63	1	M	nvd	nvd	negative	negative	
64	1	M	nvd	nvd	negative	negative	
65	1	M	nvd	nvd	negative	negative	
66	1	M	nvd	nvd	negative	negative	
67	1	M	nvd	nvd	negative	negative	
68	1	M	nvd	10^4	negative	negative	
69	1	M	nvd	nvd	negative	negative	
70	1	F	10^2	10^6	negative	negative	react with Mab 14D
71	1	F	nvd	10^5	negative	negative	
72	1	F	nvd	nvd	negative	negative	
73	1	F	10^2	10^3	negative	negative	react with Mab 14D
74	1	F	nvd	nvd	negative	negative	
75	1	F	nvd	nvd	negative	negative	
76	1	M	nvd	10^3	negative	negative	
77	1	M	nvd	nvd	negative	negative	
78	1	M	nvd	nvd	negative	negative	
79	1	M	nvd	nvd	negative	negative	
80	1	M	nvd	nvd	negative	negative	
81	1	M	nvd	nvd	negative	negative	

Disease risk assessment - Sockeye spawner

Collection Site- Okanagan River

Collection Date-October 15-18, 2002

Sample 180 sockeye adults post-spawners plus 8 kokanee post-spawners

Assay Date-October 23-November 27, 2002 (samples frozen)

Cell lines-EPC and CHSE

Virology Fish Number	Number of fish/pool	Sex	<u>Virology Results</u> <u>pfu/ml</u>		<i>Myxobolus cerebralis</i>	<i>Ceratomyxa shasta</i>	Virus Isolate tested by IFAT
			Reprod	Fl			
82	1	M	nvd	nvd	negative	negative	
83	1	M	nvd	nvd	negative	negative	
84	1	M	nvd	nvd	negative	negative	
85	1	M	nvd	nvd	negative	negative	
86	1	M	nvd	nvd	negative	negative	
87	1	F	nvd	nvd	negative	negative	
88	1	F	nvd	nvd	negative	negative	
89	1	F	nvd	nvd	negative	negative	
90	1	F	nvd	nvd	negative	negative	
91	1	F	nvd	nvd	negative	negative	
92	1	F	nvd	nvd	negative	negative	
93	1	M	nvd	nvd	negative	negative	
94	1	M	nvd	nvd	negative	negative	
95	1	M	nvd	nvd	negative	negative	
96	1	F	nvd	nvd	negative	negative	
97	1	F	nvd	nvd	negative	negative	
98	1	F	nvd	nvd	negative	negative	
99	1	F	nvd	nvd	negative	negative	
100	1	F	nvd	nvd	negative	negative	
101	1	M	nvd	nvd	negative	negative	
102	1	M	nvd	nvd	negative	negative	
103	1	M	nvd	nvd	negative	negative	
104	1	M	nvd	nvd	negative	negative	
105	1	M	nvd	nvd	negative	negative	
106	1	M	nvd	nvd	negative	negative	
107	1	M	nvd	10 ⁴	negative	negative	
108	1	M	nvd	nvd	negative	negative	
109	1	M	nvd	nvd	negative	negative	
110	1	M	nvd	nvd	negative	negative	
111	1	M	nvd	nvd	negative	negative	
112	1	M	nvd	nvd	negative	negative	
113	1	M	nvd	nvd	negative	negative	
114	1	M	nvd	nvd	negative	negative	
115	1	M	nvd	nvd	negative	negative	
116	1	F	nvd	nvd	negative	negative	
117	1	M	nvd	nvd	negative	negative	
118	1	F	nvd	nvd	negative	negative	
119	1	M	nvd	nvd	negative	negative	
120	1	M	nvd	nvd	negative	negative	
121	1	M	nvd	nvd	negative	negative	
122	1	M	nvd	nvd	negative	negative	

Disease risk assessment - Sockeye spawner

Collection Site- Okanagan River

Collection Date-October 15-18, 2002

Sample 180 sockeye adults post-spawners plus 8 kokanee post-spawners

Assay Date-October 23-November 27, 2002 (samples frozen)

Cell lines-EPC and CHSE

Virology Fish Number	Number of fish/pool	Sex	<u>Virology Results</u> <u>pfu/ml</u>		<i>Myxobolus cerebralis</i>	<i>Ceratomyxa shasta</i>	Virus Isolate tested by IFAT
			Reprod	Fl			
123	1	M	nvd	nvd	negative	negative	
124	1	M	nvd	nvd	negative	negative	
125	1	M	nvd	nvd	negative	negative	
126	1	F	nvd	10 ⁴	negative	negative	
127	1	F	nvd	nvd	negative	negative	
128	1	F	nvd	nvd	negative	negative	
129	1	F	nvd	nvd	negative	negative	
130	1	M	nvd	nvd	negative	negative	
131	1	M	nvd	nvd	negative	negative	
132	1	M	nvd	nvd	negative	negative	
133	1	M	nvd	nvd	negative	negative	
134	1	M	nvd	nvd	negative	negative	
135	1	M	nvd	nvd	negative	negative	
136	1	M	nvd	nvd	negative	negative	
137	1	M	nvd	nvd	negative	negative	
138	1	M	nvd	nvd	negative	negative	
139	1	M	nvd	10 ⁴	negative	negative	
140	1	M	nvd	nvd	negative	negative	
141	1	M	nvd	nvd	negative	negative	
142	1	M	nvd	nvd	negative	negative	
143	1	F	nvd	nvd	negative	negative	
144	1	F	no sample	nvd	negative	negative	
145	1	F	nvd	nvd	negative	negative	
146	1	M	nvd	nvd	negative	negative	
147	1	M	nvd	nvd	negative	negative	
148	1	M	nvd	nvd	negative	negative	
149	1	M	nvd	nvd	negative	negative	
150	1	M	nvd	nvd	negative	negative	
151	1	F	nvd	nvd	negative	negative	
152	1	F	nvd	nvd	negative	negative	
153	1	F	nvd	nvd	negative	negative	
154	1	F	nvd	nvd	negative	negative	
155	1	M	nvd	nvd	negative	negative	
156	1	M	nvd	nvd	negative	negative	
157	1	M	nvd	nvd	negative	negative	
158	1	M	nvd	nvd	negative	negative	
159	1	M	nvd	nvd	negative	negative	
160	1	F	no sample	nvd	negative	negative	
161	1	F	no sample	nvd	negative	negative	
162	1	F	no sample	nvd	negative	negative	

Disease risk assessment - Sockeye spawner

Collection Site- Okanagan River

Collection Date-October 15-18, 2002

Sample 180 sockeye adults post-spawners plus 8 kokanee post-spawners

Assay Date-October 23-November 27, 2002 (samples frozen)

Cell lines-EPC and CHSE

Virology Fish Number	Number of fish/pool	Sex	<u>Virology Results</u> <u>pfu/ml</u>		<i>Myxobolus cerebralis</i>	<i>Ceratomyxa shasta</i>	Virus Isolate tested by IFAT
			Reprod FI	Kidney			
163	1	F	no sample	nvd	negative	negative	
164	1	F	no sample	nvd	negative	negative	
165	1	F	nvd	nvd	negative	negative	
166	1	F	nvd	nvd	negative	negative	
167	1	F	no sample	nvd	negative	negative	
168	1	F	no sample	nvd	negative	negative	
169	1	F	no sample	nvd	negative	negative	
170	1	F	no sample	nvd	negative	negative	
171	1	F	nvd	nvd	negative	negative	
172	1	M	nvd	nvd	negative	negative	
173	1	M	nvd	nvd	negative	negative	
174	1	F	nvd	nvd	negative	negative	
175	1	F	no sample	nvd	negative	negative	
176	1	F	nvd	10 ⁴	negative	negative	
177	1	F	no sample	nvd	negative	negative	
178	1	F	nvd	nvd	negative	negative	
179	1	F	nvd	nvd	negative	negative	
180	1	M	nvd	nvd	negative	negative	
181	1	F	10 ⁴	10 ⁶	negative	negative	react with Mab 14D
182	1	F	nvd	nvd	negative	negative	
183	1	F	nvd	nvd	negative	negative	
184	1	F	10 ⁴	10 ⁴	negative	negative	react with Mab 14D
185	1	F	nvd	nvd	negative	negative	
186	1	F	nvd	nvd	negative	negative	
187	1	F	nvd	nvd	negative	negative	
188	1	F	nvd	nvd	negative	negative	

	<u>Virology Results</u> <u>pfu/ml</u>		<i>Myxobolus cerebralis</i>	<i>Ceratomyxa shasta</i>	Virus Isolate tested by IFAT
	Reprod FI	Kidney			
Total	5/180	16/180	0/180	0/180	0/5
Prevalence	2.8%	8.9%	0%	0%	0%

Total kokanee	0/8	0/8	0/8	0/8	
Prevalence	0%	0%	0%	0%	

*nvd-no virus detected

**-virus isolate reacted positive with MAb 14D the universal antibody for IHNV and did not react with MAb 105B the type 2 specific antibody

APPENDIX D

**Ministry of Water, Land and Air
Protection laboratory results**

Disease risk assessment sampling

Table 1. PCR-based data on *Ceratomyxa shasta* in kokanee and whitefish collected from above and below McIntyre Dam in Year 2000

Fish Number	Date Sampled 2000	Lake	Species	Age	<i>C. shasta</i> PCR results
404	11-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
405	11-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
406	11-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
407	11-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
408	11-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
409	11-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
410	11-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
411	11-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
412	11-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
413	11-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
414	11-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
415	11-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
416	11-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
417	11-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
418	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
419	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
420	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
421	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
422	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
423	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	intestines not taken, fish too small
424	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	intestines not taken, fish too small
425	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
426	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
427	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	intestines not taken, fish too small
428	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
429	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	intestines not taken, fish too small
430	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
431	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	intestines not taken, fish too small
432	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
433	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
434	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
435	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
436	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
437	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
438	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
439	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	intestines not taken, fish too small
440	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	Negative
441	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	intestines not taken, fish too small
442	13-Jul	Okanagan Lk	Kokanee	Fry - 3 to 4 months	intestines not taken, fish too small
482	21-Aug	Okanagan Lk	Whitefish		Negative
483	21-Aug	Okanagan Lk	Whitefish		Negative
484	21-Aug	Okanagan Lk	Whitefish		Negative
485	21-Aug	Okanagan Lk	Whitefish		Negative
487	21-Aug	Okanagan Lk	Whitefish		Negative
488	21-Aug	Okanagan Lk	Whitefish		Negative
492	21-Aug	Okanagan Lk	Whitefish		Negative
498	21-Aug	Okanagan Lk	Whitefish		Negative
655	23-Aug	Osoyoos Lk	Whitefish		Negative
656	23-Aug	Osoyoos Lk	Whitefish		Negative
657	23-Aug	Osoyoos Lk	Whitefish		Negative
800	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
801	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
802	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
803	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
804	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
805	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
806	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
807	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
808	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
809	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
810	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative

Table 1. PCR-based data on *Ceratomyxa shasta* in kokanee and whitefish collected from above and below McIntyre Dam in Year 2000

Fish Number	Date Sampled 2000	Lake	Species	Age	<i>C. shasta</i> PCR results
811	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
812	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
813	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
814	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
815	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
816	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
817	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
818	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
819	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
820	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
821	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
822	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
823	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
824	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
825	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
826	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
827	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
828	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
829	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
830	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
831	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
832	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
833	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
834	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
835	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
836	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
837	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
838	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
839	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
840	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
841	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
842	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
843	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
844	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
845	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
846	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
847	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
848	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
849	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
850	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
851	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
852	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
853	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
854	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
855	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
856	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
857	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
858	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
859	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
860	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
861	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
862	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
863	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
864	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
865	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
866	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
867	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
868	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
869	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
870	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
871	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative

Table 1. PCR-based data on *Ceratomyxa shasta* in kokanee and whitefish collected from above and below McIntyre Dam in Year 2000

Fish Number	Date Sampled 2000	Lake	Species	Age	<i>C. shasta</i> PCR results
872	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
873	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
874	12-Sep	Okanagan Lk	Kokanee	Fry - 6 months	Negative
877	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
878	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
879	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
880	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
881	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
882	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
883	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
884	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
885	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
886	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
887	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
888	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
889	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
890	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
891	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
892	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
893	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
894	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
895	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
896	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
897	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
898	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
899	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
900	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
901	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
902	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
903	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
904	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
905	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
906	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
907	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
908	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
909	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
910	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
911	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
912	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
913	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
914	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
915	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
916	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
917	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
918	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
919	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
920	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
921	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
922	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
923	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
924	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
925	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
926	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
927	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
928	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
929	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
930	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
931	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
932	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
933	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
934	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative

Disease risk assessment sampling

Table 1. PCR-based data on *Ceratomyxa shasta* in kokanee and whitefish collected from above and below McIntyre Dam in Year 2000

Fish Number	Date Sampled 2000	Lake	Species	Age	<i>C. shasta</i> PCR results
935	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
936	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
937	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
938	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
939	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
940	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
941	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
942	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
943	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
944	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
945	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
946	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
947	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
948	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
949	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
950	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
951	14-Sep	N. Okanagan Lk	Kokanee	Fry - 6 months	Negative
952	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
953	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
954	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
955	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
956	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
957	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
958	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
959	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
960	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
961	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
962	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
963	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
964	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
965	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
966	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
967	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
968	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
969	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
970	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
971	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
972	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
973	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
974	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
975	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
976	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
977	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
978	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
979	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
980	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
981	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
982	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
983	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
984	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
985	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
986	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
987	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
988	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
989	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
990	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
991	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
992	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
993	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
994	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
995	19-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative

Table 1. PCR-based data on *Ceratomyxa shasta* in kokanee and whitefish collected from above and below McIntyre Dam in Year 2000

Fish Number	Date Sampled 2000	Lake	Species	Age	<i>C. shasta</i> PCR results
996	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
997	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
998	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
999	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
1000	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
1001	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
1002	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
1003	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
1004	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
1005	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
1006	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
1007	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
1008	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
1009	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
1010	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
1011	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
1012	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
1013	20-Sep	Deep Cr.	Kokanee	Adult-spawner	Negative
1020	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1021	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Positive
1022	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1023	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Positive
1024	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Positive
1025	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Positive
1026	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1027	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Positive
1028	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1029	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1030	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1031	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1032	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1033	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1034	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1035	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1036	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1037	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1038	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1039	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1040	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1041	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1042	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1043	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1044	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1045	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1046	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1047	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1048	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1049	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1050	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1051	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1052	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1053	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1054	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1055	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1056	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1057	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1058	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1059	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1060	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1061	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1062	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative

Table 1. PCR-based data on *Ceratomyxa shasta* in kokanee and whitefish collected from above and below McIntyre Dam in Year 2000

Fish Number	Date Sampled 2000	Lake	Species	Age	<i>C. shasta</i> PCR results
1063	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1064	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1065	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1066	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1067	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1068	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1069	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1070	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1071	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1072	21-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1073	24-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1074	24-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1075	24-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1076	24-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1077	24-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1078	24-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1079	24-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1080	24-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1081	24-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1082	24-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1083	24-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1084	24-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1085	24-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1086	24-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1087	24-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1088	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1089	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1090	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1091	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1092	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1093	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1094	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1095	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1096	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1097	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1098	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1099	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1100	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1101	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1102	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1103	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1104	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1105	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1106	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1107	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1108	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1109	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1110	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1111	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1112	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1113	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1114	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1115	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1116	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1117	26-Sep	Mission Cr.	Kokanee	Adult-spawner	Negative
1326	20-Nov	Osoyoos Lk	Whitefish		Negative
1336	20-Nov	Osoyoos Lk	Whitefish		Negative
1379	21-Nov	Osoyoos Lk	Whitefish		Negative
1380	21-Nov	Osoyoos Lk	Whitefish		Negative
2000	6-Nov	Okanagan Lk	Whitefish		Negative
2001	6-Nov	Okanagan Lk	Whitefish		Negative

Table 1. PCR-based data on *Ceratomyxa shasta* in kokanee and whitefish collected from above and below McIntyre Dam in Year 2000

Fish Number	Date Sampled 2000	Lake	Species	Age	<i>C. shasta</i> PCR results
2002	6-Nov	Okanagan Lk	Whitefish		Negative
2003	6-Nov	Okanagan Lk	Whitefish		Negative
2004	6-Nov	Okanagan Lk	Whitefish		Negative
2005	6-Nov	Okanagan Lk	Whitefish		Negative
2006	6-Nov	Okanagan Lk	Whitefish		Negative
2007	6-Nov	Okanagan Lk	Whitefish		Negative
2008	6-Nov	Okanagan Lk	Whitefish		Negative
2009	6-Nov	Okanagan Lk	Whitefish		Negative
2010	6-Nov	Okanagan Lk	Whitefish		Negative
2011	6-Nov	Okanagan Lk	Whitefish		Negative
2012	6-Nov	Okanagan Lk	Whitefish		Negative
2013	6-Nov	Okanagan Lk	Whitefish		Negative
2014	6-Nov	Okanagan Lk	Whitefish		Negative
2015	6-Nov	Okanagan Lk	Whitefish		Negative
2016	6-Nov	Okanagan Lk	Whitefish		Negative
2017	6-Nov	Okanagan Lk	Whitefish		Negative
2018	6-Nov	Okanagan Lk	Whitefish		Negative
2019	6-Nov	Okanagan Lk	Whitefish		Negative
2020	6-Nov	Okanagan Lk	Whitefish		Negative
2021	6-Nov	Okanagan Lk	Whitefish		Negative
2022	6-Nov	Okanagan Lk	Whitefish		Negative
2023	6-Nov	Okanagan Lk	Whitefish		Negative
2024	6-Nov	Okanagan Lk	Whitefish		Negative
2025	6-Nov	Okanagan Lk	Whitefish		Negative
2026	6-Nov	Okanagan Lk	Whitefish		Negative
2027	6-Nov	Okanagan Lk	Whitefish		Negative
2028	6-Nov	Okanagan Lk	Whitefish		Negative
2029	6-Nov	Okanagan Lk	Whitefish		Negative

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Table 2. PCR-based data on Ceratomyxa shasta in kokanee and whitefish collected from above and below McIntyre Dam in Year 2001

