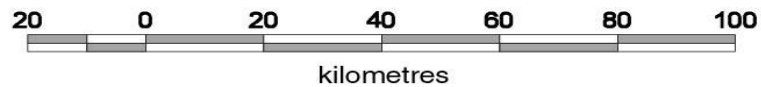
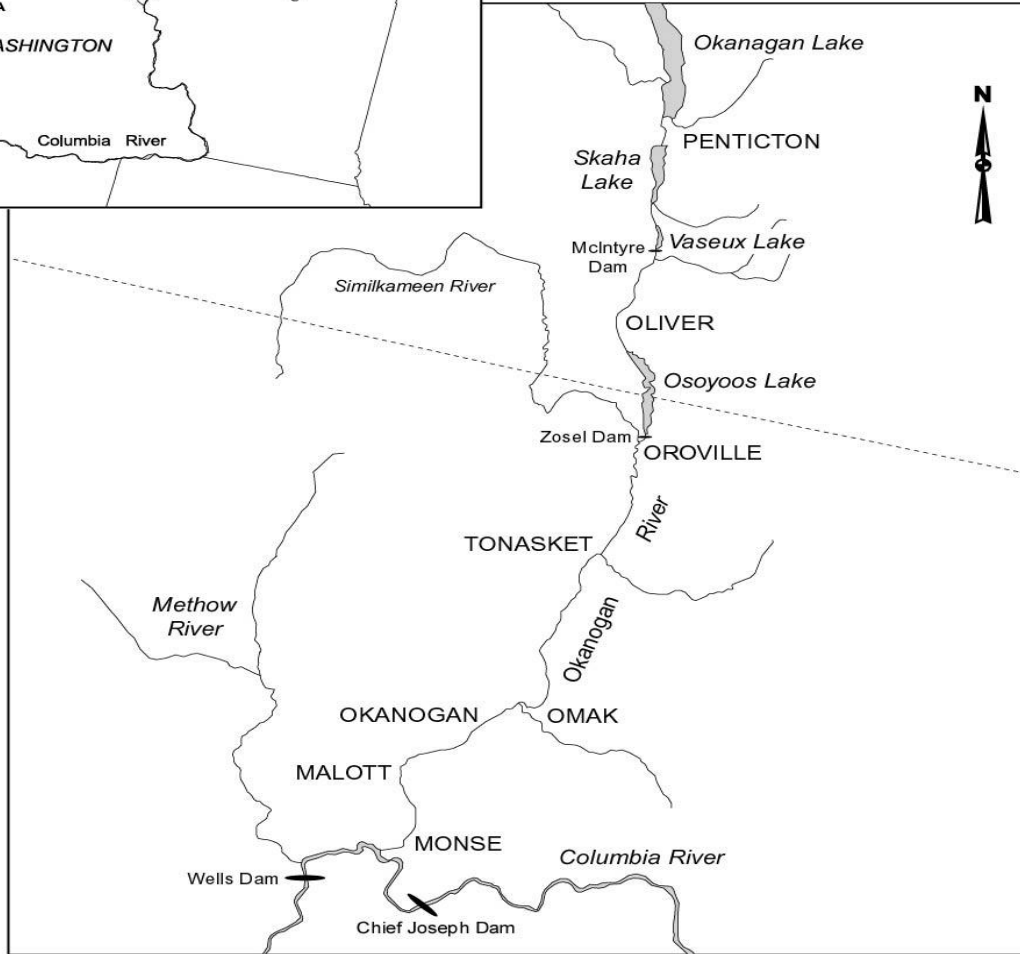
