



United States Department of the Interior



FISH AND WILDLIFE SERVICE

CA-NV Fish Health Center
24411 Coleman Hatchery Road
Anderson, CA 96007

MEMORANDUM

DATE: 09/24/2007

TO: Klamath Fish Health Distribution List

FROM: Ken Nichols
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SUBJECT: 2007 Klamath River Pathogen Monitoring

As a component of Klamath River fish health assessment the California-Nevada Fish Health Center is examining juvenile Klamath River Chinook Salmon to monitor the incidence of *Ceratomyxa shasta* and *Parvicapsula minibicornis* infection. Fish are collected by biologists with the Karuk Tribe, Yurok Tribe, Hoopa Tribe and US Fish and Wildlife Service. The Fish Health Center is providing laboratory support for the project. Sampling began the week of April 15 and concluded the week of August 12, 2007.

Pathogen testing by QPCR has been performed for all fish collected. Weekly incidence of *C. shasta* and *P. minibicornis* in Chinook are summarized in Figure 1 and Table 1. *C. shasta* was detected in 18% of Chinook (294/1596) and 37% of coho (28/75) tested. *P. minibicornis* was detected in 72% of Chinook (784/1096) and 66% of coho (35/53) tested.



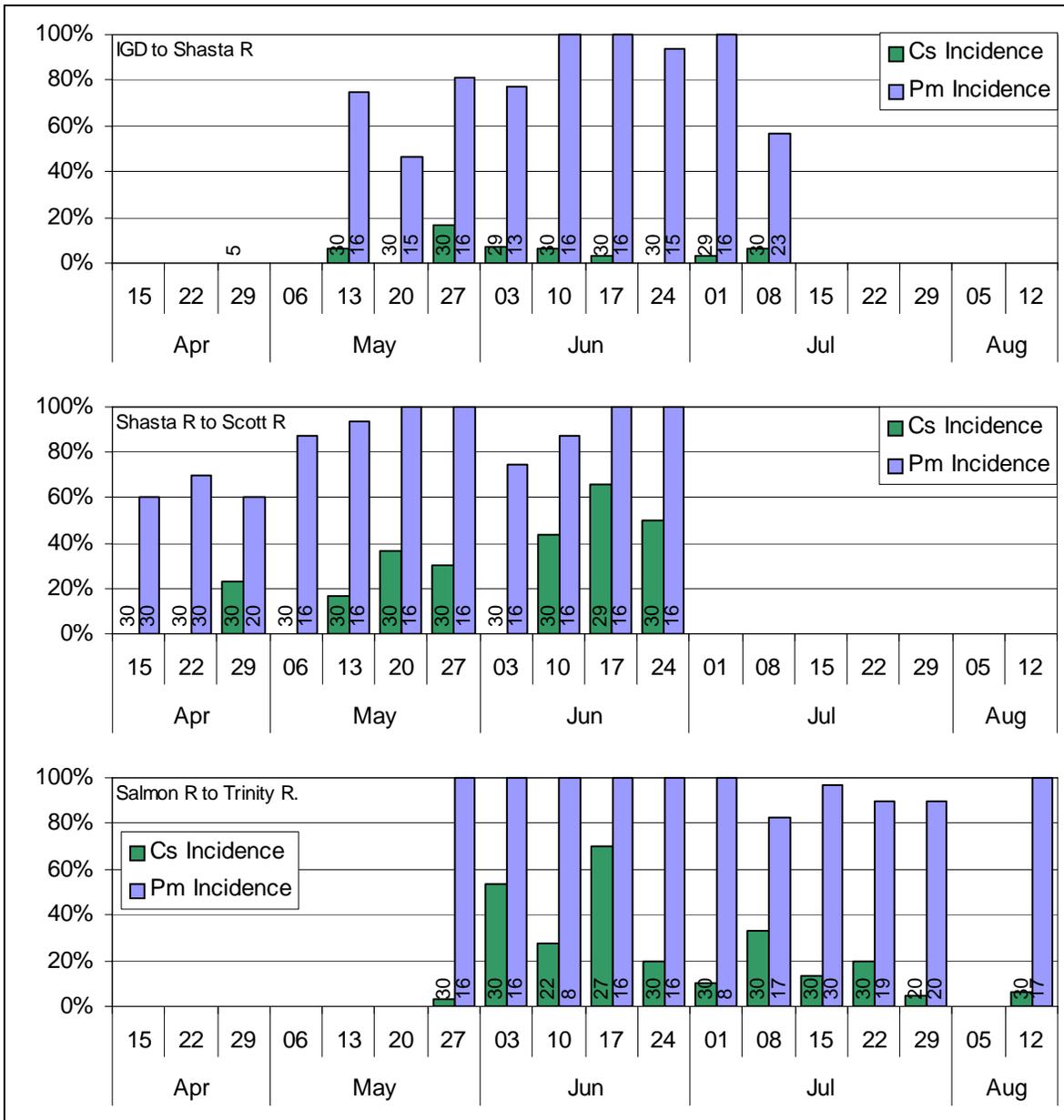


Figure 1. Weekly incidence of *Ceratomyxa shasta* and *Parvicapsula minibicornis* infection in juvenile Klamath River Chinook salmon captured in three reaches on the Klamath River (Iron Gate Dam to Shasta River, Shasta to Scott River and Salmon River to Trinity River). Number of fish assayed for each pathogen is indicated at the base of each bar. All data are preliminary and subject to revision.

Table 1. Weekly incidence of *Ceratomyxa shasta* in Chinook salmon by Quantitative Polymerase Chain Reaction (QPCR). All data are preliminary and subject to revision.