Fish Number	Date Sampled 2001	Lake	Species	Age	<i>C. shasta</i> PCR results
3001	23-Apr	Okanagan Lk	Whitefish		negative
3002	23-Apr	Okanagan Lk	Whitefish		negative
3003	23-Apr	Okanagan Lk	Whitefish		negative
3004	23-Apr	Okanagan Lk	Whitefish		negative
3005	23-Apr	Okanagan Lk	Whitefish		negative
3006	23-Apr	Okanagan Lk	Whitefish		negative
3007	23-Apr	Okanagan Lk	Whitefish		negative
3008	23-Apr	Okanagan Lk	Whitefish		negative
3009	23-Apr	Okanagan Lk	Whitefish		negative
3010	23-Apr	Okanagan Lk	Whitefish		negative
3011	23-Apr	Okanagan Lk	Whitefish		negative
3012	23-Apr	Okanagan Lk	Whitefish		negative
3013	23-Apr	Okanagan Lk	Whitefish		negative
3014	23-Apr	Okanagan Lk	Whitefish		negative
3015	23-Apr	Okanagan Lk	Whitefish		negative
3016	23-Apr	Okanagan Lk	Whitefish		negative
3017	23-Apr	Okanagan Lk	Whitefish		negative
3018	23-Apr	Okanagan Lk	Whitefish		negative
3019	23-Apr	Okanagan Lk	Whitefish		negative
3081	23-Apr	Skaha Lk	Whitefish		negative
3082	23-Apr	Skaha Lk	Whitefish		negative
3083	23-Apr	Skaha Lk	Whitefish		negative
3084	23-Apr	Skaha Lk	Whitefish		negative
3085	23-Apr	Skaha Lk	Whitefish		negative
3086	23-Apr	Skaha Lk	Whitefish		negative
3156	26-Apr	Osoyoos Lk	Whitefish		negative
3157	26-Apr	Osoyoos Lk	Whitefish		negative
3158	26-Apr	Osoyoos Lk	Whitefish		negative
3159	26-Apr	Osoyoos Lk	Whitefish		negative
3161	26-Apr	Osoyoos Lk	Whitefish		negative
3162	26-Apr	Osoyoos Lk	Whitefish		negative
3165	26-Apr	Osoyoos Lk	Whitefish		negative
3299	3-Jun	Okanagan Lk	Whitefish		negative
3300	3-Jun	Okanagan Lk	Whitefish		negative
3301	3-Jun	Okanagan Lk	Whitefish		negative
3302	3-Jun	Okanagan Lk	Whitefish		negative
3303	3-Jun	Okanagan Lk	Whitefish		negative
3304	3-Jun	Okanagan Lk	Whitefish		negative
3305	3-Jun	Okanagan Lk	Whitefish		negative
3454	5-Jun	Osoyoos Lk	Whitefish		negative
3455	5-Jun	Osoyoos Lk	Whitefish		negative
3456	5-Jun	Osoyoos Lk	Whitefish		negative
4001	21-Aug	Okanagan Lk	Whitefish		negative
4002	21-Aug	Okanagan Lk	Whitefish		negative
4003	21-Aug	Okanagan Lk	Whitefish		negative
4004	21-Aug	Okanagan Lk	Whitefish		negative
4005	21-Aug	Okanagan Lk	Whitefish		negative
4006	21-Aug	Okanagan Lk	Whitefish		negative
4007	21-Aug	Okanagan Lk	Whitefish		negative
4008	21-Aug	Okanagan Lk	Whitefish		negative
4009	21-Aug	Okanagan Lk	Whitefish		negative
4010	21-Aug	Okanagan Lk	Whitefish		negative
4011	21-Aug	Okanagan Lk	Whitefish		negative
4012	21-Aug	Okanagan Lk	Whitefish		negative
4013	21-Aug	Okanagan Lk	Whitefish		negative
4014	21-Aug	Okanagan Lk	Whitefish		negative
4015	21-Aug	Okanagan Lk	Whitefish		negative
4016	21-Aug	Okanagan Lk	Whitefish		negative
4017	21-Aug	Okanagan Lk	Whitefish		negative
4344	24-Sep	Okanagan Lk-Mission Cr	Kokane	Adult-spawner	negative
4345	24-Sep	Okanagan Lk-Mission Cr	Kokane	Adult-spawner	negative

Disease risk assessment sampling

Table 2. PCR-based data on Ceratomyxa shasta in kokanee and whitefish collected from above and below McIntyre Dam in Year 2001

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Table 2. PCR-based data on Ceratomyxa shasta in kokanee and whitefish collected from above and below McIntyre Dam in Year 2001

Fish Number	Date Sampled 2001	Lake	Species	Age	<i>C. shasta</i> PCR results
4407	24-Sep	Okanagan Lk-Mission Cr	Kokanee	Adult-spawner	negative
4408	24-Sep	Okanagan Lk-Mission Cr	Kokanee	Adult-spawner	negative
4409	24-Sep	Okanagan Lk-Mission Cr	Kokanee	Adult-spawner	negative
4410	24-Sep	Okanagan Lk-Mission Cr	Kokanee	Adult-spawner	negative
4411	24-Sep	Okanagan Lk-Mission Cr	Kokanee	Adult-spawner	negative
4412	24-Sep	Okanagan Lk-Mission Cr	Kokanee	Adult-spawner	negative
4413	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4414	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4415	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4416	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4417	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4418	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4419	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4420	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4421	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4422	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4423	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4424	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4425	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4426	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4427	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4428	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4429	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4430	27-Sep	Okanagan Lk-Deep Cr	Kokanee	Adult-spawner	negative
4431	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4432	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4433	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4434	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4435	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4436	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4437	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4438	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4439	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4440	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4441	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4442	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4443	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4444	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4445	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4446	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4447	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4448	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4449	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4450	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4451	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4452	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4453	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4454	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4455	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4456	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4457	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4458	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4459	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4460	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4461	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4462	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4463	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4464	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4465	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4466	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4467	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative

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Table 2. PCR-based data on Ceratomyxa shasta in kokanee and whitefish collected from above and below McIntyre Dam in Year 2001

Fish Number	Date Sampled 2001	Lake	Species	Age	<i>C. shasta</i> PCR results
4468	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4469	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4470	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4471	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4472	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4473	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4474	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4475	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4476	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4477	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4478	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4479	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4480	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4481	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4482	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4483	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4484	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4485	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4486	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4487	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4488	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4489	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4490	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4491	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4492	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4493	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4494	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4495	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4496	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4497	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4498	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4499	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4500	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4501	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4502	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4503	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4504	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4505	2-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4506	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4507	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4508	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4509	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4510	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4511	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4512	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4513	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4514	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4515	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4516	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4517	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4518	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4519	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4520	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4521	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4522	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4523	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4524	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4525	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4526	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4527	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4528	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative

Disease risk assessment sampling

Table 2. PCR-based data on Ceratomyxa shasta in kokanee and whitefish collected from above and below McIntyre Dam in Year 2001

Fish Number	Date Sampled 2001	Lake	Species	Age	<i>C. shasta</i> PCR results
4529	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4530	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4531	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4532	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4533	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4534	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4535	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4536	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4537	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4538	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4539	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4540	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4541	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4542	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4543	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4544	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4545	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4546	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4547	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4548	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4549	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4550	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4551	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4552	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4553	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4554	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4555	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4556	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4557	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4558	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4559	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4560	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4561	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4562	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4563	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4564	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4565	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4566	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4567	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4568	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4569	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4570	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4571	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4572	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4573	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4574	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4575	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4576	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4577	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4578	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4579	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4580	15-Oct	Okanagan Lk	Kokanee	fry - 6 months	negative
4581	13-Nov	Okanagan Lk	Whitefish		negative
4582	13-Nov	Okanagan Lk	Whitefish		negative
4583	13-Nov	Okanagan Lk	Whitefish		negative
4584	13-Nov	Okanagan Lk	Whitefish		negative
4585	13-Nov	Okanagan Lk	Whitefish		negative
4586	13-Nov	Okanagan Lk	Whitefish		negative
4587	13-Nov	Okanagan Lk	Whitefish		negative
4588	13-Nov	Okanagan Lk	Whitefish		negative
4589	13-Nov	Okanagan Lk	Whitefish		negative

Disease risk assessment sampling

Table 2. PCR-based data on Ceratomyxa shasta in kokanee and whitefish collected from above and below McIntyre Dam in Year 2001

Fish Number	Date Sampled 2001	Lake	Species	Age	<i>C. shasta</i> PCR results
4590	13-Nov	Okanagan Lk	Whitefish		negative
4591	13-Nov	Okanagan Lk	Whitefish		negative
4592	13-Nov	Okanagan Lk	Whitefish		negative
4593	14-Nov	Osoyoos Lk	Whitefish		negative
4594	14-Nov	Osoyoos Lk	Whitefish		negative
4595	14-Nov	Osoyoos Lk	Whitefish		negative
4596	14-Nov	Osoyoos Lk	Whitefish		negative
4606	14-Nov	Osoyoos Lk	Whitefish		negative
4607	14-Nov	Osoyoos Lk	Whitefish		negative
4608	14-Nov	Osoyoos Lk	Whitefish		negative
4609	14-Nov	Osoyoos Lk	Whitefish		negative
4610	14-Nov	Osoyoos Lk	Whitefish		negative
4611	14-Nov	Osoyoos Lk	Whitefish		negative
4612	14-Nov	Osoyoos Lk	Whitefish		negative
4613	14-Nov	Osoyoos Lk	Whitefish		negative
4614	14-Nov	Osoyoos Lk	Whitefish		negative
4615	14-Nov	Osoyoos Lk	Whitefish		negative
4616	14-Nov	Osoyoos Lk	Whitefish		negative
4617	14-Nov	Osoyoos Lk	Whitefish		negative
4618	14-Nov	Osoyoos Lk	Whitefish		negative
4619	14-Nov	Osoyoos Lk	Whitefish		negative
4620	14-Nov	Osoyoos Lk	Whitefish		negative
4621	14-Nov	Osoyoos Lk	Whitefish		negative
4622	14-Nov	Osoyoos Lk	Whitefish		negative
4623	14-Nov	Osoyoos Lk	Whitefish		negative
4624	14-Nov	Osoyoos Lk	Whitefish		negative
4625	14-Nov	Osoyoos Lk	Whitefish		negative
4626	14-Nov	Osoyoos Lk	Whitefish		negative
4627	14-Nov	Osoyoos Lk	Whitefish		negative
4628	14-Nov	Osoyoos Lk	Whitefish		negative
4629	14-Nov	Osoyoos Lk	Whitefish		negative
4630	14-Nov	Osoyoos Lk	Whitefish		negative

Disease risk assessment sampling

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
5001	15-Apr	Skaha Lake	WF		26.6		imm F	NVD	NVD	Neg	
5002	15-Apr	Skaha Lake	WF		30.1		imm M	NVD	NVD	Neg	
5003	15-Apr	Skaha Lake	WF		32.4		imm F	NVD	NVD	Neg	
5004	15-Apr	Skaha Lake	PMB		7.7		imm	NVD	NVD		
5005	15-Apr	Skaha Lake	PMB		11.5		imm	NVD	NVD		
5006	15-Apr	Skaha Lake	PMB		8.6		imm	NVD	NVD		
5007	15-Apr	Skaha Lake	PMB		11.9		imm	NVD	NVD		
5008	15-Apr	Skaha Lake	PMB		13.0		imm	NVD	NVD		
5009	15-Apr	Skaha Lake	PMB		9.7		imm	NVD	NVD		
5010	15-Apr	Skaha Lake	NSC		24.2		imm	NVD	NVD		
5011	15-Apr	Skaha Lake	NSC		38.5		imm F ?	NVD	NVD	eye problems	
5012	15-Apr	Skaha Lake	NSC		37.8		imm M?	NVD	NVD		
5013	15-Apr	Skaha Lake	NSC		42.5		imm M?	NVD	NVD		
5014	15-Apr	Skaha Lake	NSC		37.6		imm M?	NVD	NVD		
5015	15-Apr	Skaha Lake	NSC		46.5		imm F?	NVD	NVD		
5016	15-Apr	Skaha Lake	SU		38.4		imm M	NVD	NVD		
5017	15-Apr	Skaha Lake	SU		41.7		imm F	NVD	NVD		
5018	15-Apr	Skaha Lake	SU		36.9		imm M	NVD	NVD		
5019	15-Apr	Skaha Lake	SU		36.2		imm	NVD	NVD		
5020	15-Apr	Skaha Lake	SU		36.4		imm	NVD	NVD		
5021	15-Apr	Skaha Lake	SU		39.0		imm F	NVD	NVD		
5022	15-Apr	Skaha Lake	SMB		16.6		imm	NVD	NVD		
5023	15-Apr	Skaha Lake	SMB		22.4		imm	NVD	NVD		
5024	15-Apr	Skaha Lake	SMB		15.2		imm	NVD	NVD		
5025	15-Apr	Skaha Lake	SMB		27.6		imm F	NVD	NVD		
5026	15-Apr	Skaha Lake	SMB		15.3		imm	NVD	NVD		
5027	15-Apr	Skaha Lake	SMB		14.8		imm	NVD	NVD		
5028	15-Apr	Skaha Lake	SMB		26.2		imm F	NVD	NVD		
5029	15-Apr	Skaha Lake	SMB		14.8		imm	NVD	NVD		
5030	15-Apr	Skaha Lake	SMB		7.9		imm	NVD	NVD		
5031	15-Apr	Skaha Lake	SMB		26.1		imm	NVD	NVD		
5032	15-Apr	Skaha Lake	SMB		28.3		imm	NVD	NVD		
5033	15-Apr	Skaha Lake	SMB		17.5		imm	NVD	NVD		
5034	15-Apr	Skaha Lake	SMB		25.0		imm F	NVD	NVD		
5035	15-Apr	Skaha Lake	SMB		33.0		imm F	NVD	NVD		
5036	15-Apr	Skaha Lake	SMB		21.6		imm	NVD	NVD		
5037	15-Apr	Skaha Lake	SMB		8.2		imm	NVD	NVD	Photo 22 w/ HA	
5038	15-Apr	Skaha Lake	SMB		8.0		imm	NVD	NVD	Photo 21	
5039	15-Apr	Skaha Lake	SMB		30.0		imm	NVD	NVD		
5040	15-Apr	Skaha Lake	SMB		27.9		imm	NVD	NVD		
5041	15-Apr	Skaha Lake	SMB		16.2		imm	NVD	NVD		
5042	15-Apr	Skaha Lake	SMB		14.1		imm	NVD	NVD		
5043	15-Apr	Skaha Lake	SMB		8.5		imm	NVD	NVD		
5044	15-Apr	Skaha Lake	SMB		14.2		imm	NVD	NVD		
5045	15-Apr	Skaha Lake	SMB		7.4		imm	NVD	NVD		
5046	15-Apr	Skaha Lake	SMB		16.0		imm	NVD	NVD		
5047	15-Apr	Skaha Lake	SMB		8.4		imm	NVD	NVD		
5048	15-Apr	Skaha Lake	SMB		14.7		imm	NVD	NVD		
5049	15-Apr	Skaha Lake	SMB		8.3		imm	NVD	NVD		
5050	15-Apr	Skaha Lake	SMB		14.0		imm	NVD	NVD		
5051	15-Apr	Skaha Lake	SMB		15.6		imm	NVD	NVD		
5052	15-Apr	Skaha Lake	SMB		7.4		imm	NVD	NVD		
5053	15-Apr	Skaha Lake	SMB		14.6		imm	NVD	NVD		
5054	15-Apr	Skaha Lake	SMB		14.6		imm	NVD	NVD		
5055	15-Apr	Skaha Lake	SMB		14.4		imm	NVD	NVD		
5056	15-Apr	Skaha Lake	SMB		14.5		imm	NVD	NVD		
5057	15-Apr	Skaha Lake	SMB		7.8		imm	NVD	NVD		
5058	15-Apr	Skaha Lake	SMB		15.7		imm	NVD	NVD		
5059	15-Apr	Skaha Lake	SMB		16.1		imm	NVD	NVD		
5060	15-Apr	Skaha Lake	SMB		16.6		imm	NVD	NVD		
5061	15-Apr	Skaha Lake	SMB		15.3		imm	NVD	NVD		
5062	15-Apr	Skaha Lake	SMB		14.5		imm	NVD	NVD		
5063	15-Apr	Skaha Lake	SMB		15.2		imm	NVD	NVD		
5064	15-Apr	Skaha Lake	SMB		7.8		imm	NVD	NVD		
5065	15-Apr	Skaha Lake	SMB		8.0		imm	NVD	NVD		
5066	15-Apr	Skaha Lake	SMB		8.0		imm	NVD	NVD		
5067	15-Apr	Skaha Lake	SMB		10.9		imm	NVD	NVD		
5068	15-Apr	Skaha Lake	SMB		8.1		imm	NVD	NVD		
5069	15-Apr	Skaha Lake	SMB		8.3		imm	NVD	NVD		
5070	15-Apr	Skaha Lake	SMB		7.7		imm	NVD	NVD		

