Copake Lake Annual Meeting

July 11, 2015

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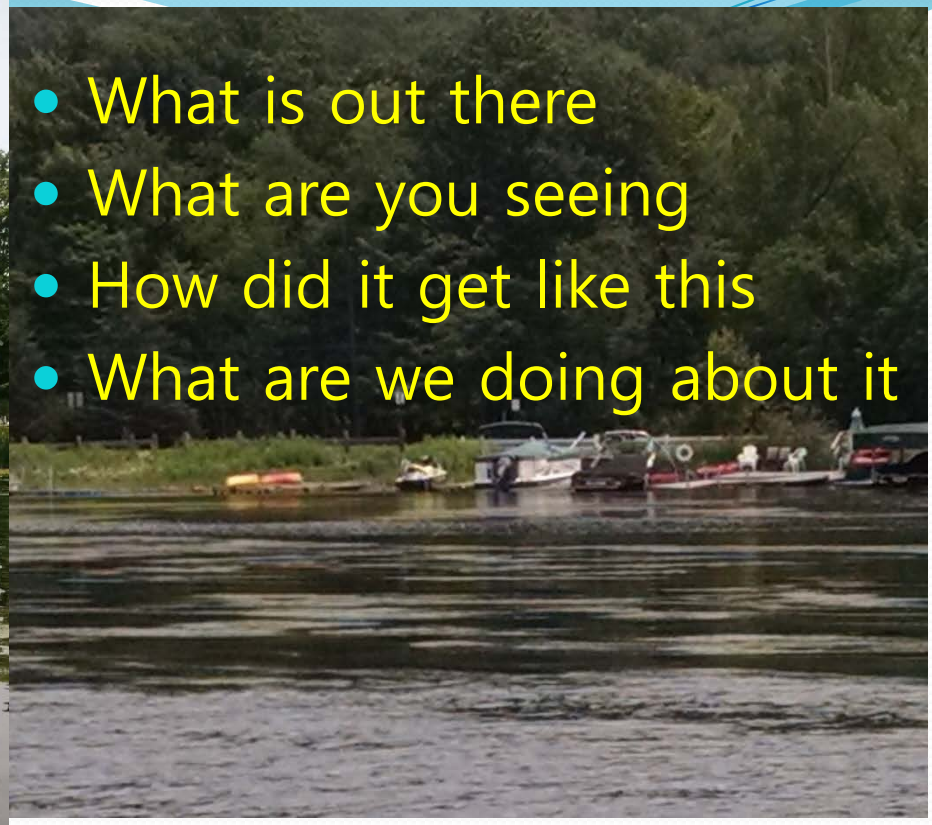
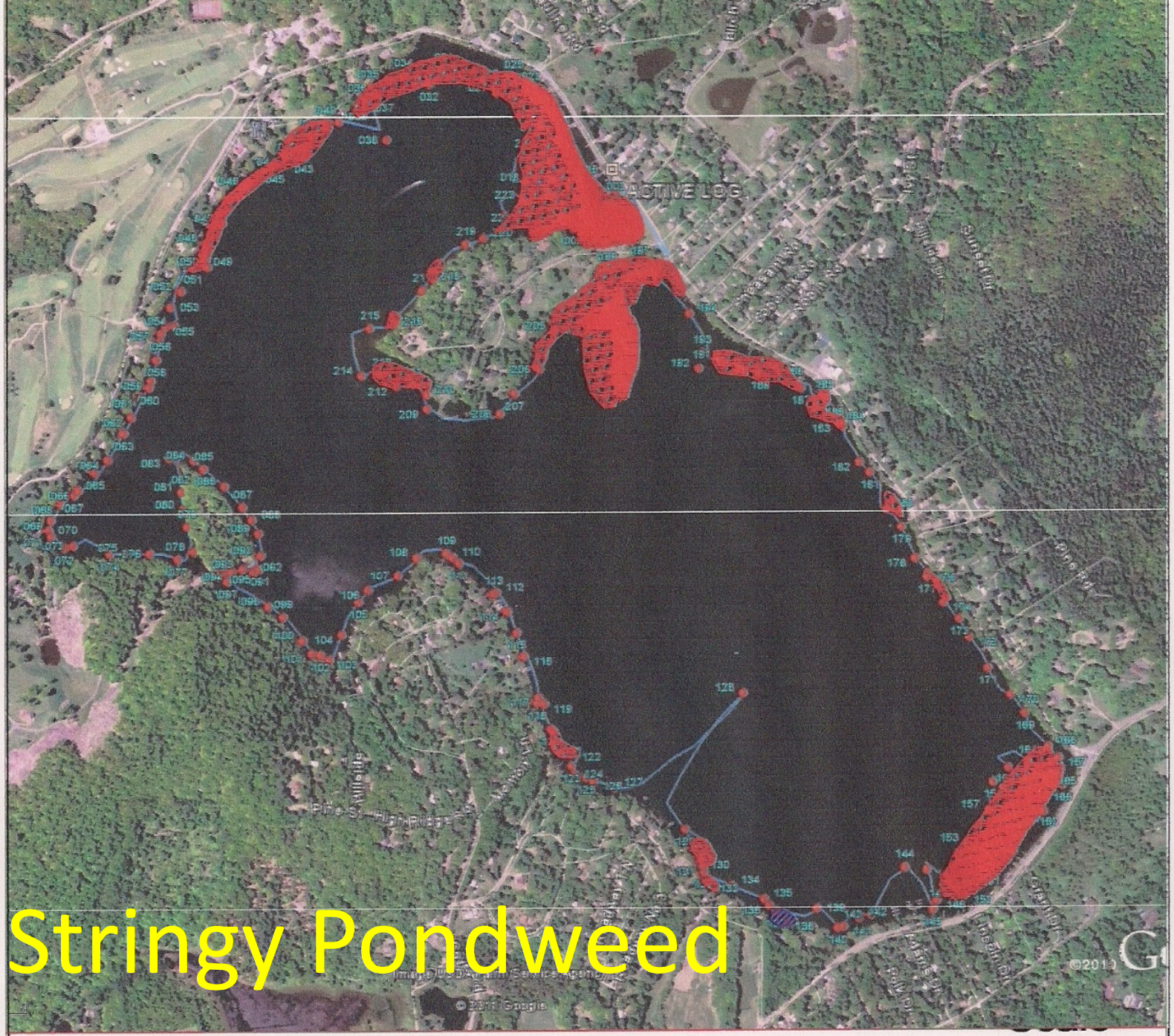
Weeds



