

14 Lakes 2008 Egg Mass Surveys

Survey Date: 3/25/08

Surveyors: H. Barnett, S. Nickelson

Weather: clear and sunny when started, clouds rolled in about 12:00

General Observations

- 1) Pond water levels are lower and similar to 2003 or 2004 levels.
- 2) Water is murky in several ponds and surveyors had some difficulty seeing egg masses in these areas.
- 3) Much of the emergent vegetation in all ponds recently died off likely due to relatively high water levels the last few years.
- 4) Red-legged frog egg masses are almost exclusively associated with tops of trees that were added in the 2005 project. Needles have fallen off the branches and all branches remain relatively close to shore.

General Results

The total number of red-legged frog egg masses counted at 14 Lakes during 2008 was the highest recorded during SPU surveys between 2003 and 2008 (Figure 1, Table 1). All ponds were surveyed during 2006 through 2008. Total egg mass counts of 1,533 and 1,778 were relatively similar between 2006 and 2008 when survey conditions allowed surveyors to access all areas. Water level at all lakes was extremely high during 2007 and surveyors were not confident that all egg masses were visible during the survey. The blue bars in the below graph show egg mass counts for only big and small lakes as these ponds were surveyed in all years. Excluding 2006, egg mass counts are relatively stable and consistent at these sites.

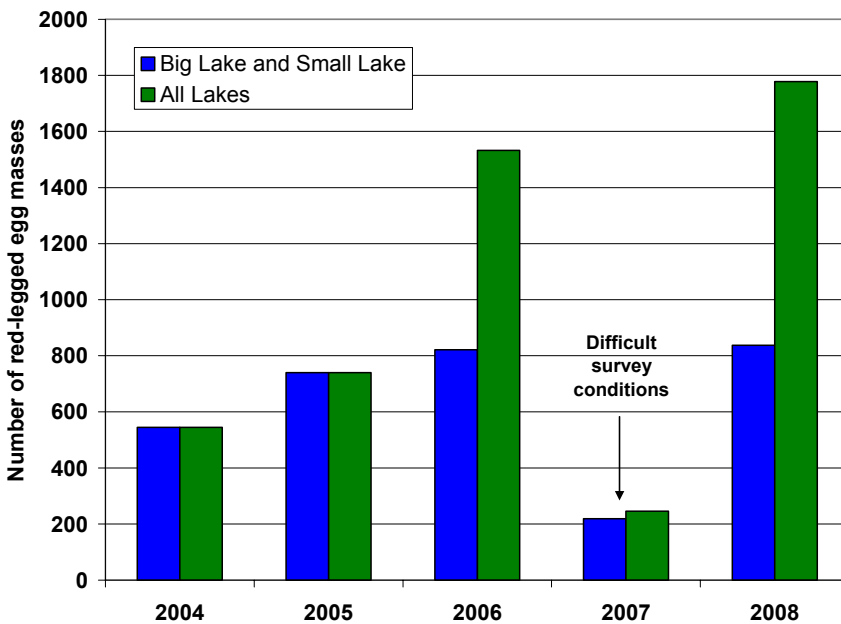


Figure 1. Number of red-legged frog egg masses recorded at 14 Lakes. Only Big, Deep and Small lakes were surveyed in 2004 and 2005. Blackberry and Wood lakes were added in 2006.

Table 1. Number of egg mass counted in 14 Lakes wetland complex during 2008.

Egg Mass Totals	2008
	3/25/08
Red-legged Frog	1778
Northwestern Salamander	218
Pacific Treefrog	29
Long-toed Salamander	--
Rough-skinned Newt	--

Annual variability between ponds is high for red-legged frog egg mass counts between 2003 and 2008 (Figure 2). We began surveying Wood and Blackberry lakes in the spring of 2006 and do not have data prior to that time. At this time it is unknown what causes the frogs to preferentially select one pond over another. Factors such as temperature, congregation of males at a particular pond, water level or a combination of these factors might explain some of the observed annual variability we record in the 14 Lakes wetland complex.