Disease risk assessment sampling

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
5071	15-Apr	Skaha Lake	SMB		8.2		imm	NVD	NVD		
5072	15-Apr	Skaha Lake	SMB		8.4		imm	NVD	NVD		
5073	15-Apr	Skaha Lake	CAS		6.7		imm F	NVD	NVD		
5074	15-Apr	Skaha Lake	CAS		6.9		imm F	NVD	NVD		
5075	15-Apr	Skaha Lake	CAS		8.0		imm F	NVD	NVD		
5076	17-Apr	Osoyoos Lake	WF		13.7		imm	NVD	NVD	Neg	
5077	17-Apr	Osoyoos Lake	WF		13.8		imm	NVD	NVD	Neg	
5078	17-Apr	Osoyoos Lake	WF		15.8		imm	NVD	NVD	Neg	
5079	17-Apr	Osoyoos Lake	WF		15.6		imm	NVD	NVD	Neg	
5080	17-Apr	Osoyoos Lake	WF		16.0		imm	NVD	NVD	Neg	
5081	17-Apr	Osoyoos Lake	WF		14.3		imm	NVD	NVD	Neg	
5082	17-Apr	Osoyoos Lake	WF		15.2		imm	NVD	NVD	Neg	
5083	17-Apr	Osoyoos Lake	WF		15.6		imm	NVD	NVD	Neg	
5084	17-Apr	Osoyoos Lake	WF		15.1		imm	NVD	NVD	Neg	
5085	17-Apr	Osoyoos Lake	WF		16.1		imm	NVD	NVD	Neg	
5086	17-Apr	Osoyoos Lake	WF		24.5		imm F	NVD	NVD	Neg	
5087	17-Apr	Osoyoos Lake	WF		26.6		imm M	NVD	NVD	Neg	
5088	17-Apr	Osoyoos Lake	NSC		38.1		imm	NVD	NVD		
5089	17-Apr	Osoyoos Lake	NSC		35.0		imm	NVD	NVD		
5090	17-Apr	Osoyoos Lake	NSC		14.6		imm	NVD	NVD		
5091	17-Apr	Osoyoos Lake	SU		26.2		imm	NVD	NVD		
5092	17-Apr	Osoyoos Lake	SU		42.0		imm	NVD	NVD		
5093	17-Apr	Osoyoos Lake	SU		44.5		imm	NVD	NVD		
5094	17-Apr	Osoyoos Lake	SU		21.2		imm	NVD	NVD		
5095	17-Apr	Osoyoos Lake	SU		24.8		imm	NVD	NVD		
5096	17-Apr	Osoyoos Lake	SU		42.1		imm	NVD	NVD		
5097	17-Apr	Osoyoos Lake	SU		48.2		imm F	NVD	NVD		
5098	17-Apr	Osoyoos Lake	SU		50.4		imm F	NVD	NVD		
5099	17-Apr	Osoyoos Lake	SU		42.1		imm F	NVD	NVD		
5100	17-Apr	Osoyoos Lake	NSC		13.1		imm	NVD	NVD		
5101	17-Apr	Osoyoos Lake	NSC		48.2		imm F	NVD	NVD		
5102	17-Apr	Osoyoos Lake	NSC		51.5		imm F	NVD	NVD		
5103	17-Apr	Osoyoos Lake	YP		9.8		Sp M	NVD	NVD		
5104	17-Apr	Osoyoos Lake	YP		9.6		Sp M	NVD	NVD		
5105	17-Apr	Osoyoos Lake	YP		11.6		Sp M	NVD	NVD		
5106	17-Apr	Osoyoos Lake	YP		7.6		Sp M	NVD	NVD		
5107	17-Apr	Osoyoos Lake	YP		11.3		Sp M	NVD	NVD		
5108	17-Apr	Osoyoos Lake	YP		12.1		Sp M	NVD	NVD		
5109	17-Apr	Osoyoos Lake	YP		11.0		Sp M	NVD	NVD		
5110	17-Apr	Osoyoos Lake	YP		10.8		Sp M	NVD	NVD		
5111	17-Apr	Osoyoos Lake	YP		10.9		Sp M	NVD	NVD		
5112	17-Apr	Osoyoos Lake	YP		14.9		Sp M	NVD	NVD		
5113	17-Apr	Osoyoos Lake	YP		13.5		Sp M	NVD	NVD		
5114	17-Apr	Osoyoos Lake	YP		11.2		Sp M	NVD	NVD		
5115	17-Apr	Osoyoos Lake	YP		12.2		Sp M	NVD	NVD		
5116	17-Apr	Osoyoos Lake	YP		11.3						
5117	17-Apr	Osoyoos Lake	YP		14.1		Sp M	NVD	NVD		
5118	17-Apr	Osoyoos Lake	YP		17.9		Sp M	NVD	NVD		
5119	17-Apr	Osoyoos Lake	YP		11.0		Sp M	NVD	NVD		
5120	17-Apr	Osoyoos Lake	YP		15.2		Sp M	NVD	NVD		
5121	17-Apr	Osoyoos Lake	YP		13.6		Sp M	NVD	NVD		
5122	17-Apr	Osoyoos Lake	YP		12.1		Sp M	NVD	NVD		
5123	17-Apr	Osoyoos Lake	YP		11.4		Sp M	NVD	NVD		
5124	17-Apr	Osoyoos Lake	YP		16.8		Sp M	NVD	NVD		
5125	17-Apr	Osoyoos Lake	YP		15.9		Sp M	NVD	NVD		
5126	17-Apr	Osoyoos Lake	YP		19.9		Sp M	NVD	NVD		
5127	17-Apr	Osoyoos Lake	YP		10.6		Sp M	NVD	NVD		
5128	17-Apr	Osoyoos Lake	YP		9.9		Sp M	NVD	NVD		
5129	17-Apr	Osoyoos Lake	YP		10.7		Sp M	NVD	NVD		
5130	17-Apr	Osoyoos Lake	YP		10.1		Sp M	NVD	NVD		
5131	17-Apr	Osoyoos Lake	YP		11.2		Sp M	NVD	NVD		
5132	17-Apr	Osoyoos Lake	YP		9.8		Sp M	NVD	NVD		
5133	17-Apr	Osoyoos Lake	YP		9.7		Sp M	NVD	NVD		
5134	17-Apr	Osoyoos Lake	YP		12.2		Sp M	NVD	NVD		
5135	17-Apr	Osoyoos Lake	YP		11.2		Sp M	NVD	NVD		
5136	17-Apr	Osoyoos Lake	YP		11.0		imm	NVD	NVD		
5137	17-Apr	Osoyoos Lake	YP		11.3		Sp M	NVD	NVD		
5138	17-Apr	Osoyoos Lake	YP		12.1		Sp M	NVD	NVD		
5139	17-Apr	Osoyoos Lake	YP		10.6		Sp M	NVD	NVD		
5140	17-Apr	Osoyoos Lake	YP		11.2		Sp M	NVD	NVD		

Disease risk assessment sampling

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
5141	17-Apr	Osoyoos Lake	YP		12.6		Sp M	NVD	NVD		
5142	17-Apr	Osoyoos Lake	YP		11.4		Sp M	NVD	NVD		
5143	17-Apr	Osoyoos Lake	YP		12.8		Sp M	NVD	NVD		
5144	17-Apr	Osoyoos Lake	YP		15.3		Sp M	NVD	NVD		
5145	17-Apr	Osoyoos Lake	YP		15.3		Sp M	NVD	NVD		
5146	17-Apr	Osoyoos Lake	YP		12.6		Sp M	NVD	NVD		
5147	17-Apr	Osoyoos Lake	YP		10.4		Sp M	NVD	NVD		
5148	17-Apr	Osoyoos Lake	YP		12.9		Sp M	NVD	NVD		
5149	17-Apr	Osoyoos Lake	YP		12.5		Sp M	NVD	NVD		
5150	17-Apr	Osoyoos Lake	YP		16.2		Sp M	NVD	NVD		
5150	18-Apr	Osoyoos Lake	WF		13.5		imm	NVD	NVD	Neg	
5151	18-Apr	Osoyoos Lake	WF		15.3		imm	NVD	NVD	Neg	
5152	18-Apr	Osoyoos Lake	WF		15.0		imm	NVD	NVD	Neg	
5153	18-Apr	Osoyoos Lake	WF		12.5		imm	NVD	NVD	Neg	
5154	18-Apr	Osoyoos Lake	WF		14.8		imm	NVD	NVD	Neg	
5155	18-Apr	Osoyoos Lake	WF		14.8		imm	NVD	NVD	Neg	
5156	18-Apr	Osoyoos Lake	WF		17.4		imm	NVD	NVD	Neg	
5157	18-Apr	Osoyoos Lake	WF		16.2		imm	NVD	NVD	Neg	
5158	18-Apr	Osoyoos Lake	WF		13.2		imm	NVD	NVD	Neg	
5159	18-Apr	Osoyoos Lake	WF		14.3		imm	NVD	NVD	Neg	
5160	18-Apr	Osoyoos Lake	WF		17.9		imm	NVD	NVD	Neg	
5161	18-Apr	Osoyoos Lake	WF		16.7		imm	NVD	NVD	Neg	
5162	18-Apr	Osoyoos Lake	WF		14.3		imm	NVD	NVD	Neg	
5163	18-Apr	Osoyoos Lake	WF		14.5		imm	NVD	NVD	Neg	
5164	18-Apr	Osoyoos Lake	WF		16.7		imm	NVD	NVD	Neg	
5165	18-Apr	Osoyoos Lake	WF		13.3		imm	NVD	NVD	Neg	
5166	18-Apr	Osoyoos Lake	WF		14.3		imm	NVD	NVD	Neg	
5167	18-Apr	Osoyoos Lake	WF		14.6		imm	NVD	NVD	Neg	
5168	18-Apr	Osoyoos Lake	WF		18.0		imm	NVD	NVD	Neg	
5169	18-Apr	Osoyoos Lake	WF		15.0		imm	NVD	NVD	Neg	
5170	18-Apr	Osoyoos Lake	WF		13.8		imm	NVD	NVD	Neg	
5171	18-Apr	Osoyoos Lake	WF		14.7		imm	NVD	NVD	Neg	
5172	18-Apr	Osoyoos Lake	WF		15.3		imm	NVD	NVD	Neg	
5173	18-Apr	Osoyoos Lake	WF		12.4		imm	NVD	NVD	Neg	
5174	18-Apr	Osoyoos Lake	WF		18.3		imm	NVD	NVD	Neg	
5175	18-Apr	Osoyoos Lake	WF		23.3		imm	NVD	NVD	Neg	
5176	18-Apr	Osoyoos Lake	WF		32.3		imm M	NVD	NVD	Neg	
5177	18-Apr	Osoyoos Lake	WF		35.0		imm F	NVD	NVD	Neg	
5178	18-Apr	Osoyoos Lake	PCC		27.4		imm	NVD	NVD		
5179	18-Apr	Osoyoos Lake	PCC		23.1		F	NVD	NVD		
5180	18-Apr	Osoyoos Lake	PCC		23.9		imm	NVD	NVD		
5181	18-Apr	Osoyoos Lake	NSC		20.5		imm	NVD	NVD		
5182	18-Apr	Osoyoos Lake	NSC		34.1		M	NVD	NVD		
5183	18-Apr	Osoyoos Lake	NSC		32.1		M	NVD	NVD		
5184	18-Apr	Osoyoos Lake	NSC		35.5		imm	NVD	NVD		
5185	18-Apr	Osoyoos Lake	NSC		41.9		imm	NVD	NVD		
5186	18-Apr	Osoyoos Lake	NSC		42.5		F	NVD	NVD		
5187	18-Apr	Osoyoos Lake	SU		39.1		F	NVD	NVD		
5188	18-Apr	Osoyoos Lake	SU		23.6		imm	NVD	NVD		
5189	18-Apr	Osoyoos Lake	SU		24.0		imm	NVD	NVD		
5190	18-Apr	Osoyoos Lake	SU		22.9		imm	NVD	NVD		
5191	18-Apr	Osoyoos Lake	SU		32.5		M	NVD	NVD		
5192	18-Apr	Osoyoos Lake	SU		35.0		imm	NVD	NVD		
5193	18-Apr	Osoyoos Lake	SU		34.0		imm	NVD	NVD		
5194	18-Apr	Osoyoos Lake	SU		43.5		M	NVD	NVD		
5195	18-Apr	Osoyoos Lake	SU		43.0		imm	NVD	NVD		
5196	18-Apr	Osoyoos Lake	SU		46.8		F	NVD	NVD		
5197	18-Apr	Osoyoos Lake	YP		12.2		Sp M	NVD	NVD		
5198	18-Apr	Osoyoos Lake	YP		10.8		Sp M	NVD	NVD		
5199	18-Apr	Osoyoos Lake	YP		11.1		Sp M	NVD	NVD		
5200	18-Apr	Osoyoos Lake	YP		10.4		Sp M	NVD	NVD		
5201	18-Apr	Osoyoos Lake	YP		10.7		Sp M	NVD	NVD		
5202	18-Apr	Osoyoos Lake	YP		11.0		Sp M	NVD	NVD		
5203	18-Apr	Osoyoos Lake	YP		11.1		Sp M	NVD	NVD		
5204	18-Apr	Osoyoos Lake	YP		11.6		Sp M	NVD	NVD		
5205	18-Apr	Osoyoos Lake	YP		11.9		Sp M	NVD	NVD		
5206	18-Apr	Osoyoos Lake	YP		12.4		Sp M	NVD	NVD		
5207	18-Apr	Osoyoos Lake	YP		10.3		Sp M	NVD	NVD		
5208	18-Apr	Osoyoos Lake	YP		11.8		imm	NVD	NVD		
5209	18-Apr	Osoyoos Lake	YP		11.3		Sp M	NVD	NVD		

Disease risk assessment sampling

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
5210	18-Apr	Osoyoos Lake	YP		11.3		Sp M	NVD	NVD		
5211	18-Apr	Osoyoos Lake	YP		11.0		Sp M	NVD	NVD		
5212	18-Apr	Osoyoos Lake	YP		11.5		Sp M	NVD	NVD		
5213	18-Apr	Osoyoos Lake	YP		10.8		imm	NVD	NVD		
5214	18-Apr	Osoyoos Lake	YP		11.0		Sp M	NVD	NVD		
5215	18-Apr	Osoyoos Lake	YP		10.0		Sp M	NVD	NVD		
5216	18-Apr	Osoyoos Lake	YP		12.1		Sp M	NVD	NVD		
5217	18-Apr	Osoyoos Lake	YP		10.5		imm	NVD	NVD		
5218	18-Apr	Osoyoos Lake	YP		12.2		imm	NVD	NVD		
5219	18-Apr	Osoyoos Lake	YP		12.8		Sp M	NVD	NVD		
5220	18-Apr	Osoyoos Lake	YP		13.8		Sp M	NVD	NVD		
5221	18-Apr	Osoyoos Lake	YP		12.8		Sp M	NVD	NVD		
5222	18-Apr	Osoyoos Lake	YP		18.2		Sp M	NVD	NVD		
5223	18-Apr	Osoyoos Lake	YP		17.4		Sp M	NVD	NVD		
5224	18-Apr	Osoyoos Lake	YP		17.6		Sp M	NVD	NVD		
5225	18-Apr	Osoyoos Lake	YP		17.2		Sp M	NVD	NVD		
5263	16/17-June	Okanagan Lake	YP		18.0		Mat M	NVD	NVD		
5264	16/17-June	Okanagan Lake	YP		17.9		Mat M	NVD	NVD		
5265	16/17-June	Okanagan Lake	YP		18.6		Mat M	NVD	NVD		
5266	16/17-June	Okanagan Lake	YP		18.8		Mat M	NVD	NVD		
5267	16/17-June	Okanagan Lake	YP		20.0		Mat M	NVD	NVD		
5268	16/17-June	Okanagan Lake	YP		34.0		Mat M	NVD	NVD		
5269	16/17-June	Okanagan Lake	YP		11.0		Mat M	NVD	NVD		
5270	16/17-June	Okanagan Lake	YP		19.5		Mat M	NVD	NVD		
5271	16/17-June	Okanagan Lake	YP		18.0		Mat M	NVD	NVD		
5272	16/17-June	Okanagan Lake	YP		16.3		Mat M	NVD	NVD		
5273	16/17-June	Okanagan Lake	YP		15.5		Mat M	NVD	NVD		
5274	16/17-June	Okanagan Lake	YP		17.5		Mat M	NVD	NVD		
5275	16/17-June	Okanagan Lake	YP		16.5		Mat M	NVD	NVD		
5276	16/17-June	Okanagan Lake	YP		10.9		Mat M	NVD	NVD		
5277	16/17-June	Okanagan Lake	PCC		14.0		Juv	NVD	NVD		
5278	16/17-June	Okanagan Lake	PCC		13.0		Juv	NVD	NVD		
5279	16/17-June	Okanagan Lake	PCC		11.3		Juv	NVD	NVD		
5280	16/17-June	Okanagan Lake	PCC		13.2		Juv	NVD	NVD		
5281	16/17-June	Okanagan Lake	PCC		15.3		Juv	NVD	NVD		
5282	16/17-June	Okanagan Lake	PCC		11.8		Juv	NVD	NVD		
5283	16/17-June	Okanagan Lake	NSC		10.6		Juv	NVD	NVD		
5284	16/17-June	Okanagan Lake	PCC		11.0		Juv	NVD	NVD		
5285	16/17-June	Okanagan Lake	NSC		10.6		Juv	NVD	NVD		
5286	16/17-June	Okanagan Lake	PCC		16.4		Juv	NVD	NVD		
5287	16/17-June	Okanagan Lake	NSC		12.6		Juv	NVD	NVD		
5288	16/17-June	Okanagan Lake	NSC		11.0		Juv	NVD	NVD		
5289	16/17-June	Okanagan Lake	NSC		6.6		Juv	NVD	NVD		
5290	16/17-June	Okanagan Lake	NSC		12.5		Juv	NVD	NVD		
5291	16/17-June	Okanagan Lake	NSC		17.1		Juv	NVD	NVD		
5292	16/17-June	Okanagan Lake	NSC		12.0		Juv	NVD	NVD		
5293	16/17-June	Okanagan Lake	NSC		12.8		Juv	NVD	NVD		
5294	16/17-June	Okanagan Lake	PCC		13.0		Juv	NVD	NVD		External lesion (LHS) ~1cm wide between anus and lateral line
5295	16/17-June	Okanagan Lake	PCC		16.1		Juv	NVD	NVD		
5296	16/17-June	Okanagan Lake	PCC		12.0		Juv	NVD	NVD		
5297	16/17-June	Okanagan Lake	NSC		11.7		Juv	NVD	NVD		
5298	16/17-June	Okanagan Lake	NSC		19.0		Juv	NVD	NVD		
5299	16/17-June	Okanagan Lake	PCC		9.7		Juv	NVD	NVD		
5300	16/17-June	Okanagan Lake	NSC		12.4		Juv	NVD	NVD		
5301	16/17-June	Okanagan Lake	PCC		10.9		Juv	NVD	NVD		
5302	16/17-June	Okanagan Lake	NSC		27.5		Juv	NVD	NVD		
5303	16/17-June	Okanagan Lake	NSC		26.3		Juv	NVD	NVD		
5304	16/17-June	Okanagan Lake	NSC		34.0		Juv	NVD	NVD		
5305	16/17-June	Okanagan Lake	PCC		6.1		Juv	NVD	NVD		
5306	16/17-June	Okanagan Lake	SU		15.0		Imm	NVD	NVD		
5307	16/17-June	Okanagan Lake	SU		13.5		Imm	NVD	NVD		
5308	16/17-June	Okanagan Lake	SU		14.2		Imm	NVD	NVD		
5309	16/17-June	Okanagan Lake	SU		14.0		Imm	NVD	NVD		
5310	16/17-June	Okanagan Lake	PCC		11.6		Juv	NVD	NVD		
5311	16/17-June	Okanagan Lake	SU		13.5		Imm	NVD	NVD		
5312	16/17-June	Okanagan Lake	SU		13.0		Imm	NVD	NVD		
5313	16/17-June	Okanagan Lake	SU		17.5		Imm	NVD	NVD		
5314	16/17-June	Okanagan Lake	SU		29.3		Imm	NVD	NVD		
5315	16/17-June	Okanagan Lake	SU		31.1		Imm	NVD	NVD		