- What is out there
- What are you seeing
- How did it get like this
- What are we doing about it

Milfoil
Curly-leaf pondweed
Stringy Pondweed
Elodea
Star Grass

Stringy Pondweed
Potamogeton strictifolius

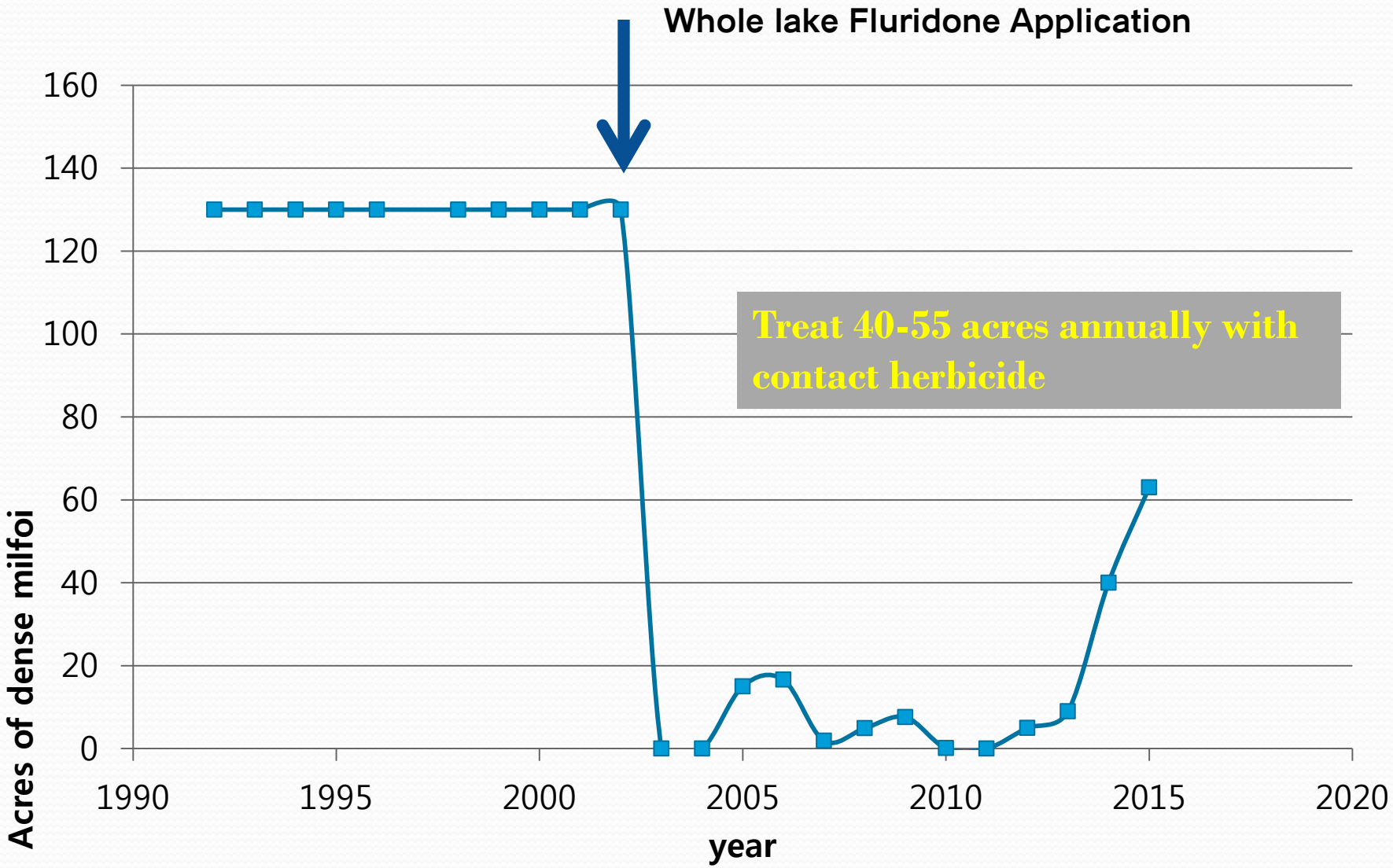


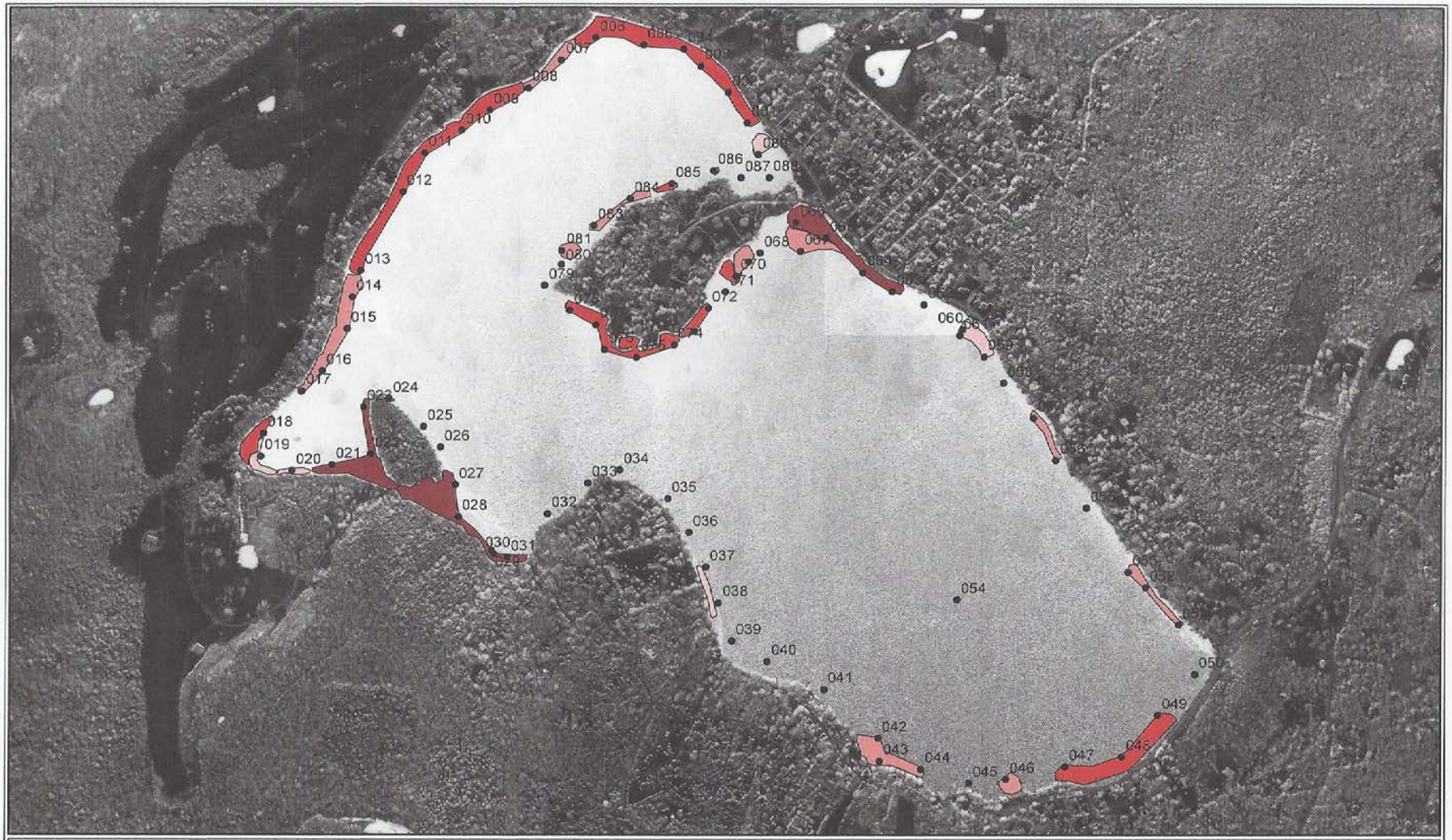
Stringy Pondweed

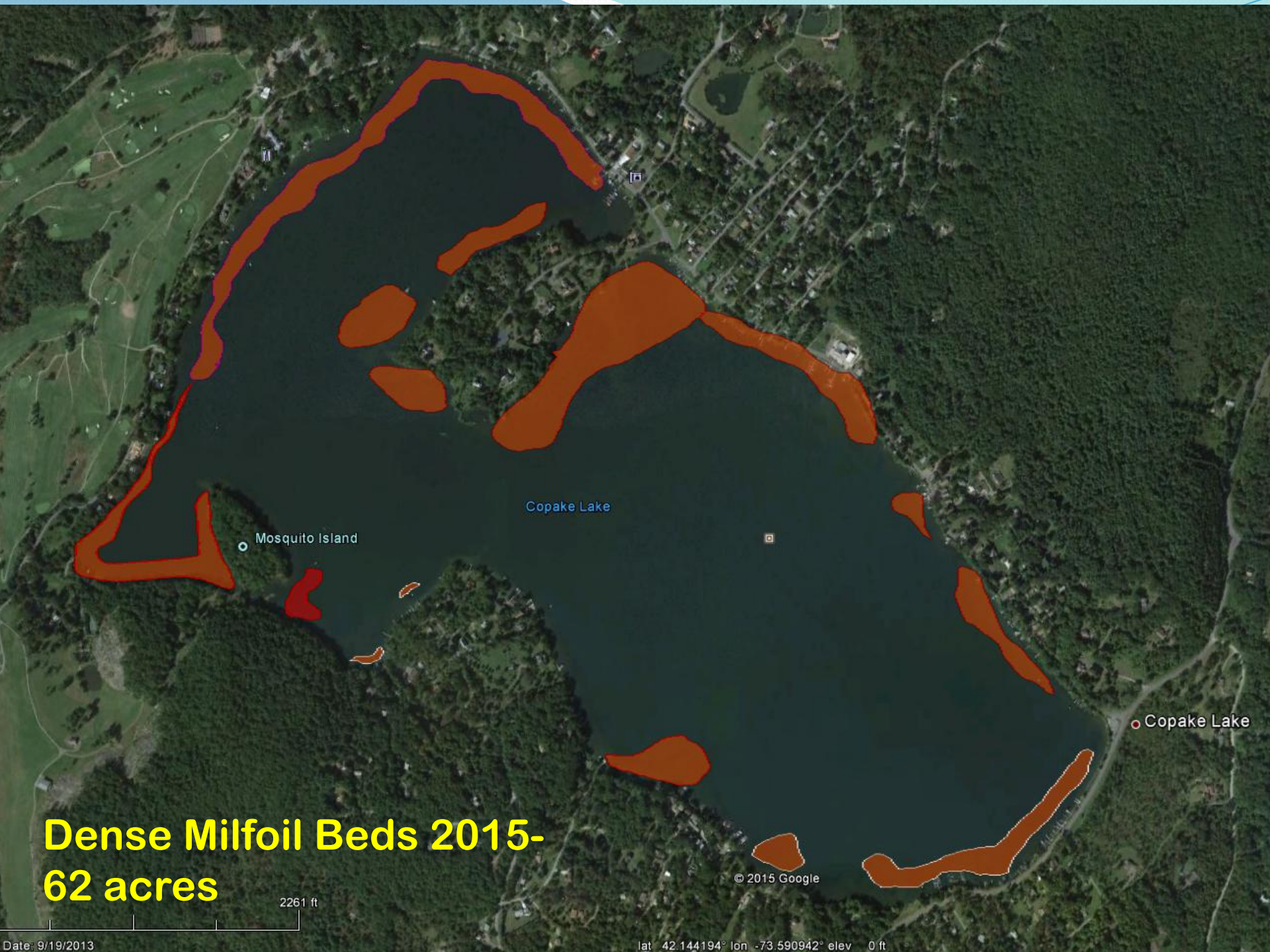
Eurasian Milfoil

Map of milfoil Coverage in 2000

Acres of Milfoil




Copake Lake Eurasian Milfoil Presence 9-22-14
NorthEast Aquatic Research
0
750
1,500
3,000 Feet
N
Sparse = 5-20% cover
Medium = 21-59% cover
Dense = 60-90% cover
9-22-14 Copake Waypoints
9-22-14_Sparse
9-22-14_Medium
9-22-14_Dense
9-22-14_100%_Growth 5