Reach	Apr 15	Apr 22	Apr 29	May 6	May 13	May 20	May 27	Jun 3	Jun 10	Jun 17	Jun 24	Jul 1	Jul 8	Jul 15	Jul 22	Jul 29	Aug 5	Aug 12
IGD-Shasta			0/5		2/30 7%	0/30	5/30 17%	2/29 7%	2/30 7%	1/30 3%	0/30	1/29 3%	2/30 7%					
Shasta-Scott	0/30	0/30	7/30 23%	0/30	5/30 17%	11/30 37%	9/30 30%	0/30	13/30 43%	19/29 66%	15/30 50%							
Salmon-Trinity							1/30 3%	16/30 53%	6/22 27%	19/27 70%	6/30 20%	3/30 10%	10/30 33%	4/30 13%	6/30 20%	1/20 5%		2/30 7%
Trinity-Estuary									5/8 63%	7/33 21%	0/20	7/35 20%	2/32 6%			0/24	0/10	
Klamath Estuary											24/32 75%	43/49 88%	1/36 3%	8/61 13%	5/48 10%	2/31 6%	0/7	0/8
Weekly Total	0/30	0/30	7/35 20%	0/30	7/60 12%	11/60 18%	15/90 17%	18/89 20%	21/82 26%	44/94 47%	52/155 34%	47/128 37%	20/131 15%	14/123 11%	11/78 14%	3/75 4%	0/17	2/38 5%

Table 2. Weekly incidence of *Parvicapsula minibicornis* in Chinook salmon by Quantitative Polymerase Chain Reaction (QPCR). All data are preliminary and subject to revision.

Reach	Apr 15	Apr 22	Apr 29	May 6	May 13	May 20	May 27	Jun 3	Jun 10	Jun 17	Jun 24	Jul 1	Jul 8	Jul 15	Jul 22	Jul 29	Aug 5	Aug 12
IGD-Shasta					12/16 75%	7/15 47%	13/16 81%	10/13 77%	16/16 100%	16/16 100%	14/15 93%	16/16 100%	13/23 57%					
Shasta-Scott	18/30 60%	21/30 70%	12/20 60%	14/16 88%	15/16 94%	16/16 100%	16/16 100%	12/16 75%	14/16 88%	16/16 100%	16/16 100%							
Salmon-Trinity							16/16 100%	16/16 100%	8/8 100%	16/16 100%	16/16 100%	8/8 100%	14/17 82%	29/30 97%	17/19 89%	18/20 90%		17/17 100%
Trinity-Estuary									5/5 100%	10/34 29%		15/36 42%						
Klamath Estuary											32/32 100%	49/49 100%						
Weekly Total	18/30 60%	21/30 70%	12/20 60%	14/16 88%	27/32 84%	23/31 74%	45/48 94%	38/45 94%	38/40 95%	53/53 100%	88/113 78%	73/73 100%	42/76 77%	29/30 97%	17/19 89%	18/20 90%		17/17 100%