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
5316	16/17-June	Okanagan Lake	SU		47.2		Imm M	NVD	NVD		
5317	16/17-June	Okanagan Lake	SU		28.3		M	NVD	NVD		
5318	16/17-June	Okanagan Lake	SU		30.5		M	NVD	NVD		
5319	16/17-June	Okanagan Lake	SU		39.6		Imm F	NVD	NVD		
5320	16/17-June	Okanagan Lake	SU		32.3		Sp F	NVD	NVD		
5321	16/17-June	Okanagan Lake	SU		44.7		Imm	NVD	NVD		
5322	16/17-June	Okanagan Lake	SU		43.9		Imm	NVD	NVD		
5323	16/17-June	Okanagan Lake	SU		15.0		Imm	NVD	NVD		
5324	16/17-June	Okanagan Lake	SU		12.4		Imm	NVD	NVD		
5325	16/17-June	Okanagan Lake	SU		17.4		Imm	NVD	NVD		
5326	16/17-June	Okanagan Lake	SU		20.3		Imm	NVD	NVD		
5327	16/17-June	Okanagan Lake	SU		17.9		Imm	NVD	NVD		
5328	16/17-June	Okanagan Lake	SU		14.3		Imm	NVD	NVD		
5329	16/17-June	Okanagan Lake	SU		11.5		Imm	NVD	NVD		
5330	16/17-June	Okanagan Lake	SU		12.4		Imm	NVD	NVD		
5331	16/17-June	Okanagan Lake	SU		26.0		Imm	NVD	NVD		
5332	16/17-June	Okanagan Lake	SU		31.1		M	NVD	NVD		
5333	16/17-June	Okanagan Lake	SU		28.4		M	NVD	NVD		
5334	16/17-June	Okanagan Lake	SU		32.2		M	NVD	NVD		
5335	16/17-June	Okanagan Lake	SU		29.5		M	NVD	NVD		
5336	16/17-June	Okanagan Lake	SU		32.6		M	NVD	NVD		
5337	16/17-June	Okanagan Lake	SU		19.2		Imm	NVD	NVD		
5338	17-Jun	Skaha Lake	PMB		8.4		Mat F	NVD	NVD		
5339	17-Jun	Skaha Lake	PMB		12.3		Mat M	NVD	NVD		
5340	17-Jun	Skaha Lake	PMB		13.4		Mat F	NVD	NVD		
5341	17-Jun	Skaha Lake	PMB		14.8		Mat F	NVD	NVD		
5342	17-Jun	Skaha Lake	PMB		15.3		M	NVD	NVD		
5343	17-Jun	Skaha Lake	PMB		16.4		Mat F	NVD	NVD		
5344	17-Jun	Skaha Lake	PCC		10.4		Imm	NVD	NVD		
5345	17-Jun	Skaha Lake	PCC		7.6		Imm	NVD	NVD		
5346	17-Jun	Skaha Lake	NSC		10.1		Juv	NVD	NVD		
5347	17-Jun	Skaha Lake	NSC		10.7		Juv	NVD	NVD		
5348	17-Jun	Skaha Lake	NSC		28.6		M	NVD	NVD		
5349	17-Jun	Skaha Lake	SMB		15.1		Imm M	NVD	NVD		
5350	17-Jun	Skaha Lake	SMB		17.1		Imm	NVD	NVD		
5351	17-Jun	Skaha Lake	SMB		15.6		Imm M	NVD	NVD		
5352	17-Jun	Skaha Lake	SMB		14.6		Imm	NVD	NVD		
5353	17-Jun	Skaha Lake	SMB		15.5		Imm	NVD	NVD		
5354	17-Jun	Skaha Lake	SMB		9.9		Imm	NVD	NVD		
5355	17-Jun	Skaha Lake	SMB		14.9		Imm	NVD	NVD		
5356	17-Jun	Skaha Lake	SMB		18.3		Imm M	NVD	NVD		
5357	17-Jun	Skaha Lake	SMB		18.2		Imm M	NVD	NVD		
5358	17-Jun	Skaha Lake	SMB		17.9		Imm	NVD	NVD		
5359	17-Jun	Skaha Lake	SMB		18.1		M	NVD	NVD		
5360	17-Jun	Skaha Lake	SMB		15.0		Imm m	NVD	NVD		
5361	17-Jun	Skaha Lake	SMB		22.7		Imm M	NVD	NVD		
5362	17-Jun	Skaha Lake	SMB		21.2		Imm F	NVD	NVD		
5363	17-Jun	Skaha Lake	SMB		23.7		ImmM	NVD	NVD		
5364	17-Jun	Skaha Lake	SMB		23.8		ImmM	NVD	NVD		
5365	17-Jun	Skaha Lake	SMB		22.8		ImmM	NVD	NVD		
5366	17-Jun	Skaha Lake	SMB		23.0		ImmM	NVD	NVD		
5367	17-Jun	Skaha Lake	SMB		24.3		ImmM	NVD	NVD		
5368	17-Jun	Skaha Lake	SMB		22.9		ImmM	NVD	NVD		
5369	17-Jun	Skaha Lake	SMB		24.6		Mat M	NVD	NVD		
5370	17-Jun	Skaha Lake	SMB		24.2		Imm M	NVD	NVD		
5371	17-Jun	Skaha Lake	SMB		28.2		Mat M	NVD	NVD		
5372	17-Jun	Skaha Lake	SMB		27.5		Mat M	NVD	NVD		
5373	17-Jun	Skaha Lake	SMB		28.6		Mat M	NVD	NVD		
5374	17-Jun	Skaha Lake	SMB		29.4		Imm M	NVD	NVD		
5375	17-Jun	Skaha Lake	SMB		32.1		Mat F	NVD	NVD		
5376	17-Jun	Skaha Lake	NSC		13.2		Juv	NVD	NVD		
5377	17-Jun	Skaha Lake	NSC		22.6		M	NVD	NVD		
5378	17-Jun	Skaha Lake	NSC		19.1		Imm	NVD	NVD		
5379	17-Jun	Skaha Lake	NSC		15.8		Imm	NVD	NVD		
5380	17-Jun	Skaha Lake	NSC		21.5		M	NVD	NVD		
5381	17-Jun	Skaha Lake	NSC		16.4		Imm	NVD	NVD		
5382	17-Jun	Skaha Lake	SU		42.2		Imm	NVD	NVD		
5383	17-Jun	Skaha Lake	SU		39.2		M	NVD	NVD		
5384	17-Jun	Skaha Lake	SU		44.9		Mat F	NVD	NVD		
5385	17-Jun	Skaha Lake	SU		38.5		M	NVD	NVD		

Disease risk assessment sampling

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
5386	17-Jun	Skaha Lake	SU		39.7		Imm F	NVD	NVD		
5387	17-Jun	Skaha Lake	SU		37.1		Imm	NVD	NVD		
5388	17-Jun	Skaha Lake	SU		34.2		Imm	NVD	NVD		
5389	17-Jun	Skaha Lake	SU		35.7		Imm M	NVD	NVD		
5390	17-Jun	Skaha Lake	SU		36.7		Imm M	NVD	NVD		
5391	17-Jun	Skaha Lake	SU		37.0		F	NVD	NVD		
5392	17-Jun	Skaha Lake	SU		34.3		Imm M	NVD	NVD		
5393	17-Jun	Skaha Lake	SU		41.0		F	NVD	NVD		
5394	17-Jun	Skaha Lake	PCC		28.6		Imm F	NVD	NVD		
5395	17-Jun	Skaha Lake	YP		18.2		M	NVD	NVD		
5396	17-Jun	Skaha Lake	YP		10.2		Juv	NVD	NVD		
5397	17-Jun	Skaha Lake	YP		8.8		Juv	NVD	NVD		
5398	17-Jun	Skaha Lake	SU		40.6		Mat F	NVD	NVD		
5399	17-Jun	Skaha Lake	SU		44.1		Mat F	NVD	NVD		
5400	17-Jun	Skaha Lake	SU		47.3		Imm F	NVD	NVD		
5401	17-Jun	Skaha Lake	SU		42.6		Mat F	NVD	NVD		
5402	17-Jun	Skaha Lake	SU		38.3		Imm F	NVD	NVD		
5403	17-Jun	Skaha Lake	SU		36.3		M	NVD	NVD	Lesions	
5404	17-Jun	Skaha Lake	SU		44.4		Imm M	NVD	NVD	Spawning colors	
5405	17-Jun	Skaha Lake	SU		39.6		Imm F	NVD	NVD	Parasite/Bumps under skin	
5406	17-Jun	Skaha Lake	SU		38.4		Imm M	NVD	NVD	Parasite/Bumps under skin	
5407	17-Jun	Skaha Lake	SU		37.9		Mat F	NVD	NVD		
5408	17-Jun	Skaha Lake	SU		38.9		Imm	NVD	NVD		
5409	17-Jun	Skaha Lake	SU		40.1		Imm M	NVD	NVD		
5410	17-Jun	Skaha Lake	CAS		8.0		Imm F	NVD	NVD		
5411	17-Jun	Skaha Lake	CAS		6.8		Imm F	NVD	NVD		
5412	17-Jun	Skaha Lake	CAS		5.9		Imm F	NVD	NVD		
5413	17-Jun	Skaha Lake	CAS		6.7		Imm	NVD	NVD		
5414	17-Jun	Skaha Lake	CAS		7.4		Imm	NVD	NVD		
5415	17-Jun	Skaha Lake	CAS		8.6		Imm	NVD	NVD		
5417	19-Jun	Osoyoos Lake	WF		7.4		Juv	NVD	NVD	Neg	
5418	19-Jun	Osoyoos Lake	WF		5.3		Juv	NVD	NVD	Neg	
5419	19-Jun	Osoyoos Lake	WF		16.3		Imm	NVD	NVD	Neg	
5420	19-Jun	Osoyoos Lake	WF		15.9		Imm	NVD	NVD	Neg	
5421	19-Jun	Osoyoos Lake	WF		16.2		Imm	NVD	NVD	Neg	
5422	19-Jun	Osoyoos Lake	WF		17.5		Imm	NVD	NVD	Neg	
5423	19-Jun	Osoyoos Lake	WF		17.4		Imm	NVD	NVD	Neg	
5424	19-Jun	Osoyoos Lake	WF		16.3		Imm	NVD	NVD	Neg	
5425	19-Jun	Osoyoos Lake	WF		16.7		Imm	NVD	NVD	Neg	
5426	19-Jun	Osoyoos Lake	WF		18.6		Imm	NVD	NVD	Neg	
5427	19-Jun	Osoyoos Lake	WF		17.9		Imm	NVD	NVD	Neg	
5428	19-Jun	Osoyoos Lake	WF		19.0		Imm	NVD	NVD	Neg	Scarring
5429	19-Jun	Osoyoos Lake	WF		18.3		Imm	NVD	NVD	Neg	
5430	19-Jun	Osoyoos Lake	WF		17.6		Imm	NVD	NVD	Neg	
5431	19-Jun	Osoyoos Lake	WF		17.2		Imm	NVD	NVD	Neg	
5432	19-Jun	Osoyoos Lake	WF		19.5		Imm	NVD	NVD	Neg	
5433	19-Jun	Osoyoos Lake	PCC		17.3		Imm	NVD	NVD	Was misidentified in field as a WF	
5434	19-Jun	Osoyoos Lake	WF		19.1		Imm	NVD	NVD	Neg	
5435	19-Jun	Osoyoos Lake	WF		18.7		Imm	NVD	NVD	Neg	
5436	19-Jun	Osoyoos Lake	WF		18.7		Imm	NVD	NVD	Neg	
5437	19-Jun	Osoyoos Lake	WF		20.2		Imm	NVD	NVD	Neg	
5438	19-Jun	Osoyoos Lake	YP		8.7		Imm	NVD	NVD		
5439	19-Jun	Osoyoos Lake	YP		8.8		Imm	NVD	NVD		
5440	19-Jun	Osoyoos Lake	YP		10.4		Imm	NVD	NVD		
5441	19-Jun	Osoyoos Lake	YP		8.3		Imm	NVD	NVD		
5442	19-Jun	Osoyoos Lake	YP		10.8		Imm	NVD	NVD		
5443	19-Jun	Osoyoos Lake	YP		11.2		Imm	NVD	NVD		
5444	19-Jun	Osoyoos Lake	YP		10.3		Imm	NVD	NVD		
5445	19-Jun	Osoyoos Lake	YP		11.4		Imm	NVD	NVD		
5446	19-Jun	Osoyoos Lake	YP		11.1		Imm	NVD	NVD		
5447	19-Jun	Osoyoos Lake	YP		12.3		Imm	NVD	NVD		
5448	19-Jun	Osoyoos Lake	YP		11.9		Imm	NVD	NVD		
5449	19-Jun	Osoyoos Lake	YP		21.0		Imm	NVD	NVD		
5450	19-Jun	Osoyoos Lake	YP		6.5		Imm	NVD	NVD		
5451	19-Jun	Osoyoos Lake	SMB		9.9		Imm	NVD	NVD		
5452	19-Jun	Osoyoos Lake	SMB		15.2		Imm	NVD	NVD		
5453	19-Jun	Osoyoos Lake	SMB		21.3		F	NVD	NVD		
5454	19-Jun	Osoyoos Lake	SMB		29.4		F	NVD	NVD		
5455	19-Jun	Osoyoos Lake	SMB		34.0		M	NVD	NVD		
5456	19-Jun	Osoyoos Lake	SMB		36.1		F	NVD	NVD		

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
5457	19-Jun	Osoyoos Lake	SMB		32.6		F	NVD	NVD		
5458	19-Jun	Osoyoos Lake	SU		13.1		M	NVD	NVD		
5459	19-Jun	Osoyoos Lake	SU		14.8		Imm F	NVD	NVD		Circular soft spot
5460	19-Jun	Osoyoos Lake	SU		12.7		Imm M	NVD	NVD		
5461	19-Jun	Osoyoos Lake	SU		13.7		Imm	NVD	NVD		
5462	19-Jun	Osoyoos Lake	SU		12.5		M	NVD	NVD		Bleeding from pectoral fin
5463	19-Jun	Osoyoos Lake	SU		15.0		M	NVD	NVD		
5464	19-Jun	Osoyoos Lake	SU		24.5		Imm M	NVD	NVD		
5465	19-Jun	Osoyoos Lake	SU		23.0		Imm M	NVD	NVD		
5466	19-Jun	Osoyoos Lake	SU		22.2		Mat M	NVD	NVD		
5467	19-Jun	Osoyoos Lake	SU		19.0		Imm	NVD	NVD		
5468	19-Jun	Osoyoos Lake	CAS		9.6		Imm	NVD	NVD		
5469	19-Jun	Osoyoos Lake	CAS		6.3		Imm	NVD	NVD		
5470	19-Jun	Osoyoos Lake	CAS		5.5		Imm F	NVD	NVD		
5471	19-Jun	Osoyoos Lake	SU		20.5		Mat m	NVD	NVD		
5472	19-Jun	Osoyoos Lake	SU		22.0		Imm M	NVD	NVD		Red lips
5473	19-Jun	Osoyoos Lake	SU		22.6		Imm M	NVD	NVD		Cut on belly
5474	19-Jun	Osoyoos Lake	SU		22.0		Imm	NVD	NVD		Red marks on body
5475	19-Jun	Osoyoos Lake	SU		23.1		Mat M	NVD	NVD		
5476	19-Jun	Osoyoos Lake	SU		26.5		Mat M	NVD	NVD		Red marks on lips
5477	19-Jun	Osoyoos Lake	SU		23.5		Mat M	NVD	NVD		
5478	19-Jun	Osoyoos Lake	SU		22.2		M	NVD	NVD		
5479	19-Jun	Osoyoos Lake	SU		21.3		M	NVD	NVD		
5480	19-Jun	Osoyoos Lake	SU		23.5		Imm M	NVD	NVD		
5481	19-Jun	Osoyoos Lake	SU		23.7		Mat M	NVD	NVD		Red marks on body
5482	19-Jun	Osoyoos Lake	SU		45.9		Mat F	NVD	NVD		Skull deformed
5483	19-Jun	Osoyoos Lake	SU		49.2		Mat F	NVD	NVD		
5484	19-Jun	Osoyoos Lake	SU		44.5		Mat F	NVD	NVD		
5485	20-Jun	Osoyoos Lake	WF		15.7		Imm	NVD	NVD		Neg
5486	20-Jun	Osoyoos Lake	WF		18.0		Imm	NVD	NVD		Neg
5487	20-Jun	Osoyoos Lake	WF		16.5		Imm	NVD	NVD		Neg
5488	20-Jun	Osoyoos Lake	WF		18.0		Imm	NVD	NVD		Neg
5489	20-Jun	Osoyoos Lake	WF		17.0		Imm	NVD	NVD		Neg
5490	20-Jun	Osoyoos Lake	WF		16.0		Imm	NVD	NVD		Neg
5491	20-Jun	Osoyoos Lake	WF		15.5		Imm	NVD	NVD		Neg
5492	20-Jun	Osoyoos Lake	WF		19.2		Imm	NVD	NVD		Neg
5493	20-Jun	Osoyoos Lake	WF		16.1		Imm	NVD	NVD		Neg
5494	20-Jun	Osoyoos Lake	WF		16.1		Imm	NVD	NVD		Neg
5495	20-Jun	Osoyoos Lake	WF		16.0		Imm	NVD	NVD		Neg
5496	20-Jun	Osoyoos Lake	WF		17.5		Imm	NVD	NVD		Neg
5497	20-Jun	Osoyoos Lake	WF		18.0		Imm	NVD	NVD		Neg
5498	20-Jun	Osoyoos Lake	WF		18.5		Imm	NVD	NVD		Neg
5499	20-Jun	Osoyoos Lake	WF		15.5		Imm	NVD	NVD		Neg
5500	20-Jun	Osoyoos Lake	WF		19.0		Imm	NVD	NVD		Neg
5501	20-Jun	Osoyoos Lake	WF		6.5		Imm	NVD	NVD		Neg
5502	20-Jun	Osoyoos Lake	NSC		14.2		Imm	NVD	NVD		
5503	20-Jun	Osoyoos Lake	NSC		13.5		Imm	NVD	NVD		
5504	20-Jun	Osoyoos Lake	NSC		27.2		M	NVD	NVD		
5505	20-Jun	Osoyoos Lake	NSC		26.0		M	NVD	NVD		Missing left eye
5506	20-Jun	Osoyoos Lake	NSC		42.0		F	NVD	NVD		No left eye, scars
5507	20-Jun	Osoyoos Lake	CAS		10.3		Imm	NVD	NVD		
5508	20-Jun	Osoyoos Lake	CAS		9.5		Imm F	NVD	NVD		
5509	20-Jun	Osoyoos Lake	CAS		6.7		Imm	NVD	NVD		
5510	20-Jun	Osoyoos Lake	CAS		6.5		Imm	NVD	NVD		
5511	20-Jun	Osoyoos Lake	CAS		7.5		Imm	NVD	NVD		
5512	20-Jun	Osoyoos Lake	SU		46.5		F	NVD	NVD		
5513	20-Jun	Osoyoos Lake	SU		25.0		Imm M	NVD	NVD		
5514	20-Jun	Osoyoos Lake	SU		26.5		M	NVD	NVD		
5515	20-Jun	Osoyoos Lake	SU		25.5		Imm M	NVD	NVD		
5516	20-Jun	Osoyoos Lake	SU		21.0		Imm M	NVD	NVD		
5517	20-Jun	Osoyoos Lake	SU		48.5		F	NVD	NVD		
5518	20-Jun	Osoyoos Lake	SU		45.7		F	NVD	NVD		
5519	20-Jun	Osoyoos Lake	SU		44.0		M	NVD	NVD		
5520	20-Jun	Osoyoos Lake	SU		26.0		M	NVD	NVD		
5521	20-Jun	Osoyoos Lake	SU		23.5		Imm	NVD	NVD		
5522	20-Jun	Osoyoos Lake	SU		23.5		Imm	NVD	NVD		
5523	20-Jun	Osoyoos Lake	SU		21.2		Imm	NVD	NVD		
5524	20-Jun	Osoyoos Lake	SU		22.0		Mat M	NVD	NVD		
5525	20-Jun	Osoyoos Lake	SU		20.0		Mat M	NVD	NVD		
5526	20-Jun	Osoyoos Lake	SU		13.7		Imm	NVD	NVD		