Dense Milfoil Beds 2015-
62 acres

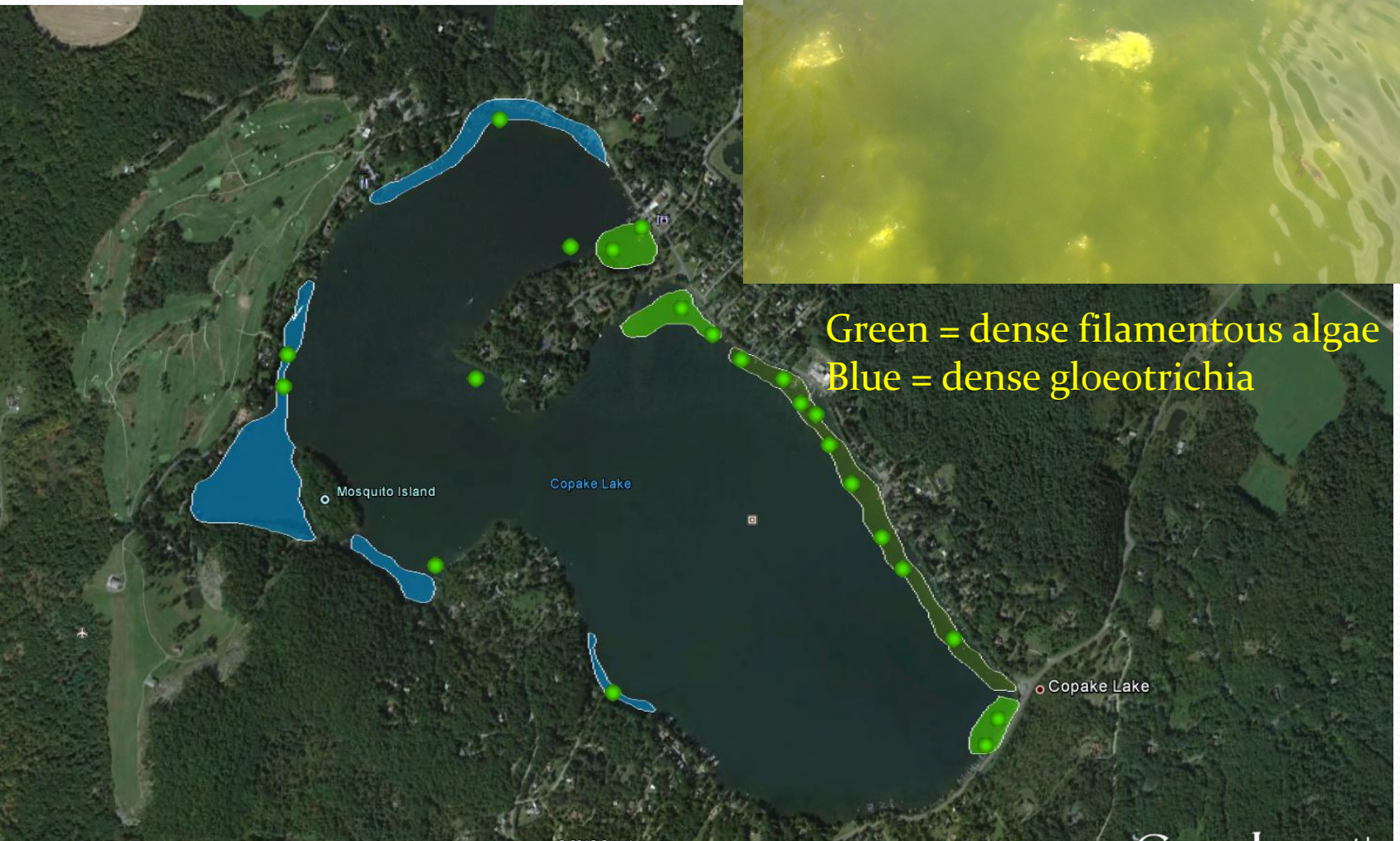
Other plants

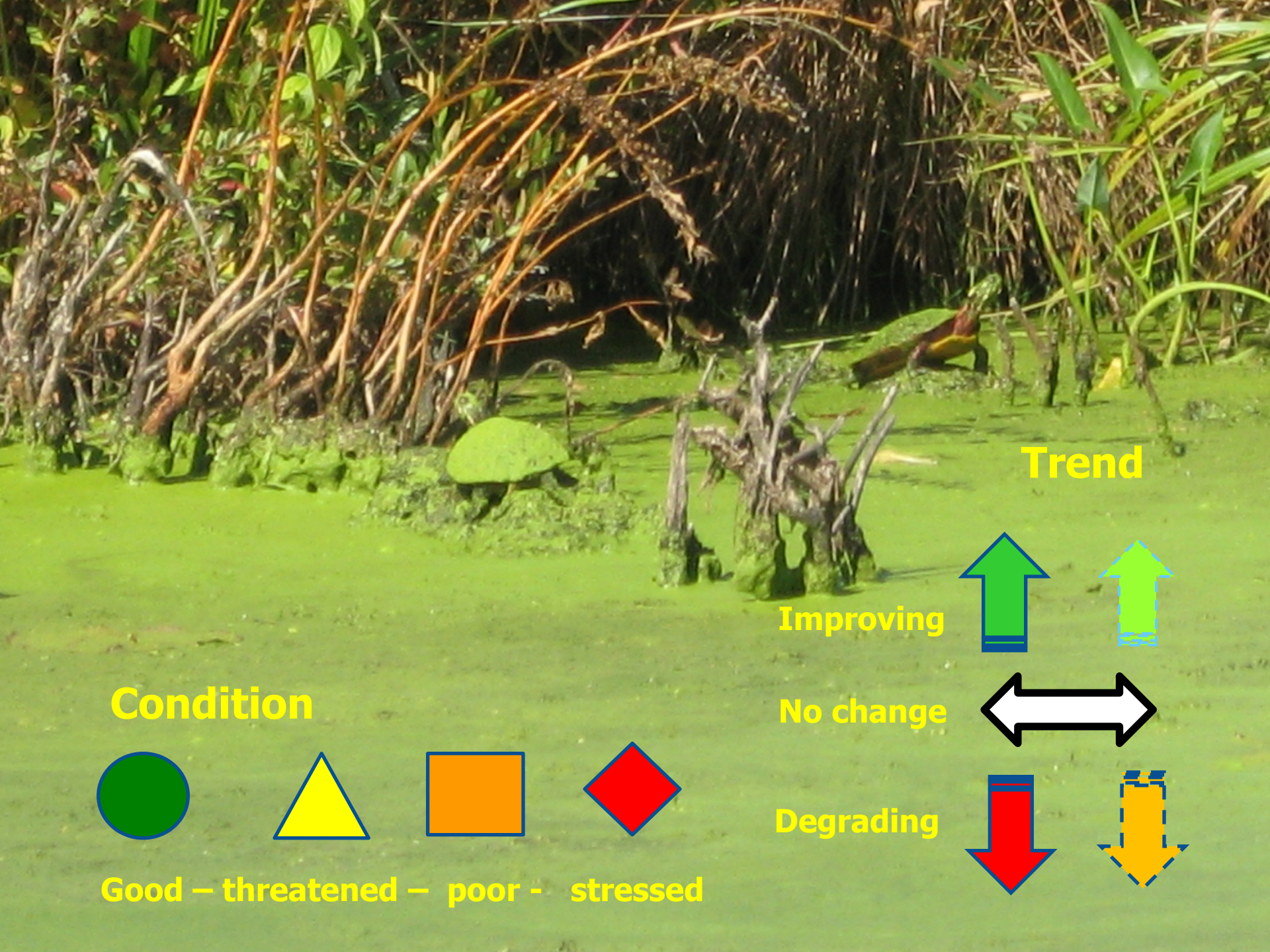
Curly-leaf pondweed

Yellow star grass

Elodea

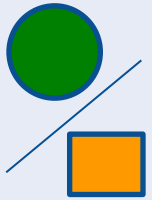
Filamentous algae




Trend
Improving
No change
Degrading
Condition
Good – threatened – poor - stressed