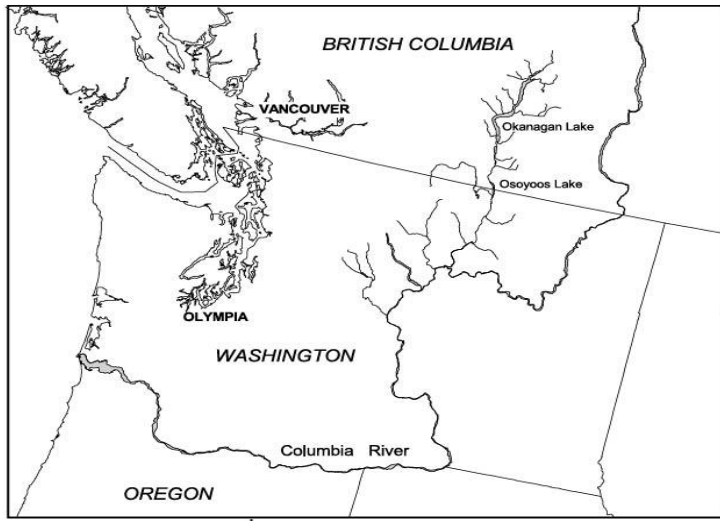
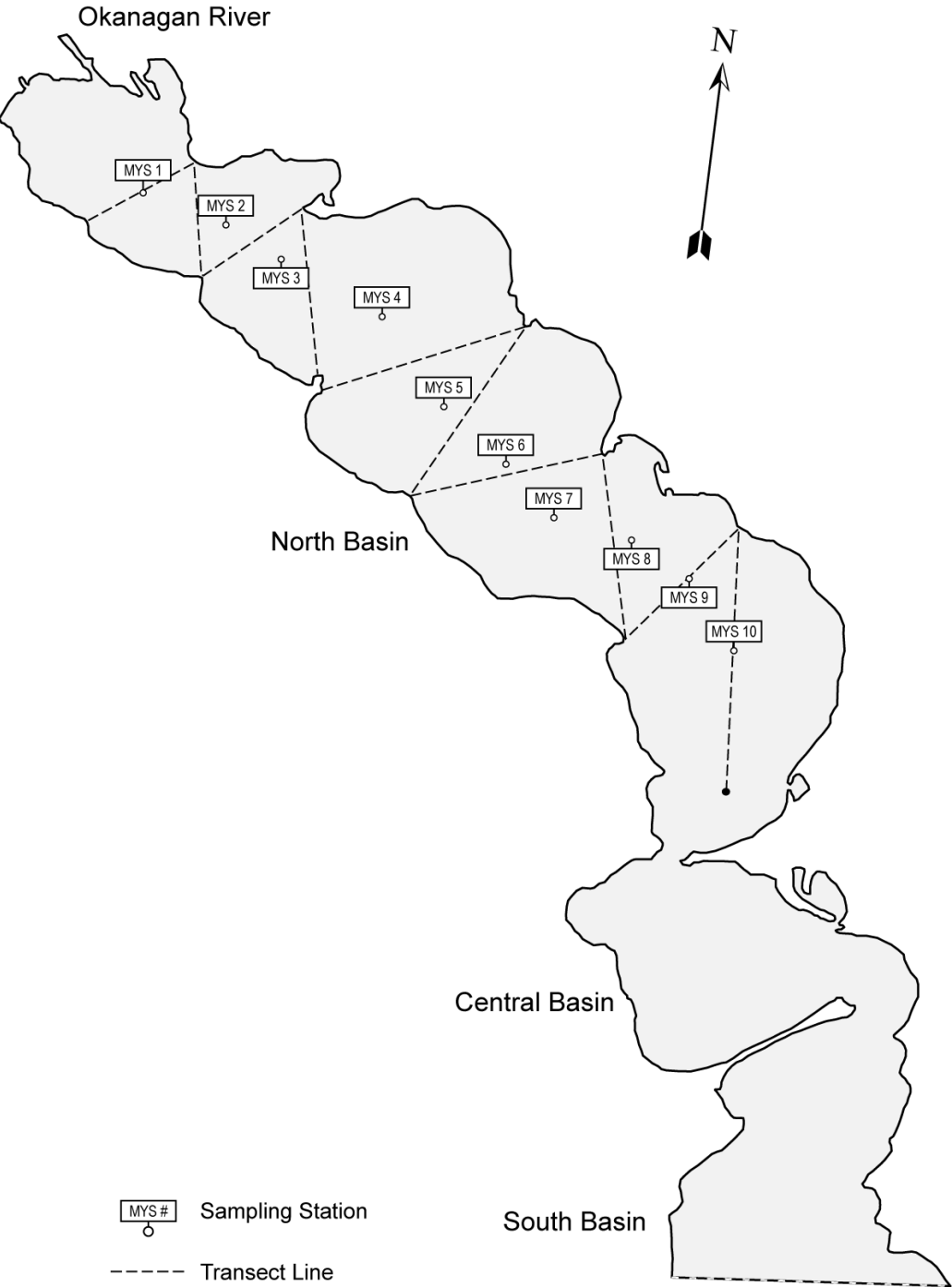