Disease risk assessment sampling

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
5527	20-Jun	Osoyoos Lake	SU		14.5		Imm	NVD	NVD		
5528	20-Jun	Osoyoos Lake	SU		12.3		Imm	NVD	NVD		
5529	20-Jun	Osoyoos Lake	SMB		20.0		Imm M	NVD	NVD		
5530	20-Jun	Osoyoos Lake	SMB		29.5		Mat M	NVD	NVD		
5531	20-Jun	Osoyoos Lake	SMB		26.5		Mat M	NVD	NVD		
5532	20-Jun	Osoyoos Lake	CAS		6.7		Imm	NVD	NVD		
5533	20-Jun	Osoyoos Lake	SMB		39.0		Mat M	NVD	NVD		
5534	20-Jun	Osoyoos Lake	SMB		31.5		Mat M	NVD	NVD		
5535	20-Jun	Osoyoos Lake	SMB		35.2		Mat M	NVD	NVD		
5536	20-Jun	Osoyoos Lake	SMB		39.0		Mat F	NVD	NVD		
5537	20-Jun	Osoyoos Lake	SMB		36.5		Mat M	NVD	NVD		
5538	20-Jun	Osoyoos Lake	SMB		27.5		Mat F	NVD	NVD		
5539	20-Jun	Osoyoos Lake	SMB		28.0		Mat F	NVD	NVD		
5540	20-Jun	Osoyoos Lake	SMB		19.8		Imm M	NVD	NVD		
5541	20-Jun	Osoyoos Lake	SU		40.0		Mat M	NVD	NVD		
5542	24-Jun	Okanagan Lake	PMB		5.1		Juv	NVD	NVD		
5543	24-Jun	Okanagan Lake	PMB		5.4		Imm	NVD	NVD		
5544	24-Jun	Okanagan Lake	PMB		5.0		Juv	NVD	NVD		
5545	24-Jun	Okanagan Lake	PMB		4.9		Imm	NVD	NVD		
5546	24-Jun	Okanagan Lake	PMB		5.2		Juv	NVD	NVD		
5547	24-Jun	Okanagan Lake	PMB		5.5		Imm	NVD	NVD		
5548	24-Jun	Okanagan Lake	PMB		6.2		Imm	NVD	NVD		
5549	24-Jun	Okanagan Lake	PMB		7.2		Imm	NVD	NVD		
5550	24-Jun	Okanagan Lake	PMB		7.2		Imm	NVD	NVD		
5551	24-Jun	Okanagan Lake	PMB		8.6		F	NVD	NVD		
5552	24-Jun	Okanagan Lake	PMB		9.0		Imm	NVD	NVD		
5553	24-Jun	Okanagan Lake	PMB		10.0		Imm	NVD	NVD		
5554	24-Jun	Okanagan Lake	PMB		9.5		Imm	NVD	NVD		
5555	24-Jun	Okanagan Lake	PMB		9.7		M	NVD	NVD		
5556	24-Jun	Okanagan Lake	PMB		11.0		M	NVD	NVD		
5557	24-Jun	Okanagan Lake	YP		10.0		Imm	NVD	NVD		
5558	24-Jun	Okanagan Lake	YP		11.2		Imm	NVD	NVD		
5559	24-Jun	Okanagan Lake	YP		9.1		Imm	NVD	NVD		
5560	24-Jun	Okanagan Lake	YP		12.2		M	NVD	NVD		
5561	24-Jun	Okanagan Lake	YP		9.9		Imm	NVD	NVD		
5562	24-Jun	Okanagan Lake	YP		11.8		Imm	NVD	NVD		
5563	24-Jun	Okanagan Lake	YP		19.4		M	NVD	NVD		
5564	24-Jun	Okanagan Lake	YP		21.3		M	NVD	NVD		
5565	24-Jun	Okanagan Lake	PCC		12.1		Imm	NVD	NVD		
5566	24-Jun	Okanagan Lake	PCC		12.9		Imm	NVD	NVD		
5567	24-Jun	Okanagan Lake	PCC		15.6		Imm	NVD	NVD		
5568	24-Jun	Okanagan Lake	PCC		12.9		Imm	NVD	NVD		scarred
5569	24-Jun	Okanagan Lake	PCC		14.5		Imm	NVD	NVD		
5570	24-Jun	Okanagan Lake	PCC		18.5		Imm	NVD	NVD		Swollen kidney/red spleen
5571	24-Jun	Okanagan Lake	PCC		19.5		Imm	NVD	NVD		Hemorrhage on lips
5572	24-Jun	Okanagan Lake	PCC		21.5		Imm	NVD	NVD		
5573	24-Jun	Okanagan Lake	RSC		4.7		Imm	NVD	NVD		
5574	24-Jun	Okanagan Lake	RSC		4.8		Imm	NVD	NVD		
5575	24-Jun	Okanagan Lake	RSC		4.9		Imm	NVD	NVD		
5576	24-Jun	Okanagan Lake	RSC		5.7		Imm	NVD	NVD		
5577	24-Jun	Okanagan Lake	RSC		5.5		Imm	NVD	NVD		
5578	24-Jun	Okanagan Lake	RSC		5.3		Imm	NVD	NVD		
5579	24-Jun	Okanagan Lake	RSC		6.4		M	NVD	NVD		
5580	24-Jun	Okanagan Lake	RSC		6.3		Imm	NVD	NVD		
5581	24-Jun	Okanagan Lake	RSC		6.5		Imm	NVD	NVD		
5582	24-Jun	Okanagan Lake	RSC		5.7		Imm	NVD	NVD		
5583	24-Jun	Okanagan Lake	RSC		6.5		Imm	NVD	NVD		
5584	24-Jun	Okanagan Lake	RSC		6.0		Imm	NVD	NVD		
5585	24-Jun	Okanagan Lake	RSC		6.3		Imm	NVD	NVD		
5586	24-Jun	Okanagan Lake	RSC		7.0		Imm	NVD	NVD		
5587	24-Jun	Okanagan Lake	RSC		7.5		Imm	NVD	NVD		
5588	24-Jun	Okanagan Lake	RSC		7.2		F	NVD	NVD		
5589	24-Jun	Okanagan Lake	RSC		7.3		F	NVD	NVD		
5590	24-Jun	Okanagan Lake	RSC		8.3		F	NVD	NVD		
5591	24-Jun	Okanagan Lake	RSC		8.2		F	NVD	NVD		
5592	24-Jun	Okanagan Lake	CAS		5.8		Juv	NVD	NVD		
5593	24-Jun	Okanagan Lake	CAS		6.4		Juv	NVD	NVD		
5594	24-Jun	Okanagan Lake	CAS		6.9		Juv	NVD	NVD		
5595	24-Jun	Okanagan Lake	CAS		9.3		Juv	NVD	NVD		
5596	24-Jun	Okanagan Lake	PCC		12.4		Imm	NVD	NVD		

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
5597	24-Jun	Okanagan Lake	NSC		9.7		F	NVD	NVD		
5598	24-Jun	Okanagan Lake	NSC		12.4		Juv	NVD	NVD		
5599	24-Jun	Okanagan Lake	NSC		12.2		Juv	NVD	NVD		
5600	24-Jun	Okanagan Lake	NSC		10.7		M	NVD	NVD		
5601	24-Jun	Okanagan Lake	NSC		12.0		Juv	NVD	NVD		
5602	24-Jun	Okanagan Lake	NSC		12.0		Juv	NVD	NVD		
5603	24-Jun	Okanagan Lake	NSC		10.7		M	NVD	NVD		
5604	24-Jun	Okanagan Lake	NSC		11.7		Juv	NVD	NVD		
5605	24-Jun	Okanagan Lake	NSC		13.8		M	NVD	NVD		
5606	24-Jun	Okanagan Lake	NSC		10.2		Juv	NVD	NVD		
5607	24-Jun	Okanagan Lake	NSC		16.1		Imm	NVD	NVD		
5608	24-Jun	Okanagan Lake	NSC		14.6		Juv	NVD	NVD		
5609	24-Jun	Okanagan Lake	NSC		15.6		Juv	NVD	NVD		
5610	24-Jun	Okanagan Lake	NSC		25.6		Imm	NVD	NVD		
5611	24-Jun	Okanagan Lake	SU		8.1		Imm	NVD	NVD		Hemorrhage and pale
5612	24-Jun	Okanagan Lake	SU		12.7		Imm	NVD	NVD		
5613	24-Jun	Okanagan Lake	SU		13.6		Imm	NVD	NVD		
5614	24-Jun	Okanagan Lake	SU		13.1		Imm	NVD	NVD		
5615	24-Jun	Okanagan Lake	SU		12.5		Imm	NVD	NVD		
5616	24-Jun	Okanagan Lake	SU		39.6		M	NVD	NVD		
5765	02-Jul	Okanagan Lake	KO		6.7	2 months		NVD	NVD	Neg	
5766	02-Jul	Okanagan Lake	KO		4.9	2 months		NVD	NVD	Neg	
5767	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5768	02-Jul	Okanagan Lake	KO		3.1	2 months		NVD	NVD	Neg	
5769	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5770	02-Jul	Okanagan Lake	KO		4.3	2 months		NVD	NVD	Neg	
5771	02-Jul	Okanagan Lake	KO		4.6	2 months		NVD	NVD	Neg	
5772	02-Jul	Okanagan Lake	KO		3.8	2 months		NVD	NVD	Neg	
5773	02-Jul	Okanagan Lake	KO		4.1	2 months		NVD	NVD	Neg	
5774	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5775	02-Jul	Okanagan Lake	KO		4.2	2 months		NVD	NVD	Neg	
5776	02-Jul	Okanagan Lake	KO		4.6	2 months		NVD	NVD	Neg	
5777	02-Jul	Okanagan Lake	KO		4.8	2 months		NVD	NVD	Neg	
5778	02-Jul	Okanagan Lake	KO		4.8	2 months		NVD	NVD	Neg	
5779	02-Jul	Okanagan Lake	KO		4.7	2 months		NVD	NVD	Neg	
5780	02-Jul	Okanagan Lake	KO		4.1	2 months		NVD	NVD	Neg	
5781	02-Jul	Okanagan Lake	KO		4.9	2 months		NVD	NVD	Neg	
5782	02-Jul	Okanagan Lake	KO		4.7	2 months		NVD	NVD	Neg	
5783	02-Jul	Okanagan Lake	KO		4.7	2 months		NVD	NVD	Neg	
5784	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5785	02-Jul	Okanagan Lake	KO		4.3	2 months		NVD	NVD	Neg	
5786	02-Jul	Okanagan Lake	KO		4.2	2 months		NVD	NVD	Neg	
5787	02-Jul	Okanagan Lake	KO		3.7	2 months		NVD	NVD	Neg	
5788	02-Jul	Okanagan Lake	KO		4.7	2 months		NVD	NVD	Neg	
5789	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5790	02-Jul	Okanagan Lake	KO		4.9	2 months		NVD	NVD	Neg	
5791	02-Jul	Okanagan Lake	KO		3.4	2 months		NVD	NVD	Neg	
5792	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5793	02-Jul	Okanagan Lake	KO		4.7	2 months		NVD	NVD	Neg	
5794	02-Jul	Okanagan Lake	KO		4.0	2 months		NVD	NVD	Neg	
5795	02-Jul	Okanagan Lake	KO		5.4	2 months		NVD	NVD	Neg	
5796	02-Jul	Okanagan Lake	KO		4.2	2 months		NVD	NVD	Neg	
5797	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5798	02-Jul	Okanagan Lake	KO		4.6	2 months		NVD	NVD	Neg	
5799	02-Jul	Okanagan Lake	KO		3.9	2 months		NVD	NVD	Neg	
5800	02-Jul	Okanagan Lake	KO		4.1	2 months		NVD	NVD	Neg	
5801	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5802	02-Jul	Okanagan Lake	KO		4.9	2 months		NVD	NVD	Neg	
5803	02-Jul	Okanagan Lake	KO		4.7	2 months		NVD	NVD	Neg	
5804	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5805	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5806	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5807	02-Jul	Okanagan Lake	KO		5.0	2 months		NVD	NVD	Neg	
5808	02-Jul	Okanagan Lake	KO		4.6	2 months		NVD	NVD	Neg	
5809	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5810	02-Jul	Okanagan Lake	KO		4.9	2 months		NVD	NVD	Neg	
5811	02-Jul	Okanagan Lake	KO		4.6	2 months		NVD	NVD	Neg	
5812	02-Jul	Okanagan Lake	KO		5.2	2 months		NVD	NVD	Neg	
5813	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5814	02-Jul	Okanagan Lake	KO		4.6	2 months		NVD	NVD	Neg	