Copake Lake Condition

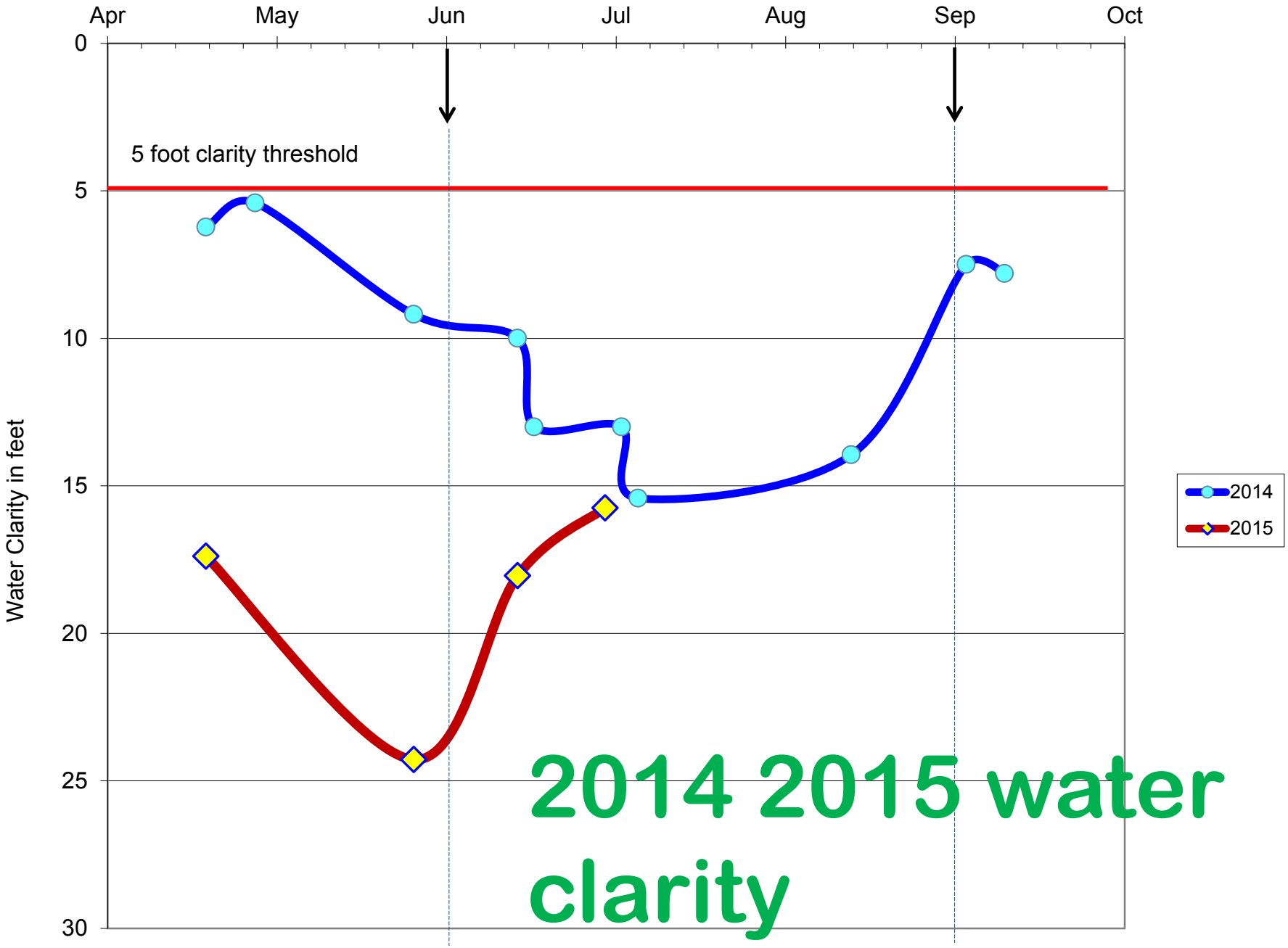
Whole lake Fluridone application 2002

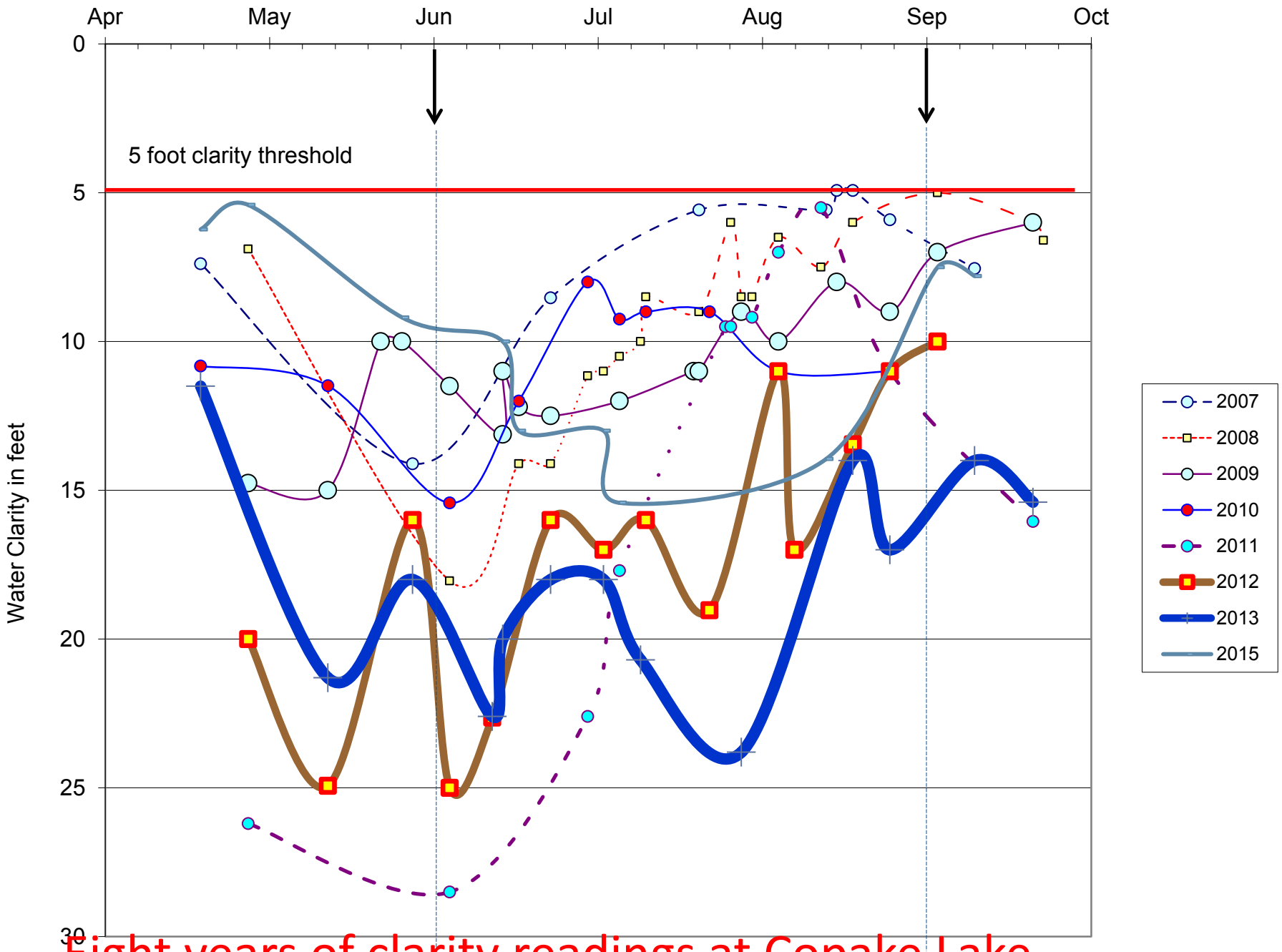
	2000	2005	2006	2007	2008	2009	2010	2011	2012
Milfoil & Curly									
Water clarity									
Native plant diversity									

Copake Lake Condition

	2013	2014	2015						
Milfoil & Curly									
Water clarity									
Native plant diversity									

