

Infectious Hematopoietic Necrosis Virus (IHNV): In 2010, 34 million sockeye salmon returned to the Fraser River marking the largest run since 1913. Sampling of two Fraser River sockeye stocks (Weaver Creek and Nadina River) demonstrated an IHNV prevalence of 2.0% and 52.8%; respectively. Similarly IHNV was detected at a prevalence of 24.4% in spawning sockeye salmon returning to the Okanagan River. This was the first detection of IHNV in this system since 2007, demonstrating the magnitude of variation in IHNV prevalence, ranging 86% to 0% over the ten year monitoring period. Annual surveillance and monitoring programs in British Columbia have revealed differences in IHN virus prevalence between years and/or fish stocks (see table for summary of IHNV prevalence)

Year	IHNV prevalence		
	Weaver Creek	Nadina River	Okanagan River
1987	38.2	0.0	No sample
1988	3.0	2.7	
1989	0.0	0.0	
1990	26.1	0.0	
1991	17.3	14.9	
1992	0.0	0.0	
1993	9.5	0.0	
1994	0.0	0.0	
1995	0.0	10.2	
1996	20.0	1.3	
1997	22.1	23.1	
1998	2.1	0.0	
1999	0.0	16.1	
2000	50.0	33.3	86.2 (94/109)
2001	23.1	21.2	33.3 (25/75)
2002	0.9	43.4	8.5 (5/59)
2003	15.1	0.0	3.8 (8/213)
2004	0.0	0.0	5.4 (10/185)
2005	0.0	0.8	0.4 (1/254)
2006	0.0	0.0	0.0 (0/222)
2007	No sample	0.0	0.3 (1/387)
2008	0.0	12.1	0.0 (0/568)
2009	0.0	0.0	0.0 (0/303)
2010	2.0	52.8	24.4 (61/250)

The IHNV virus identified from the Fraser and Okanagan River grouped into the endemic U genogroup based on nucleotide sequence analysis of a portion of the N and G-gene. IHN virus has not been detected in farmed Atlantic salmon in British Columbia since 2003.

Viral Hemorrhagic Septicemia Virus (VHSV): In March 2010, VHSV virus was detected from diseased herring taken from within an Atlantic salmon net-pen located in Barkley Sound (West Coast Vancouver Island). Nearly all (92%) of dead or moribund herring analyzed were positive for VHSV indicating that the high mortality was indeed due to VHS disease. Moreover the prevalence of VHSV in “healthy” or asymptomatic herring sampled via dipnet was considerable with 33% having detectable VHSV.

VHS virus was also found associated with Atlantic salmon mortality. Twenty-five percent of Atlantic salmon tested had detectable VHSV. Virus positive Atlantic salmon consisted of healthy (obtained by box seine sampling) and dead (obtained through dive) specimens. Sequence comparisons of virus isolated from herring vs. those obtained from Atlantics revealed that VHSV isolated from the different fish species was identical to one another suggesting that the infected herring are providing a point source of virus to the farmed Atlantic salmon.

Phylogenetic analysis based on nucleotide sequence of a portion of viral glycoprotein gene clearly demonstrates that the Barkley Sound VHS virus isolated from Pacific herring and Atlantic salmon is an endemic type, grouping amongst other VHSV isolates obtained from the West Coast of North America.

Great Lakes VHSV Surveillance: Collectively between the spring and fall of 2010, 858 fish were obtained from lakes in Ontario and Quebec and analyzed for VHSV using a universal VHSV RT-qPCR. All Samples were negative.