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
5815	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5816	02-Jul	Okanagan Lake	KO		5.1	2 months		NVD	NVD	Neg	
5817	02-Jul	Okanagan Lake	KO		4.8	2 months		NVD	NVD	Neg	
5818	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5819	02-Jul	Okanagan Lake	KO		3.5	2 months		NVD	NVD	Neg	
5820	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5821	02-Jul	Okanagan Lake	KO		5.3	2 months		NVD	NVD	Neg	
5822	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5823	02-Jul	Okanagan Lake	KO		5.0	2 months		NVD	NVD	Neg	
5824	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5825	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5826	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5827	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5828	02-Jul	Okanagan Lake	KO		4.3	2 months		NVD	NVD	Neg	
5829	02-Jul	Okanagan Lake	KO		5.2	2 months		NVD	NVD	Neg	
5830	02-Jul	Okanagan Lake	KO		4.8	2 months		NVD	NVD	Neg	
5831	02-Jul	Okanagan Lake	KO		4.7	2 months		NVD	NVD	Neg	
5832	02-Jul	Okanagan Lake	KO		3.0	2 months		NVD	NVD	Neg	
5833	02-Jul	Okanagan Lake	KO		4.8	2 months		NVD	NVD	Neg	
5834	02-Jul	Okanagan Lake	KO		4.3	2 months		NVD	NVD	Neg	
5835	02-Jul	Okanagan Lake	KO		4.8	2 months		NVD	NVD	Neg	
5836	02-Jul	Okanagan Lake	KO		4.3	2 months		NVD	NVD	Neg	
5837	02-Jul	Okanagan Lake	KO		4.6	2 months		NVD	NVD	Neg	
5838	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5839	02-Jul	Okanagan Lake	KO		4.6	2 months		NVD	NVD	Neg	
5840	02-Jul	Okanagan Lake	KO		4.2	2 months		NVD	NVD	Neg	
5841	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5842	02-Jul	Okanagan Lake	KO		4.3	2 months		NVD	NVD	Neg	
5843	02-Jul	Okanagan Lake	KO		4.0	2 months		NVD	NVD	Neg	
5844	02-Jul	Okanagan Lake	KO		4.3	2 months		NVD	NVD	Neg	
5845	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5846	02-Jul	Okanagan Lake	KO		4.2	2 months		NVD	NVD	Neg	
5847	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5848	02-Jul	Okanagan Lake	KO		4.2	2 months		NVD	NVD	Neg	
5849	02-Jul	Okanagan Lake	KO		4.8	2 months		NVD	NVD	Neg	
5850	02-Jul	Okanagan Lake	KO		4.3	2 months		NVD	NVD	Neg	
5851	02-Jul	Okanagan Lake	KO		5.5	2 months		NVD	NVD	Neg	
5852	02-Jul	Okanagan Lake	KO		4.2	2 months		NVD	NVD	Neg	
5853	02-Jul	Okanagan Lake	KO		3.2	2 months		NVD	NVD	Neg	
5854	02-Jul	Okanagan Lake	KO		4.6	2 months		NVD	NVD	Neg	
5855	02-Jul	Okanagan Lake	KO		4.8	2 months		NVD	NVD	Neg	
5856	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5857	02-Jul	Okanagan Lake	KO		4.7	2 months		NVD	NVD	Neg	
5858	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5859	02-Jul	Okanagan Lake	KO		3.6	2 months		NVD	NVD	Neg	
5860	02-Jul	Okanagan Lake	KO		4.6	2 months		NVD	NVD	Neg	
5861	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5862	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5863	02-Jul	Okanagan Lake	KO		5.2	2 months		NVD	NVD	Neg	
5864	02-Jul	Okanagan Lake	KO		4.0	2 months		NVD	NVD	Neg	
5865	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5866	02-Jul	Okanagan Lake	KO		2.9	2 months		NVD	NVD	Neg	
5867	02-Jul	Okanagan Lake	KO		4.1	2 months		NVD	NVD	Neg	
5868	02-Jul	Okanagan Lake	KO		4.2	2 months		NVD	NVD	Neg	
5869	02-Jul	Okanagan Lake	KO		4.2	2 months		NVD	NVD	Neg	
5870	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5871	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5872	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5873	02-Jul	Okanagan Lake	KO		4.2	2 months		NVD	NVD	Neg	
5874	02-Jul	Okanagan Lake	KO		4.3	2 months		NVD	NVD	Neg	
5875	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5876	02-Jul	Okanagan Lake	KO		4.0	2 months		NVD	NVD	Neg	
5877	02-Jul	Okanagan Lake	KO		4.1	2 months		NVD	NVD	Neg	
5878	02-Jul	Okanagan Lake	KO		4.3	2 months		NVD	NVD	Neg	
5879	02-Jul	Okanagan Lake	KO		3.3	2 months		NVD	NVD	Neg	
5880	02-Jul	Okanagan Lake	KO		5.5	2 months		NVD	NVD	Neg	
5881	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5882	02-Jul	Okanagan Lake	KO		4.9	2 months		NVD	NVD	Neg	
5883	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5884	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
5885	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5886	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5887	02-Jul	Okanagan Lake	KO		5.2	2 months		NVD	NVD	Neg	
5888	02-Jul	Okanagan Lake	KO		4.2	2 months		NVD	NVD	Neg	
5889	02-Jul	Okanagan Lake	KO		4.3	2 months		NVD	NVD	Neg	
5890	02-Jul	Okanagan Lake	KO		4.2	2 months		NVD	NVD	Neg	
5891	02-Jul	Okanagan Lake	KO		4.7	2 months		NVD	NVD	Neg	
5892	02-Jul	Okanagan Lake	KO		4.1	2 months		NVD	NVD	Neg	
5893	02-Jul	Okanagan Lake	KO		4.3	2 months		NVD	NVD	Neg	
5894	02-Jul	Okanagan Lake	KO		3.8	2 months		NVD	NVD	Neg	
5895	02-Jul	Okanagan Lake	KO		4.6	2 months		NVD	NVD	Neg	
5896	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5897	02-Jul	Okanagan Lake	KO		3.9	2 months		NVD	NVD	Neg	
5898	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5899	02-Jul	Okanagan Lake	KO		3.5	2 months		NVD	NVD	Neg	
5900	02-Jul	Okanagan Lake	KO		3.9	2 months		NVD	NVD	Neg	
5901	02-Jul	Okanagan Lake	KO		4.7	2 months		NVD	NVD	Neg	
5902	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5903	02-Jul	Okanagan Lake	KO		4.7	2 months		NVD	NVD	Neg	
5904	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5905	02-Jul	Okanagan Lake	KO		4.5	2 months		NVD	NVD	Neg	
5906	02-Jul	Okanagan Lake	KO		4.4	2 months		NVD	NVD	Neg	
5907	02-Jul	Okanagan Lake	KO		4.3	2 months		NVD	NVD	Neg	
5908	02-Jul	Okanagan Lake	KO		4.0	2 months		NVD	NVD	Neg	
5909	02-Jul	Okanagan Lake	KO		4.7	2 months		NVD	NVD	Neg	
5910	02-Jul	Okanagan Lake	KO		4.6	2 months		NVD	NVD	Neg	
5911	02-Jul	Okanagan Lake	KO		3.8	2 months		NVD	NVD	Neg	
5912	02-Jul	Okanagan Lake	KO		4.2	2 months		NVD	NVD	Neg	
5913	02-Jul	Okanagan Lake	KO		4.0	2 months		NVD	NVD	Neg	
5914	02-Jul	Okanagan Lake	KO		4.0	2 months		NVD	NVD	Neg	
5915	26-Aug	Okanagan Lake	WF		10.3		Juv	NVD	NVD	Neg	
5916	26-Aug	Okanagan Lake	WF		11.1		Juv	NVD	NVD	Neg	
5917	26-Aug	Okanagan Lake	WF		9.4		Juv	NVD	NVD	Neg	
5918	26-Aug	Okanagan Lake	RSC		6.9		M	NVD	NVD		
5919	26-Aug	Okanagan Lake	WF		10.4		Juv	NVD	NVD	Neg	
5920	26-Aug	Okanagan Lake	WF		10.2		Juv	NVD	NVD	Neg	
5921	26-Aug	Okanagan Lake	WF		9.4		Juv	NVD	NVD	Neg	
5922	26-Aug	Okanagan Lake	RSC		7.0		Juv	NVD	NVD		
5923	26-Aug	Okanagan Lake	RSC		6.1		Juv	NVD	NVD		
5924	26-Aug	Okanagan Lake	RSC		7.1		Imm M	NVD	NVD		
5925	26-Aug	Okanagan Lake	RSC		6.3		Imm	NVD	NVD		
5926	26-Aug	Okanagan Lake	RSC		4.7		Juv	NVD	NVD		
5927	26-Aug	Okanagan Lake	WF		9.6		Juv	NVD	NVD	Neg	
5928	26-Aug	Okanagan Lake	WF		10.0		Juv	NVD	NVD	Neg	
5929	26-Aug	Okanagan Lake	WF		10.9		Juv	NVD	NVD	Neg	
5930	26-Aug	Okanagan Lake	RSC		7.0		Imm	NVD	NVD		
5931	26-Aug	Okanagan Lake	RSC		7.6		M Juv	NVD	NVD		
5932	26-Aug	Okanagan Lake	RSC		7.1		M	NVD	NVD		
5933	26-Aug	Okanagan Lake	RSC		6.4		M	NVD	NVD		
5934	26-Aug	Okanagan Lake	RSC		5.1		Juv	NVD	NVD		
5935	26-Aug	Okanagan Lake	WF		18.9		Juv	NVD	NVD	Neg	Red marks near pelvic fins
5936	26-Aug	Okanagan Lake	WF		11.0		Juv	NVD	NVD	Neg	
5937	26-Aug	Okanagan Lake	WF		10.2		Juv	NVD	NVD	Neg	
5938	26-Aug	Okanagan Lake	WF		9.7		Juv	NVD	NVD	Neg	
5939	26-Aug	Okanagan Lake	WF		9.6		Juv	NVD	NVD	Neg	
5940	26-Aug	Okanagan Lake	YP		6.8		M	NVD	NVD		
5941	26-Aug	Okanagan Lake	RSC		6.3		Juv	NVD	NVD		
5942	26-Aug	Okanagan Lake	WF		19.2		Juv	NVD	NVD	Neg	
5943	26-Aug	Okanagan Lake	WF		10.5		M	NVD	NVD	Neg	
5944	26-Aug	Okanagan Lake	RSC		8.0		M	NVD	NVD		
5945	26-Aug	Okanagan Lake	RSC		5.9		M	NVD	NVD		
5946	26-Aug	Okanagan Lake	RSC		7.9		M	NVD	NVD		
5947	26-Aug	Okanagan Lake	RSC		5.5		Imm	NVD	NVD		
5948	26-Aug	Okanagan Lake	RSC		5.2		Imm	NVD	NVD		
5949	26-Aug	Okanagan Lake	RSC		4.7		Juv	NVD	NVD		
5950	26-Aug	Okanagan Lake	PCC		18.3		Juv	NVD	NVD		
5951	26-Aug	Okanagan Lake	NSC		6.6		Juv	NVD	NVD		
5952	26-Aug	Okanagan Lake	NSC		7.1		Juv	NVD	NVD		
5953	26-Aug	Okanagan Lake	NSC		8.2		Juv	NVD	NVD		
5954	26-Aug	Okanagan Lake	NSC		9.9		Juv	NVD	NVD		

Disease risk assessment sampling

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
5955	26-Aug	Okanagan Lake	NSC		7.4		Juv	NVD	NVD		
5956	26-Aug	Okanagan Lake	NSC		8.6		Juv	NVD	NVD		
5957	26-Aug	Okanagan Lake	NSC		11.4		Juv	NVD	NVD		
5958	26-Aug	Okanagan Lake	PCC		11.6		Juv	NVD	NVD		
5959	26-Aug	Okanagan Lake	NSC		7.7		Juv	NVD	NVD		
5960	26-Aug	Okanagan Lake	NSC		7.3		Juv	NVD	NVD		
5961	26-Aug	Okanagan Lake	NSC		12.5		Juv	NVD	NVD		
5962	26-Aug	Okanagan Lake	NSC		16.8		Juv	NVD	NVD		
5963	26-Aug	Okanagan Lake	NSC		18.8		Juv	NVD	NVD		
5964	26-Aug	Okanagan Lake	PCC		15.8		Juv	NVD	NVD		
5965	26-Aug	Okanagan Lake	NSC		6.6		Juv	NVD	NVD		
5966	26-Aug	Okanagan Lake	NSC		13.1		Juv	NVD	NVD		
5967	26-Aug	Okanagan Lake	NSC		13.0		Juv	NVD	NVD		
5968	26-Aug	Okanagan Lake	NSC		20.1		Juv	NVD	NVD		
5969	26-Aug	Okanagan Lake	NSC		7.7		Juv	NVD	NVD		
5970	26-Aug	Okanagan Lake	NSC		7.7		Juv	NVD	NVD		
5971	26-Aug	Okanagan Lake	NSC		7.8		Juv	NVD	NVD		
5972	26-Aug	Okanagan Lake	NSC		7.4		Juv	NVD	NVD		
5973	26-Aug	Okanagan Lake	NSC		7.2		Juv	NVD	NVD		
5974	26-Aug	Okanagan Lake	NSC		12.1		Juv	NVD	NVD		
5975	26-Aug	Okanagan Lake	PCC		8.9		Juv	NVD	NVD		
5976	26-Aug	Okanagan Lake	YP		14.8		M	NVD	NVD		
5977	26-Aug	Okanagan Lake	RSC		7.5		Juv	NVD	NVD		
5978	26-Aug	Okanagan Lake	CAS		6.5		Juv	NVD	NVD		
5979	26-Aug	Okanagan Lake	CAS		6.5		Juv	NVD	NVD		
5980	26-Aug	Okanagan Lake	NSC		14.0		Juv	NVD	NVD		
5981	26-Aug	Okanagan Lake	NSC		11.6		Juv	NVD	NVD		
5982	26-Aug	Okanagan Lake	PCC		9.2		Juv	NVD	NVD		
5983	26-Aug	Okanagan Lake	PCC		13.0		M	NVD	NVD		
5984	26-Aug	Okanagan Lake	PCC		11.9		Juv	NVD	NVD		
5985	26-Aug	Okanagan Lake	YP		17.0		M	NVD	NVD		
5986	26-Aug	Okanagan Lake	NSC		6.4		Juv	NVD	NVD		
5987	26-Aug	Okanagan Lake	NSC		7.3		Juv	NVD	NVD		
5988	26-Aug	Okanagan Lake	NSC		7.0		Juv	NVD	NVD		
5989	26-Aug	Okanagan Lake	CAS		7.0		Juv	NVD	NVD		
5990	26-Aug	Okanagan Lake	CAS		6.0		Juv	NVD	NVD		
5991	26-Aug	Okanagan Lake	CAS		7.0		Juv	NVD	NVD		
5992	26-Aug	Okanagan Lake	PCC		18.0		M	NVD	NVD		
5993	26-Aug	Okanagan Lake	YP		17.4		M	NVD	NVD		
5994	26-Aug	Okanagan Lake	NSC		40.0		Imm	NVD	NVD		
6000	28-Aug	Osoyoos Lake	BGB		10.1		Imm	NVD	NVD		
6001	28-Aug	Osoyoos Lake	BGB		10.4		Imm	NVD	NVD		
6002	28-Aug	Osoyoos Lake	BGB		12.2		M	NVD	NVD		
6003	28-Aug	Osoyoos Lake	BGB		10.6		M	NVD	NVD		
6004	28-Aug	Osoyoos Lake	PMB		10.4		Mat F	NVD	NVD		
6005	28-Aug	Osoyoos Lake	PMB		9.9		Mat F	NVD	NVD		
6006	28-Aug	Osoyoos Lake	BCB		8.7		Imm	NVD	NVD		
6007	28-Aug	Osoyoos Lake	BCB		8.3		Imm	NVD	NVD		
6008	28-Aug	Osoyoos Lake	BGB		8.7		M	NVD	NVD		
6009	28-Aug	Osoyoos Lake	BGB		7.7		F	NVD	NVD		
6010	28-Aug	Osoyoos Lake	BCB		7.9		Imm	NVD	NVD		
6011	28-Aug	Osoyoos Lake	BGB		8.0		Imm	NVD	NVD		
6012	28-Aug	Osoyoos Lake	BGB		8.9		Imm F	NVD	NVD		
6013	28-Aug	Osoyoos Lake	BGB		9.8		Imm M	NVD	NVD		
6014	28-Aug	Osoyoos Lake	BCB		8.1		Imm	NVD	NVD		
6015	28-Aug	Osoyoos Lake	BCB		7.1		Imm	NVD	NVD		
6016	28-Aug	Osoyoos Lake	BGB		9.0		Imm F	NVD	NVD		
6017	28-Aug	Osoyoos Lake	BGB		8.9		M	NVD	NVD		
6018	28-Aug	Osoyoos Lake	BGB		9.4		Imm	NVD	NVD		
6019	28-Aug	Osoyoos Lake	BCB		6.1		Imm	NVD	NVD		
6020	28-Aug	Osoyoos Lake	BCB		8.2		Imm	NVD	NVD		
6021	28-Aug	Osoyoos Lake	BCB		8.6		Imm	NVD	NVD		
6022	28-Aug	Osoyoos Lake	BCB		5.6		Juv	NVD	NVD		
6023	28-Aug	Osoyoos Lake	BCB		6.8		Imm	NVD	NVD		
6024	28-Aug	Osoyoos Lake	BCB		5.3		Imm	NVD	NVD		
6025	28-Aug	Osoyoos Lake	BCB		5.9		Imm	NVD	NVD		
6026	28-Aug	Osoyoos Lake	BCB		5.4		Imm	NVD	NVD		
6027	28-Aug	Osoyoos Lake	BCB		5.7		Juv	NVD	NVD		
6028	28-Aug	Osoyoos Lake	BCB		5.5		Imm	NVD	NVD		
6029	28-Aug	Osoyoos Lake	BCB		6.2		Juv	NVD	NVD		