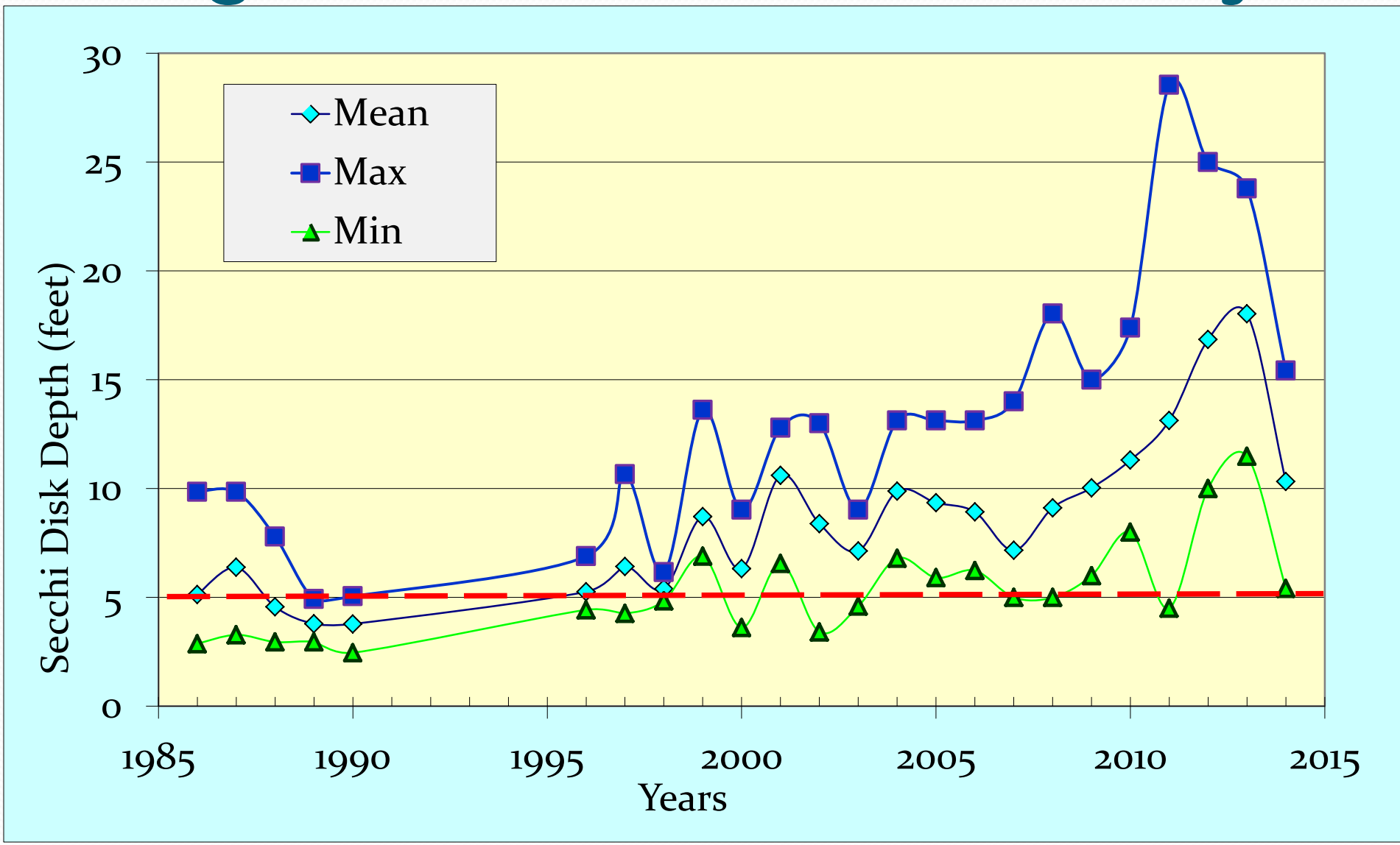
There are now 11 species of native aquatic plants in Copake Lake


Apr
May
Jun
Jul
Aug
Sep
Oct
0
5
10
15
20
25
30
5 foot clarity threshold
Water Clarity in feet
2014
2015
2014 2015 water clarity