A large school of salmon swimming in dark water, with a teal jagged shape at the bottom right.

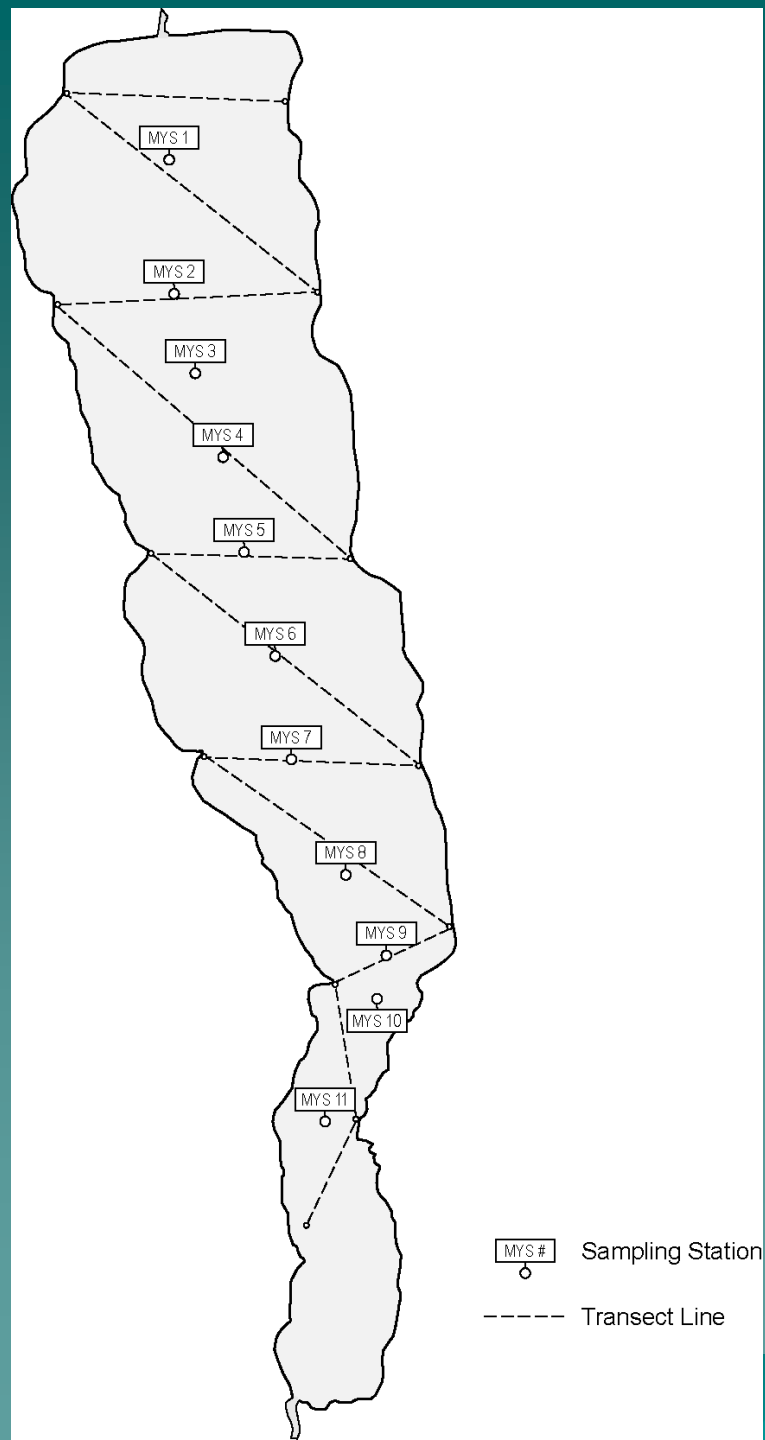
Results of 2009 year; in-lake monitoring results



Osoyoos Lake



Skaha Lake



What we collected

- ◆ Water
- ◆ Phytoplankton
- ◆ Zooplankton
- ◆ *Mysis relicta*
- ◆ *Echo sounding records for fish population estimates*
- ◆ Sockeye and kokanee samples separated on basis of thermal marks and scale samples