Disease risk assessment sampling

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
6030	28-Aug	Osoyoos Lake	BGB		9.4		M	NVD	NVD		
6031	28-Aug	Osoyoos Lake	BCB		8.1		Imm	NVD	NVD		
6032	28-Aug	Osoyoos Lake	BCB		7.2		Imm	NVD	NVD		
6033	28-Aug	Osoyoos Lake	BCB		7.0		Imm	NVD	NVD		
6034	28-Aug	Osoyoos Lake	BCB		6.7		Imm	NVD	NVD		
6035	28-Aug	Osoyoos Lake	BCB		5.0		Imm	NVD	NVD		
6036	28-Aug	Osoyoos Lake	BCB		5.0		Imm	NVD	NVD		
6037	28-Aug	Osoyoos Lake	BCB		4.6		Imm	NVD	NVD		
6038	28-Aug	Osoyoos Lake	BGB		3.3		Imm	NVD	NVD		
6039	28-Aug	Osoyoos Lake	PMB		3.9		Juv	NVD	NVD		
6040	28-Aug	Osoyoos Lake	PMB		3.7		Juv	NVD	NVD		
6041	28-Aug	Osoyoos Lake	SMB		7.1		Imm	NVD	NVD		
6042	28-Aug	Osoyoos Lake	SMB		8.0		Imm	NVD	NVD		
6043	28-Aug	Osoyoos Lake	SMB		7.0		Imm	NVD	NVD		
6044	28-Aug	Osoyoos Lake	SMB		10.0		Imm	NVD	NVD		
6045	28-Aug	Osoyoos Lake	SMB		16.9		Imm	NVD	NVD		
6046	28-Aug	Osoyoos Lake	SMB		17.4		M	NVD	NVD		
6047	28-Aug	Osoyoos Lake	SMB		22.1		M	NVD	NVD		
6048	28-Aug	Osoyoos Lake	SMB		26.1		Imm	NVD	NVD		
6049	28-Aug	Osoyoos Lake	LMB		12.6		M	NVD	NVD		
6050	28-Aug	Osoyoos Lake	LMB		37.5		Imm	NVD	NVD		
6051	28-Aug	Osoyoos Lake	LMB		10.5		Imm	NVD	NVD		
6052	28-Aug	Osoyoos Lake	LMB		10.9		Imm	NVD	NVD		
6053	28-Aug	Osoyoos Lake	LMB		9.6		Imm	NVD	NVD		
6054	28-Aug	Osoyoos Lake	LMB		8.3		Imm	NVD	NVD		
6055	28-Aug	Osoyoos Lake	LMB		7.6		Imm	NVD	NVD		
6056	28-Aug	Osoyoos Lake	LMB		7.7		Imm	NVD	NVD		
6057	28-Aug	Osoyoos Lake	LMB		5.6		Imm	NVD	NVD		
6058	28-Aug	Osoyoos Lake	LMB		7.3		Imm	NVD	NVD		
6059	28-Aug	Osoyoos Lake	LMB		7.6		Imm	NVD	NVD		
6060	28-Aug	Osoyoos Lake	LMB		6.3		Imm	NVD	NVD		
6061	28-Aug	Osoyoos Lake	LMB		8.0		Imm	NVD	NVD		
6062	28-Aug	Osoyoos Lake	LMB		6.8		Imm	NVD	NVD		
6063	28-Aug	Osoyoos Lake	LMB		5.5		Imm	NVD	NVD		
6064	28-Aug	Osoyoos Lake	LMB		6.0		Imm	NVD	NVD		
6065	28-Aug	Osoyoos Lake	CAS		7.3		Imm	NVD	NVD		
6066	28-Aug	Osoyoos Lake	CAS		7.8		Imm	NVD	NVD		
6067	28-Aug	Osoyoos Lake	CAS		8.7		Imm	NVD	NVD		
6068	28-Aug	Osoyoos Lake	CAS		6.9		Imm	NVD	NVD		
6069	28-Aug	Osoyoos Lake	CAS		7.8		Imm	NVD	NVD		
6070	28-Aug	Osoyoos Lake	CAS		8.2		Imm	NVD	NVD		
6071	28-Aug	Osoyoos Lake	CAS		7.4		Imm	NVD	NVD		
6072	28-Aug	Osoyoos Lake	NSC		24.8		F	NVD	NVD		
6073	28-Aug	Osoyoos Lake	NSC		21.2		M	NVD	NVD		
6074	28-Aug	Osoyoos Lake	NSC		19.6		M	NVD	NVD		
6075	04-Sep	Osoyoos Lake	CAS		8.3		Juv	NVD	NVD		
6076	04-Sep	Osoyoos Lake	CAS		7.5		Juv	NVD	NVD		
6077	04-Sep	Osoyoos Lake	CAS		7.4		Juv	NVD	NVD		
6078	04-Sep	Osoyoos Lake	CAS		7.3		Juv	NVD	NVD		
6079	04-Sep	Osoyoos Lake	CAS		9.9		Juv	NVD	NVD		
6080	04-Sep	Osoyoos Lake	CAS		8.8		Juv	NVD	NVD		
6081	04-Sep	Osoyoos Lake	PMB		10.2		F	NVD	NVD		
6082	04-Sep	Osoyoos Lake	PMB		10.1		F	NVD	NVD		
6083	04-Sep	Osoyoos Lake	BGB		4.7		Imm	NVD	NVD		
6084	04-Sep	Osoyoos Lake	BGB		10.9		F	NVD	NVD		
6085	04-Sep	Osoyoos Lake	BGB		10.6		F	NVD	NVD		
6086	04-Sep	Osoyoos Lake	BGB		6.6		Imm	NVD	NVD		
6087	04-Sep	Osoyoos Lake	BGB		8.9		M	NVD	NVD		
6088	04-Sep	Osoyoos Lake	BGB		4.2		Imm	NVD	NVD		
6089	04-Sep	Osoyoos Lake	BGB		7.9		Imm	NVD	NVD		
6090	04-Sep	Osoyoos Lake	BGB		8.0		Imm	NVD	NVD		
6091	04-Sep	Osoyoos Lake	BGB		9.5		Imm	NVD	NVD		
6092	04-Sep	Osoyoos Lake	BGB		7.8		Imm	NVD	NVD		
6093	04-Sep	Osoyoos Lake	BGB		8.1		Imm	NVD	NVD		
6094	04-Sep	Osoyoos Lake	BGB		9.5		Imm	NVD	NVD		
6095	04-Sep	Osoyoos Lake	BGB		8.0		Imm	NVD	NVD		
6096	04-Sep	Osoyoos Lake	BGB		6.7		Imm	NVD	NVD		
6097	04-Sep	Osoyoos Lake	BGB		4.8		Imm	NVD	NVD		
6098	04-Sep	Osoyoos Lake	BCB		9.7		Juv	NVD	NVD		
6099	04-Sep	Osoyoos Lake	BCB		9.1		Juv	NVD	NVD		

Disease risk assessment sampling

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
6100	04-Sep	Osoyoos Lake	BCB		9.0		Juv	NVD	NVD		
6101	04-Sep	Osoyoos Lake	BCB		9.0		Juv	NVD	NVD		
6102	04-Sep	Osoyoos Lake	BCB		8.2		Juv	NVD	NVD		
6103	04-Sep	Osoyoos Lake	BCB		8.6		Juv	NVD	NVD		
6104	04-Sep	Osoyoos Lake	BCB		9.0		Juv	NVD	NVD		
6105	04-Sep	Osoyoos Lake	BCB		8.2		Juv	NVD	NVD		
6106	04-Sep	Osoyoos Lake	BCB		8.5		Juv	NVD	NVD		
6107	04-Sep	Osoyoos Lake	BCB		6.7		Juv	NVD	NVD		
6108	04-Sep	Osoyoos Lake	BCB		8.8		Juv	NVD	NVD		
6109	04-Sep	Osoyoos Lake	BCB		6.5		Juv	NVD	NVD		
6110	04-Sep	Osoyoos Lake	BCB		7.8		Juv	NVD	NVD		
6111	04-Sep	Osoyoos Lake	BCB		9.4		Juv	NVD	NVD		
6112	04-Sep	Osoyoos Lake	BCB		7.4		Juv	NVD	NVD		
6113	04-Sep	Osoyoos Lake	BCB		8.8		Juv	NVD	NVD		
6114	04-Sep	Osoyoos Lake	BCB		6.8		Juv	NVD	NVD		
6115	04-Sep	Osoyoos Lake	LMB		11.0		Imm	NVD	NVD		
6116	04-Sep	Osoyoos Lake	LMB		10.0		Imm	NVD	NVD		
6117	04-Sep	Osoyoos Lake	LMB		7.5		Imm	NVD	NVD		
6118	04-Sep	Osoyoos Lake	LMB		10.0		Imm	NVD	NVD		
6119	04-Sep	Osoyoos Lake	LMB		7.5		Imm	NVD	NVD		
6120	04-Sep	Osoyoos Lake	LMB		10.6		Imm	NVD	NVD		
6121	04-Sep	Osoyoos Lake	LMB		6.8		Imm	NVD	NVD		
6122	04-Sep	Osoyoos Lake	LMB		6.4		Imm	NVD	NVD		
6123	04-Sep	Osoyoos Lake	LMB		7.5		Imm	NVD	NVD		
6124	04-Sep	Osoyoos Lake	LMB		11.6		Imm	NVD	NVD		
6125	04-Sep	Osoyoos Lake	LMB		6.9		Imm	NVD	NVD		
6126	04-Sep	Osoyoos Lake	LMB		6.6		Imm	NVD	NVD		
6127	04-Sep	Osoyoos Lake	LMB		7.3		Imm	NVD	NVD		
6128	04-Sep	Osoyoos Lake	LMB		7.0		Imm	NVD	NVD		
6129	04-Sep	Osoyoos Lake	LMB		7.4		Imm	NVD	NVD		
6130	04-Sep	Osoyoos Lake	LMB		6.4		Imm	NVD	NVD		
6131	04-Sep	Osoyoos Lake	LMB		7.7		Imm	NVD	NVD		
6132	04-Sep	Osoyoos Lake	LMB		7.0		Imm	NVD	NVD		
6133	04-Sep	Osoyoos Lake	SMB		6.9		Imm	NVD	NVD		
6134	04-Sep	Osoyoos Lake	SMB		7.4		Imm	NVD	NVD		
6135	04-Sep	Osoyoos Lake	SMB		6.9		Imm	NVD	NVD		
6136	04-Sep	Osoyoos Lake	SMB		7.1		Imm	NVD	NVD		
6137	04-Sep	Osoyoos Lake	SMB		7.1		Imm	NVD	NVD		
6138	04-Sep	Osoyoos Lake	SMB		7.4		Imm	NVD	NVD		
6139	04-Sep	Osoyoos Lake	SMB		7.9		Imm	NVD	NVD		
6140	04-Sep	Osoyoos Lake	SMB		9.1		Imm	NVD	NVD		
6141	04-Sep	Osoyoos Lake	SMB		7.8		Imm	NVD	NVD		
6142	04-Sep	Osoyoos Lake	SMB		7.5		Imm	NVD	NVD		
6143	04-Sep	Osoyoos Lake	SMB		7.0		Imm	NVD	NVD		
6144	04-Sep	Osoyoos Lake	SMB		6.7		Imm	NVD	NVD		
6145	04-Sep	Osoyoos Lake	SMB		8.4		Imm	NVD	NVD		
6146	04-Sep	Osoyoos Lake	SMB		8.6		Imm	NVD	NVD		
6147	04-Sep	Osoyoos Lake	SMB		8.4		Imm	NVD	NVD		
6148	04-Sep	Osoyoos Lake	SMB		6.5		Imm	NVD	NVD		
6149	04-Sep	Osoyoos Lake	SMB		8.0		Imm	NVD	NVD		
6150	18-Sep	Deep Creek	KO	600	37.5	sp	F	NVD	NVD	Neg	
6151	18-Sep	Deep Creek	KO	850	42.0	sp	M	NVD	NVD	Neg	
6152	18-Sep	Deep Creek	KO	600	39.0	sp	F	NVD	NVD	Neg	missing number
6153	18-Sep	Deep Creek	KO	450	34.5	sp	F	NVD	NVD	Neg	
6154	18-Sep	Deep Creek	KO	900	42.5	sp	M	NVD	NVD	Neg	
6155	18-Sep	Deep Creek	KO	300	28.2	sp	F	NVD	NVD	Neg	
6156	18-Sep	Deep Creek	KO	800	39.0	sp	M	NVD	NVD	Neg	
6157	18-Sep	Deep Creek	KO	400	30.5	sp	M	NVD	NVD	Neg	
6158	18-Sep	Deep Creek	KO	1900	54.0	sp	M	NVD	NVD	Neg	
6159	18-Sep	Deep Creek	KO	850	41.8	sp	M	NVD	NVD	Neg	numbered twice
6160	18-Sep	Deep Creek	KO	650	38.5	sp	M	NVD	NVD	Neg	
6161	18-Sep	Deep Creek	KO	800	41.2	sp	M	NVD	NVD	Neg	
6162	18-Sep	Deep Creek	KO	1400	48.8	sp	M	NVD	NVD	Neg	
6163	18-Sep	Deep Creek	KO	550	36.3	sp	F	NVD	NVD	Neg	
6164	18-Sep	Deep Creek	KO	600	39.3	sp	F	NVD	NVD	Neg	
6165	18-Sep	Deep Creek	KO	750	40.2	sp	F	NVD	NVD	Neg	
6166	18-Sep	Deep Creek	KO	800	46.0	sp	F	NVD	NVD	Neg	
6167	18-Sep	Deep Creek	KO	950	43.3	sp	M	NVD	NVD	Neg	
6168	18-Sep	Deep Creek	KO	700	38.3	sp	F	NVD	NVD	Neg	
6169	18-Sep	Deep Creek	KO	500	34.0	sp	M	NVD	NVD	Neg	

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
6170	18-Sep	Deep Creek	KO	600	35.0	sp	M	NVD	NVD	Neg	
6171	18-Sep	Deep Creek	KO	450	35.0	sp	F	NVD	NVD	Neg	
6172	18-Sep	Deep Creek	KO	950	46.0	sp	F	NVD	NVD	Neg	
6173	18-Sep	Deep Creek	KO	1100	46.0	sp	M	NVD	NVD	Neg	
6174	18-Sep	Deep Creek	KO	1100	45.9	sp	M	NVD	NVD	Neg	missing number
6175	18-Sep	Deep Creek	KO	800	39.8	sp	M	NVD	NVD	Neg	numbered twice
6176	18-Sep	Deep Creek	KO	900	41.0	sp	F	NVD	NVD	Neg	
6177	18-Sep	Deep Creek	KO	650	35.5	sp	M	NVD	NVD	Neg	
6178	18-Sep	Deep Creek	KO	850	42.5	sp	F	NVD	NVD	Neg	
6179	18-Sep	Deep Creek	KO	1600	51.8	sp	M	NVD	NVD	Neg	
6180	18-Sep	Deep Creek	KO	400	31.0	sp	F	NVD	NVD	Neg	
6181	18-Sep	Deep Creek	KO	700	37.5	sp	F	NVD	NVD	Neg	
6182	18-Sep	Deep Creek	KO	700	39.5	sp	M	NVD	NVD	Neg	
6183	18-Sep	Deep Creek	KO	450	32.5	sp	F	Pos	NVD	Neg	
6184	18-Sep	Deep Creek	KO	700	39.5	sp	F	Pos	NVD	Neg	
6185	18-Sep	Deep Creek	KO	500	34.0	sp	F	NVD	NVD	Neg	
6186	18-Sep	Deep Creek	KO	600	39.5	sp	F	Pos	NVD	Neg	
6187	18-Sep	Deep Creek	KO	500	34.0	sp	F	NVD	NVD	Neg	
6188	18-Sep	Deep Creek	KO	1600	50.0	sp	M	NVD	NVD	Neg	
6189	18-Sep	Deep Creek	KO	900	42.0	sp	M	NVD	NVD	Neg	
6190	18-Sep	Deep Creek	KO	1400	51.0	sp	F	NVD	NVD	Neg	
6191	18-Sep	Deep Creek	KO	600	37.5	sp	F	NVD	NVD	Neg	
6192	18-Sep	Deep Creek	KO	700	40.5	sp	F	NVD	NVD	Neg	
6193	18-Sep	Deep Creek	KO	1150	46.0	sp	F	NVD	NVD	Neg	
6194	18-Sep	Deep Creek	KO	650	37.5	sp	M	NVD	NVD	Neg	
6195	18-Sep	Deep Creek	KO	700	41.0	sp	F	NVD	NVD	Neg	
6196	18-Sep	Deep Creek	KO	1600	49.5	sp	M	NVD	NVD	Neg	
6197	18-Sep	Deep Creek	KO	1000	44.0	sp	F	NVD	NVD	Neg	
6198	18-Sep	Deep Creek	KO	600	36.0	sp	M	NVD	NVD	Neg	
6199	18-Sep	Deep Creek	KO	600	38.5	sp	F	NVD	NVD	Neg	
6200	18-Sep	Deep Creek	KO	350	29.5	sp	M	NVD	NVD	Neg	
6201	18-Sep	Deep Creek	KO	350	25.5	sp	M	NVD	NVD	Neg	lump on side
6202	18-Sep	Deep Creek	KO	1150	44.5	sp	M	NVD	NVD	Neg	
6203	18-Sep	Deep Creek	KO	600	37.5	sp	F	NVD	NVD	Neg	
6204	18-Sep	Deep Creek	KO	1350	39.5	sp	M	NVD	NVD	Neg	
6205	18-Sep	Deep Creek	KO	700	37.8	sp	M	NVD	NVD	Neg	
6206	18-Sep	Deep Creek	KO	500	34.0	sp	F	NVD	NVD	Neg	
6207	18-Sep	Deep Creek	KO	700	40.5	sp	F	NVD	NVD	Neg	
6208	18-Sep	Deep Creek	KO	1500	49.5	sp	M	NVD	NVD	Neg	
6209	18-Sep	Deep Creek	KO	1400	50.5	sp	M	NVD	NVD	Neg	
6210	18-Sep	Deep Creek	KO	1200	48.0	sp	M	NVD	NVD	Neg	
6211	18-Sep	Deep Creek	KO	650	37.5	sp	M	NVD	NVD	Neg	
6212	18-Sep	Deep Creek	KO	550	35.5	sp	F	NVD	NVD	Neg	
6213	18-Sep	Deep Creek	KO	1150	44.0	sp	M	NVD	NVD	Neg	
6214	18-Sep	Deep Creek	KO	600	37.0	sp	F	NVD	NVD	Neg	
6215	18-Sep	Deep Creek	KO	1300	48.0	sp	F	NVD	NVD	Neg	
6216	18-Sep	Deep Creek	KO	500	35.5	sp	F	NVD	NVD	Neg	
6217	18-Sep	Deep Creek	KO	550	36.5	sp	F	NVD	NVD	Neg	
6218	18-Sep	Deep Creek	KO	850	43.5	sp	F	NVD	NVD	Neg	
6219	18-Sep	Deep Creek	KO	850	41.5	sp	F	NVD	NVD	Neg	
6220	18-Sep	Deep Creek	KO	900	39.4	sp	M	NVD	NVD	Neg	
6221	18-Sep	Deep Creek	KO	600	38.0	sp	F	NVD	NVD	Neg	
6222	18-Sep	Deep Creek	KO	1900	56.0	sp	M	NVD	NVD	Neg	
6223	18-Sep	Deep Creek	KO	500	33.4	sp	F	NVD	NVD	Neg	
6224	18-Sep	Deep Creek	KO	500	33.2	sp	M	NVD	NVD	Neg	
6225	18-Sep	Deep Creek	KO	800	40.5	sp	F	NVD	NVD	Neg	
6226	23-Sep	Mission Creek	KO	295	31.5	sp	F	NVD	NVD	Neg	
6227	23-Sep	Mission Creek	KO	565	36.2	sp	M	NVD	NVD	Neg	
6228	23-Sep	Mission Creek	KO	825	41.8	sp	M	NVD	NVD	Neg	
6229	23-Sep	Mission Creek	KO	195	27.2	sp	M	NVD	NVD	Neg	
6230	23-Sep	Mission Creek	KO	160	26.5	sp	F	NVD	NVD	Neg	
6231	23-Sep	Mission Creek	KO	170	26.5	sp	F	NVD	NVD	Neg	
6232	23-Sep	Mission Creek	KO	170	26.8	sp	F	NVD	NVD	Neg	
6233	23-Sep	Mission Creek	KO	200	28.1	sp	M	NVD	NVD	Neg	
6234	23-Sep	Mission Creek	KO	255	31.0	sp	M	NVD	NVD	Neg	
6235	23-Sep	Mission Creek	KO	205	29.2	sp	F	NVD	NVD	Neg	
6236	23-Sep	Mission Creek	KO	115	24.0	sp	F	NVD	NVD	Neg	
6237	23-Sep	Mission Creek	KO	190	28.3	sp	M	NVD	NVD	Neg	
6238	23-Sep	Mission Creek	KO	200	28.0	sp	F	NVD	NVD	Neg	
6239	23-Sep	Mission Creek	KO	200	28.0	sp	M	NVD	NVD	Neg	