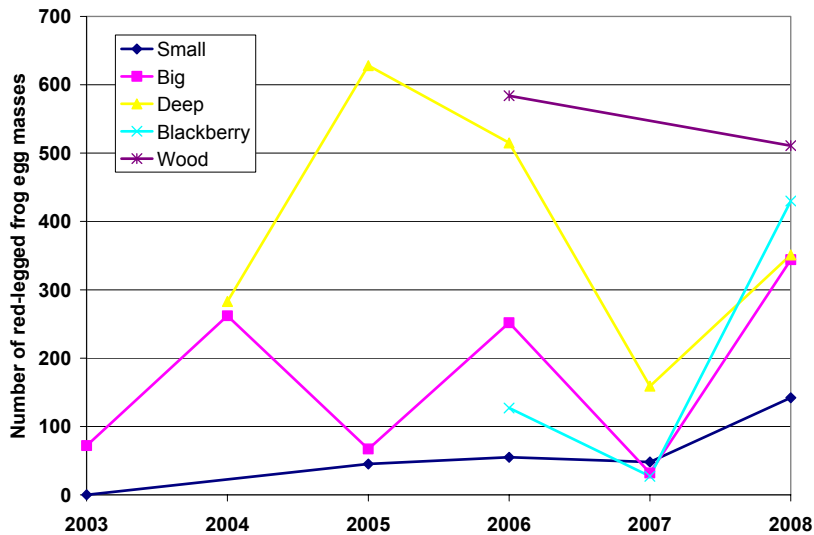


Figure 2. Number of red-legged frog egg masses recorded at each pond in the 14 Lakes wetland complex.

Most red-legged frog egg masses were associated with the branches of trees dropped in the ponds following the 2005 riparian enhancement project when selected trees were directionally fallen to reach into the ponds (Figure 3). Needles have decomposed leaving a network of branches that provide attachment surfaces for red-legged frogs and northwestern salamanders. Although we did not detect any long-toed salamander egg masses during our survey, they likely also use these substrates. Surveyors noted that often the only cover available for frogs was provided by logs and branches associated with trees from the 2005 project and that egg masses were congregated in these areas.



Figure 3. Red-legged frog egg masses attached to branches of trees dropped in ponds during the 2005 riparian enhancement project.

Small Lake (surveyed by H. Barnett and S. Nickelson)

- * The majority of egg masses were located at the SE end of the pond
- * Red-legged frog egg masses were the most common species observed
- * Photo point taken

Egg Mass Totals	2003	2004	2005	2006	2007	2008
	3/25/2003	pond dry	4/1/2005	3/23/2006	3/27/07	3/25/08
Red-legged Frog	0		45	55	48	142
Northwestern Salamander	12		106		1	84
Pacific Treefrog			21			
Long-toed Salamander	1			1		
Rough-skinned Newt						



Photo Point at Small Lake: 2006 to the left, 2007 middle, 2008 to right.

Big Lake (surveyed by H. Barnett, S. Nickelson)

- * Red-legged frog egg masses concentrated on branches supplied by the trees dropped during the 2005 project.
- * Red-legged frog egg masses were the most common species observed
- * Majority of red-legged egg masses located on E edge of pond associated with small alder samplings and mats of floating grass pieces.

Egg Mass Totals	2003	2004	2005	2006	2007	2008
	3/25/2003	3/23/2004	4/1/2005	3/23/2006	3/27/07	3/25/08
Red-legged Frog	72	262	67	252	32	344
Northwestern Salamander	54	2	1	2	0	44
Pacific Treefrog	6	111	Lots	1	Lots	7
Long-toed Salamander				4		
Rough-skinned Newt						



Photo Point 37: 2006 at left, 2007 in middle and 2008 at right.



Photo Point 40: 2006 at left, 2007 in middle and 2008 at right.



Photo Point 41: 2006 at left, 2007 in middle and 2008 at right.



Photo Point 42: 2006 at left, 2007 in middle and 2008 at right.

Deep Lake (surveyed by H. Barnett, S. Nickelson)

- * Red-legged frog egg masses were the most common species observed
- * Majority of red-legged egg masses located on NE edge of pond
- * Red-legged frog egg masses were concentrated on the branches supplied by the trees dropped during the 2005 project.

Egg Mass Totals	2003	2004	2005	2006	2007	2008
	3/25/2003	3/23/2004	4/1/2005	3/23/2006	3/27/07	3/25/08
Red-legged Frog		283	628	515	159	351
Northwestern Salamander		33	82	14		11
Pacific Treefrog		153	Lots		Lots	
Long-toed Salamander						
Rough-skinned Newt				1		



Photo Point 35: 2006 at left, 2007 in middle and 2008 at right.



Photo Point 36: 2006 at left, 2007 in middle and 2008 at right.

Blackberry Lake (surveyed by H. Barnett and S. Nickelson)

- * Red-legged frog egg masses were the most common species observed
- * Red-legged frog egg masses concentrated in the NE portion of the lake.
- * Earth Corps efforts have removed much of the blackberry, we didn't see any big canes.

Egg Mass Totals	2006	2007	2008
	3/23/2006	3/27/07	3/25/08
Red-legged Frog	127		430
Northwestern Salamander			30
Pacific Treefrog	2		18
Long-toed Salamander			
Rough-skinned Newt			



Photo Point 34: 2006 at left, 2007 in middle and 2008 at right.

Wood Lake (surveyed by H. Barnett and S. Nickelson)

Egg Mass Totals	2006	2007	2008
	3/23/2006	3/27/07	3/25/08
Red-legged Frog	584		511
Northwestern Salamander	14		49
Pacific Treefrog	5		4
Long-toed Salamander			
Rough-skinned Newt			



Photo Point: 2006 at left and 2008 at right.