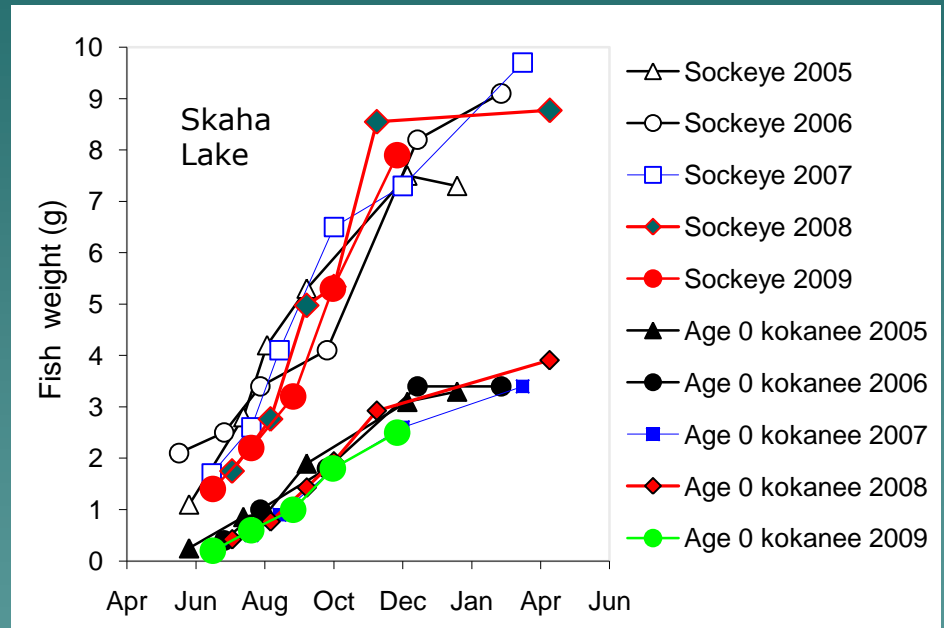
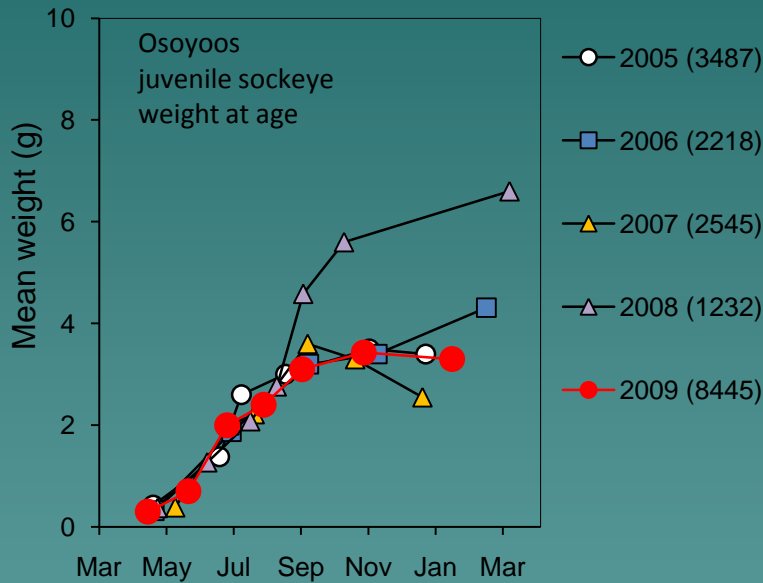
Osoyoos Lake

	Brood Year					2008
	2003	2004	2005	2006	2007	
Spawning escapement	19,000	41,000	32,000	21,000	14,000	129,000
Spring fry numbers	1,035,000	4,521,800	2,359,200	3,833,700	1,179,600	10,321,500
Presmolt numbers	851,000	1,752,000	1,390,000	2,190,000	864,000	7,724,000
PED to fry survival (%)	4	2	3	7	6	5
Fry to pre-smolt survival (%)	82	39	59	57	73	75
Smolt size (g)	7.25	6.1	7.7	5.9	9.2	6.5
Production (kg/ha)	6.6	11.5	11.5	13.8	8.5	53.5