Disease risk assessment sampling

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
6240	23-Sep	Mission Creek	KO	140	25.4	sp	F	NVD	NVD	Neg	
6241	23-Sep	Mission Creek	KO	205	28.0	sp	M	NVD	NVD	Neg	
6242	23-Sep	Mission Creek	KO	130	24.0	sp	M	NVD	NVD	Neg	
6243	23-Sep	Mission Creek	KO	120	23.5	sp	F	NVD	NVD	Neg	
6244	23-Sep	Mission Creek	KO	185	26.0	sp	M	NVD	NVD	Neg	
6245	23-Sep	Mission Creek	KO	225	28.5	sp	M	NVD	NVD	Neg	
6246	23-Sep	Mission Creek	KO	180	27.5	sp	M	NVD	NVD	Neg	
6247	23-Sep	Mission Creek	KO	155	26.5	sp	M	NVD	NVD	Neg	
6248	23-Sep	Mission Creek	KO	165	25.5	sp	M	NVD	NVD	Neg	
6249	23-Sep	Mission Creek	KO	190	29.0	sp	M	NVD	NVD	Neg	
6250	23-Sep	Mission Creek	KO	190	27.5	sp	M	Pos	NVD	Neg	
6251	23-Sep	Mission Creek	KO	185	28.0	sp	M	Pos	NVD	Neg	
6252	23-Sep	Mission Creek	KO	145	25.0	sp	M	Pos	NVD	Neg	
6253	23-Sep	Mission Creek	KO	155	26.0	sp	M	NVD	NVD	Neg	
6254	23-Sep	Mission Creek	KO	220	29.0	sp	M	NVD	NVD	Neg	
6255	23-Sep	Mission Creek	KO	170	27.0	sp	F	NVD	NVD	Neg	
6256	23-Sep	Mission Creek	KO	220	28.5	sp	M	NVD	NVD	Neg	
6257	23-Sep	Mission Creek	KO	215	28.0	sp	M	Pos	NVD	Neg	
6258	23-Sep	Mission Creek	KO	190	27.0	sp	M	NVD	NVD	Neg	
6259	23-Sep	Mission Creek	KO	200	29.0	sp	M	Pos	NVD	Neg	
6260	23-Sep	Mission Creek	KO	190	28.0	sp	M	Pos	NVD	Neg	
6261	23-Sep	Mission Creek	KO	1015	45.5	sp	M	Pos	NVD	Neg	
6262	23-Sep	Mission Creek	KO	1090	47.5	sp	M	Pos	NVD	Neg	
6263	23-Sep	Mission Creek	KO	1235	49.5	sp	M	Pos	NVD	Neg	
6264	23-Sep	Mission Creek	KO	565	40.5	sp	F	NVD	NVD	Neg	duplicate?
6265	23-Sep	Mission Creek	KO	765	43.5	sp	F	Pos	NVD	Neg	
6266	23-Sep	Mission Creek	KO	670	40.5	sp	F	Pos	NVD	Neg	
6267	23-Sep	Mission Creek	KO	200	27.5	sp	M	Pos	NVD	Neg	hole on belly
6268	23-Sep	Mission Creek	KO	620	39.5	sp	F	Pos	NVD	Neg	
6269	23-Sep	Mission Creek	KO	670	40.0	sp	M	Pos	NVD	Neg	
6270	23-Sep	Mission Creek	KO	205	28.5	sp	M	Pos	NVD	Neg	
6271	23-Sep	Mission Creek	KO	710	41.5	sp	F	Pos	NVD	Neg	
6272	23-Sep	Mission Creek	KO	375	33.0	sp	F	Pos	NVD	Neg	
6273	23-Sep	Mission Creek	KO	195	28.0	sp	F	Pos	NVD	Neg	
6274	23-Sep	Mission Creek	KO	190	26.5	sp	F	Pos	NVD	Neg	
6275	23-Sep	Mission Creek	KO	215	28.5	sp	M	Pos	NVD	Neg	
6276	23-Sep	Mission Creek	KO	155	26.2	sp	F	Pos	NVD	Neg	
6277	23-Sep	Mission Creek	KO	210	28.0	sp	F	Pos	NVD	Neg	
6278	23-Sep	Mission Creek	KO	590	41.5	sp	F	Pos	NVD	Neg	
6279	23-Sep	Mission Creek	KO	330	33.0	sp	F	Pos	NVD	Neg	
6280	23-Sep	Mission Creek	KO	270	31.0	sp	F	Pos	NVD	Neg	
6281	23-Sep	Mission Creek	KO	105	23.2	sp	F	Pos	NVD	Neg	
6282	23-Sep	Mission Creek	KO	160	26.8	sp	F	Pos	NVD	Neg	
6283	23-Sep	Mission Creek	KO	205	27.5	sp	F	Pos	NVD	Neg	
6284	23-Sep	Mission Creek	KO	1095	45.8	sp	F	Pos	NVD	Neg	
6285	23-Sep	Mission Creek	KO	330	31.8	sp	M	Pos	NVD	Neg	
6286	23-Sep	Mission Creek	KO	440	35.4	sp	F	Pos	NVD	Neg	
6287	23-Sep	Mission Creek	KO	215	29.5	sp	M	Pos	NVD	Neg	
6288	23-Sep	Mission Creek	KO	165	26.5	sp	M	Pos	NVD	Neg	
6289	23-Sep	Mission Creek	KO	470	36.5	sp	M	Pos	NVD	Neg	
6290	23-Sep	Mission Creek	KO	210	28.0	sp	M	Pos	NVD	Neg	
6291	23-Sep	Mission Creek	KO	290	30.0	sp	M	Pos	NVD	Neg	
6292	23-Sep	Mission Creek	KO	915	45.5	sp	F	Pos	NVD	Neg	
6293	23-Sep	Mission Creek	KO	1435	50.8	sp	M	NVD	NVD	Neg	
6294	23-Sep	Mission Creek	KO	370	31.0	sp	M	Pos	NVD	Neg	
6295	23-Sep	Mission Creek	KO	390	36.0	sp	F	Pos	NVD	Neg	
6296	23-Sep	Mission Creek	KO	210	27.4	sp	M	NVD	NVD	Neg	
6297	23-Sep	Mission Creek	KO	290	29.5	sp	M	Pos	NVD	Neg	
6298	23-Sep	Mission Creek	KO	340	33.5	sp	F	NVD	NVD	Neg	
6299	23-Sep	Mission Creek	KO	2900	62.0	sp	M	Pos	NVD	Neg	
6300	23-Sep	Mission Creek	KO	325	33.0	sp	M	Pos	NVD	Neg	
6301	28-Oct	Okanagan Lake	WF		13.2		Juv	NVD	NVD	Neg	
6302	28-Oct	Okanagan Lake	WF		12.0		Juv	NVD	NVD	Neg	
6303	28-Oct	Okanagan Lake	WF		11.5		Juv	NVD	NVD	Neg	
6304	28-Oct	Okanagan Lake	WF		12.5		Juv	NVD	NVD	Neg	
6305	28-Oct	Okanagan Lake	WF		12.1		Juv	NVD	NVD	Neg	
6306	28-Oct	Okanagan Lake	WF		14.0		Juv	NVD	NVD	Neg	
6307	28-Oct	Okanagan Lake	WF		22.4		Imm M	NVD	NVD	Neg	
6308	28-Oct	Okanagan Lake	WF		21.5		M	NVD	NVD	Neg	
6309	28-Oct	Okanagan Lake	WF		21.2		M	NVD	NVD	Neg	

Disease risk assessment sampling

Table 3. Data on pathogens in kokanee, whitefish, and non-salmonids collected from above and below McIntyre Dam in Year 2002

Fish Number	Date 2002	Lake	Species	Weight (g)	Length (cm)	Age	Sex	IHNV Positive Fish	IPNV Positive Fish	<i>C. shasta</i> Positive Fish	Comments
6310	28-Oct	Okanagan Lake	WF		19.8		Mat M	NVD	NVD	Neg	
6311	28-Oct	Okanagan Lake	WF		13.5		Juv	NVD	NVD	Neg	
6312	28-Oct	Okanagan Lake	WF		23.6		Juv	NVD	NVD	Neg	
6313	28-Oct	Okanagan Lake	WF		24.0		F	NVD	NVD	Neg	
6314	28-Oct	Okanagan Lake	WF		24.1		M	NVD	NVD	Neg	
6315	29-Oct	Skaha Lake	WF		30.5		Mat M	NVD	NVD	Neg	
6316	29-Oct	Skaha Lake	WF		32.5		Mat F	NVD	NVD	Neg	
6317	29-Oct	Skaha Lake	KO		21.5	Spawner		NVD	NVD	Neg	
6318	29-Oct	Skaha Lake	WF		29.0		Mat M	NVD	NVD	Neg	
6319	29-Oct	Skaha Lake	WF		26.0		Mat M	NVD	NVD	Neg	
6320	29-Oct	Skaha Lake	KO		22.5	Spawner	Mat F	NVD	NVD	Neg	
6321	29-Oct	Skaha Lake	KO		24.0	Spawner	Mat F	NVD	NVD	Neg	
6322	29-Oct	Skaha Lake	WF		30.5		Mat M	NVD	NVD	Neg	
6323	29-Oct	Skaha Lake	WF		27.0		Mat F	NVD	NVD	Neg	
6324	29-Oct	Skaha Lake	KO		24.5	Spawner	Mat F	NVD	NVD	Neg	
6325	29-Oct	Skaha Lake	WF		31.0		Mat F	NVD	NVD	Neg	
6326	29-Oct	Skaha Lake	WF		22.0		Imm F	NVD	NVD	Neg	
6327	29-Oct	Skaha Lake	WF		32.0		Mat F	NVD	NVD	Neg	
6328	29-Oct	Skaha Lake	KO		23.5	Spawner	Mat M	NVD	NVD	Neg	
6329	29-Oct	Skaha Lake	WF		20.5		Imm M	NVD	NVD	Neg	
6330	29-Oct	Skaha Lake	KO		25.5	Spawner	Mat F	NVD	NVD	Neg	
6331	29-Oct	Skaha Lake	WF		25.0		Imm F	NVD	NVD	Neg	
6332	29-Oct	Skaha Lake	WF		25.0		Mat F	NVD	NVD	Neg	
6333	29-Oct	Skaha Lake	KO		24.5	Spawner	Mat F	NVD	NVD	Neg	
6334	29-Oct	Skaha Lake	KO		26.0	Spawner	Mat F	NVD	NVD	Neg	
6335	29-Oct	Skaha Lake	KO		24.0	Spawner	Mat M	NVD	NVD	Neg	
6336	29-Oct	Skaha Lake	KO		22.5	Spawner	Mat F	NVD	NVD	Neg	
6337	29-Oct	Skaha Lake	WF		22.0		F	NVD	NVD	Neg	
6338	29-Oct	Skaha Lake	WF		18.5		Imm	NVD	NVD	Neg	
6339	29-Oct	Skaha Lake	WF		25.5		Mat M	NVD	NVD	Neg	
6340	29-Oct	Skaha Lake	WF		20.5		Imm	NVD	NVD	Neg	
6341	29-Oct	Skaha Lake	WF		20.5		Imm	NVD	NVD	Neg	

APPENDIX E

**Findings from Year 2002 pathogen
survey and summary data tables for
years 2000, 2001, and 2002**

Table 1. Pathogen surveys 2002 – salmonids and non-salmonids below dam*

Below McIntyre Dam

	No. Collected	IHNV	IPNV	MC	CS
<u>Salmonids</u>					
Sockeye (juveniles incl. 40 eggs)	600	0/600	0/600	NT	NT
Kokanee (spawners)	8	0/8	0/8	0/8	0/8
Sockeye (spawners)	180	16/180	0/180	0/180	0/180
Whitefish (various ages)	77	0/77	0/77	NT	0/77
Total salmonids	865				
<u>Non-salmonids</u>					
Ten species/groups	349	0/349	0/349	NT	NT
Total non-salmonids	349				

*IHNV = infectious haematopoietic necrosis virus; IPNV = infectious pancreatic necrosis virus; MC = *Myxobolus cerebralis*; CS = *Ceratomyxa shasta*; NT = not tested (test not required); fractions = no. fish positive for indicated pathogen/no. fish tested; IHNV was likely IHNV, type 1.

Table 2. Pathogen surveys 2002 – details of non-salmonids below dam***Below McIntyre Dam**

	No.	Collected	IHNV	IPNV	MC	CS
<u>Non-salmonids</u>						
Black crappie	40	0/40	0/40	NT	NT	
Bluegill	29	0/29	0/29	NT	NT	
Largemouth bass	34	0/34	0/34	NT	NT	
Northern pike minnow	20	0/20	0/20	NT	NT	
Peamouth chub	4	0/4	0/4	NT	NT	
Pumpkinseed	6	0/6	0/6	NT	NT	
Prickly sculpin	22	0/22	0/22	NT	NT	
Smallmouth bass	43	0/43	0/43	NT	NT	
Sucker(s)	62	0/62	0/62	NT	NT	
Yellow perch	89	0/89	0/89	NT	NT	
Total non-salmonids	349					

*IHNV = infectious haematopoietic necrosis virus; IPNV = infectious pancreatic necrosis virus; MC = *Myxobolus cerebralis*; CS = *Ceratomyxa shasta*; NT = not tested (test not required); fractions = no. fish positive for indicated pathogen/no. fish tested.

Table 3. Pathogen surveys 2002 – salmonids and non-salmonids above dam*

Above McIntyre Dam

	<u>No. collected</u>	IHNV	IPNV	MC	CS
<u>Salmonids</u>					
Kokanee (juveniles)	150	0/150	0/150	NT	0/150
Kokanee (spawners)	161	36/141	0/161	NT	0/161
Whitefish (various ages)	50	0/50	0/50	NT	0/50
Total salmonids	361				
<u>Non-salmonids</u>					
Eight species or groups	364	0/364	0/364	NT	NT
Total non-salmonids	364				

* See footnotes to Table 1

Table 4. Pathogen surveys 2002 – details of non-salmonids above dam*

Above McIntyre Dam

	No. collected	IHNV	IPNV	MC	CS
<u>Non-salmonids</u>					
Northern pike minnow	72	0/72	0/72	NT	NT
Peamouth chub	35	0/35	0/35	NT	NT
Pumpkinseed	27	0/27	0/27	NT	NT
Prickly sculpin	18	0/18	0/18	NT	NT
Redside shiner	38	0/38	0/38	NT	NT
Smallmouth bass	78	0/78	0/78	NT	NT
Sucker(s)	67	0/67	0/67	NT	NT
Yellow perch	29	0/29	0/29	NT	NT
Total non-salmonids	364				

* See footnotes to Table 2

Table 5. Total salmonids collected and processed for pathogens above and below McIntyre Dam during sampling years 2000, 2001 and 2002

<u>Species/Group</u>	Years 00, 01& 02 <u>Above Dam</u>	Years 00, 01& 02 <u>Below Dam</u>
Sockeye (juveniles)	0	1569
Sockeye (adults)	0	571
Kokanee (juveniles)	480	0
Kokanee (adults)	526	8
Whitefish (various ages)	161	148
Total species/groups	2	3
Total salmonids collected	1167	2295
Number needed	1080	1080

Table 6. Total non-salmonids collected and processed for pathogens above McIntyre Dam during 2000, 2001, and 2002 samplings

<u>Species/Group</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>Total/sp. or group</u>
Black bullhead (catfish)	2	0	0	2
Burbot	1	0	0	1
Carp	1	0	0	1
Chiselmouth	0	1	0	1
Chub(s)	0	6	0	6
Lake chub	1	0	0	1
Northern pike minnow	68	53	72	193
Peamouth chub	71	55	35	161
Pumpkinseed	12	21	27	60
Prickly sculpin	0	32	18	50
Sculpin(s)	40	0	0	40
Redside shiner	28	54	38	120
Smallmouth bass	89	82	78	249
Sucker(s)	72	78	67	217
Yellow perch	6	5	29	40
Totals collected	391	387	364	1142
Totals needed	360	360	360	1080

Table 7. Total non-salmonids collected and processed for pathogens below McIntyre Dam during 2000, 2001, and 2002 samplings

<u>Species/ Group</u>	<u>2000</u>	<u>2001</u>	<u>2002</u>	<u>Total/sp. or group</u>
Black bullhead (catfish)	1	0	0	1
Black crappie	1	20	40	61
Bluegill	0	0	29	29
Carp	4	0	0	4
Chiselmouth*	0	3	0	3
Largemouth bass	52	51	34	137
Northern pike minnow*	8	27	20	55
Peamouth chub*	0	0	4	4
Pumpkinseed	24	37	6	67
Prickly sculpin*	0	0	22	22
Sculpin(s)*	22	0	0	22
Smallmouth bass*	39	37	43	119
Sucker(s)*	39	81	62	182
Yellow perch*	99	115	89	303
Totals	289	371	349	1009
Needed	360	360	360	1080

* Migratory species based on reported ability to live in streams or to migrate into streams to spawn (Scott and Crossman 1973)

Table 8. Year 2000 and Year 2001 data on *Ceratomyxa shasta* in kokanee and whitefish above and below McIntyre Dam

	Above Dam	Below Dam
<u>Year 2000</u>		
Kokanee adults	5*/160	0/0
Kokanee juveniles	0/181	0/0
Whitefish (various ages)	0/38	0/7
<u>Year 2001</u>		
Kokanee adults	0/87**	0/0
Kokanee juveniles	0/150	0/0
Whitefish (various ages)	0/61	0/39

* Positives were from Mission Creek

** 150 fish were collected but intestinal samples for *C. shasta* testing were, by oversight, not collected from 63 of them