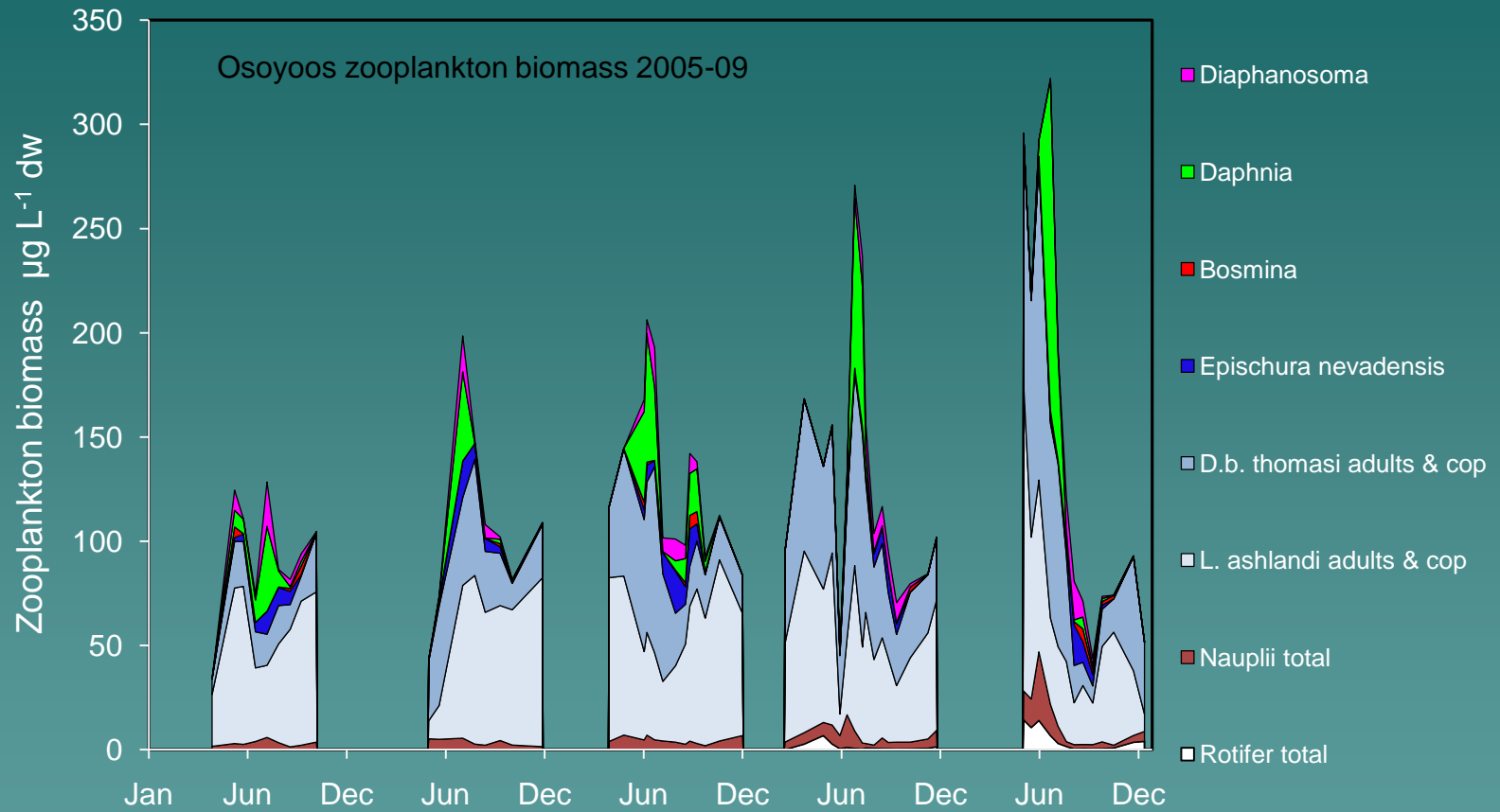
Skaha Lake

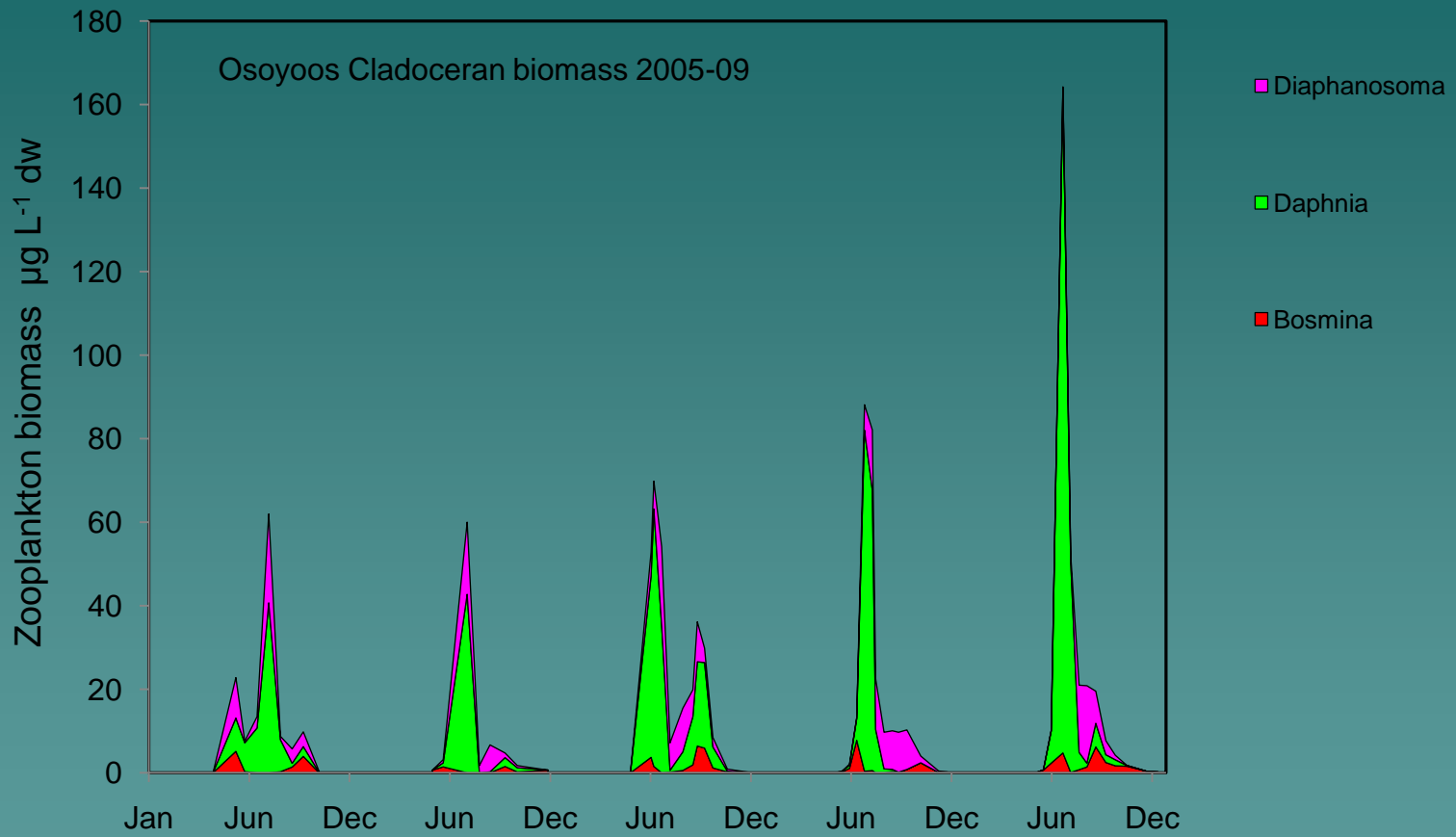
	Brood Year					
	2003	2004	2005	2006	2007	2008
Spawning escapement	19,000	41,000	32,000	21,000	14,000	129,000
Out-plant numbers	360,000	1,205,000	1,384,000	1,479,000	885,500	1,614,000
Presmolt numbers	159,000	144,000	132,000	198,000	174,000	231,000
Egg to fry survival (%)	35	9	8	8	11	12
Spring fry to pre-smolt survival (%)	44	12	10	13	20	14
Smolt size (g)	19.2	14.2	13.3	14.8	18.5	15.5
Production (kg/ha)	1.6	1.1	0.9	1.5	1.7	1.8

Osoyoos weight-at-age for juvenile sockeye and Skaha weight at-age-for juvenile sockeye and kokanee



Osoyoos Lake zooplankton biomass 2005-09





Why manipulate?

- ◆ Skaha Lake kokanee must persist in spite of sockeye introductions. An experimental approach with controls and manipulations is required and was agreed to by parties.
- ◆ Invasive Mysis consume 2-3 times as much zooplankton as all fish combined.
- ◆ Juvenile kokanee/sockeye consume <1% of zooplankton standing stock per day
- ◆ Moving sockeye to Osoyoos for 1-2 years would allow additional monitoring of kokanee in absence of sockeye
- ◆ Future plans include adding as many sockeye as possible to Skaha Lake while continuing to monitor kokanee growth and survival

Osoyoos is a good choice

- ◆ Hatchery incubated sockeye originated from Osoyoos
- ◆ Out planting here will allow us to test for a hatchery effect
- ◆ Out planting in both lakes would allow for a test of hatchery and lake effects
- ◆ All of “production” remains in the Columbia River basin
- ◆ Based on 2009 results, the addition of an additional 1,500 fish per hectare is unlikely to have a negative impact on wild stock.
- ◆ Out planted smolts will ½ the weight they would have achieved had they been put back into Skaha