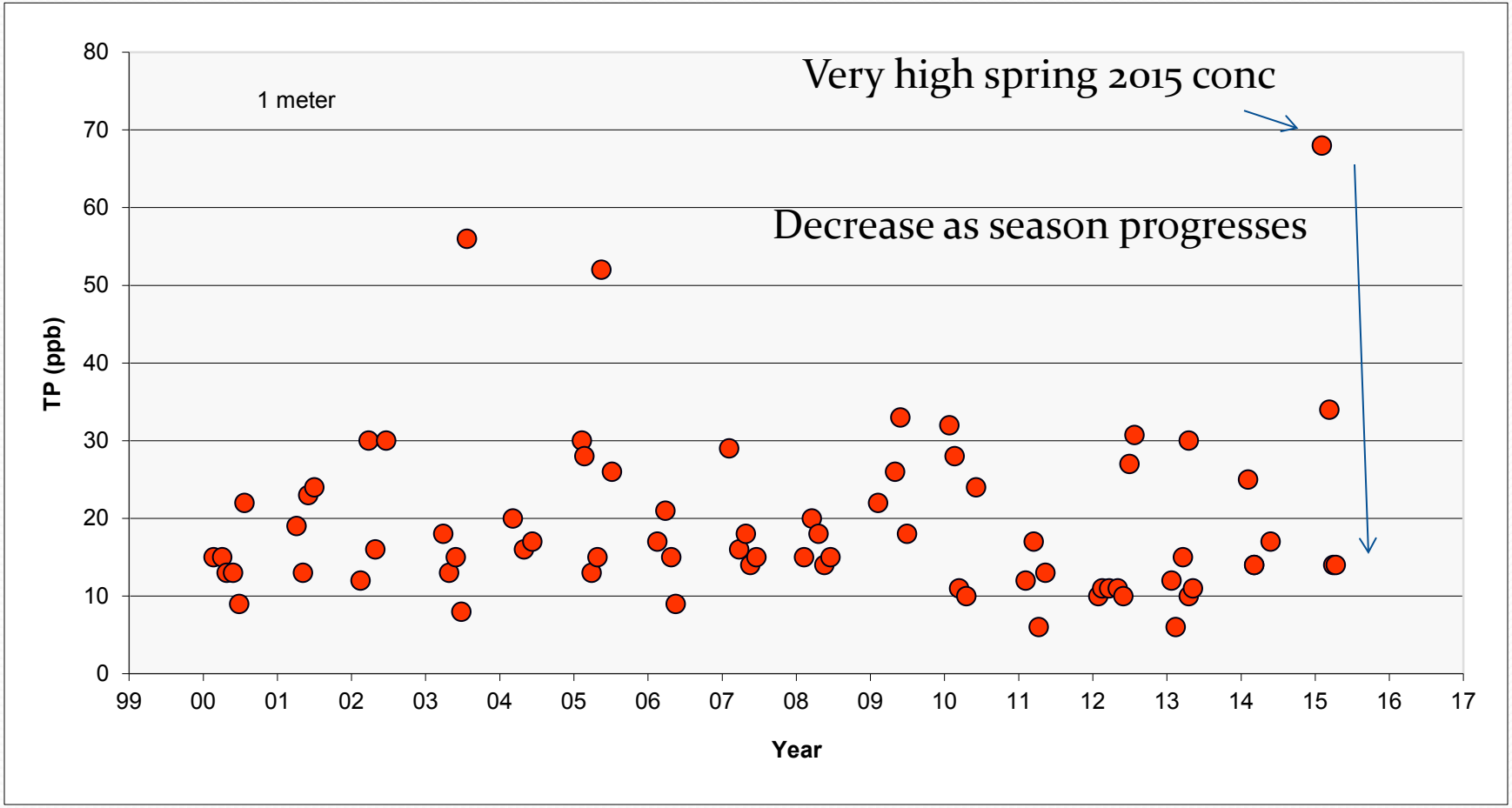


Eight years of clarity readings at Copake Lake

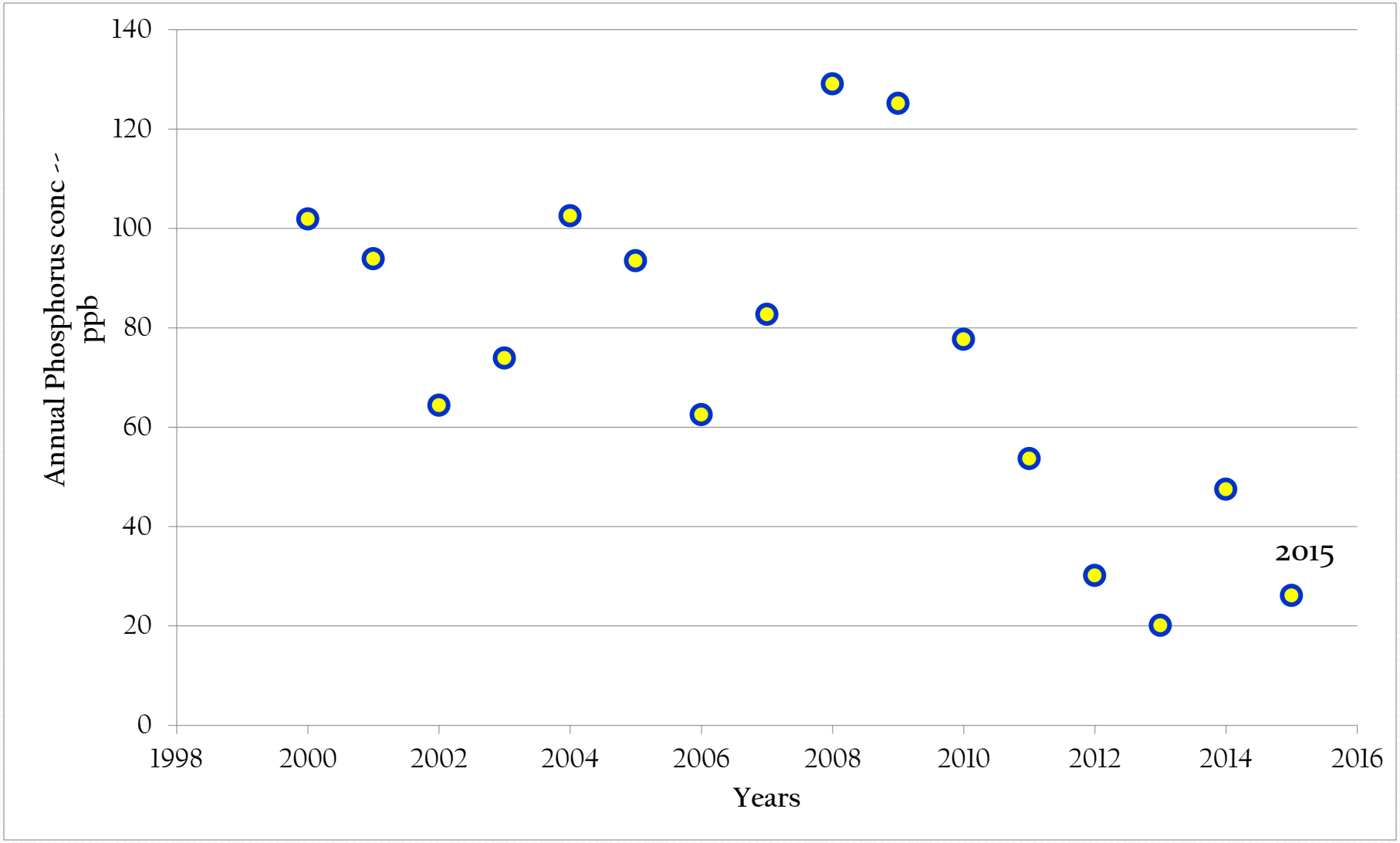
Long-term trend in water clarity



Long-term phosphorus record



Long-term trend in whole-lake annual average phosphorus content



Summary 1

1. Fluridone pellets were chosen as herbicide to use in 2015 to allow controlled treatment of milfoil beds but give longer seasonal control and better long-term control.

2. However, the combination of late start in getting DEC permit—late May as opposed to early May, significant amount of milfoil that overwintered from the preceding year, and higher nutrient runoff in spring of 2015 lead to significantly more aquatic plant growth in Copake Lake this year than any year since the initial Fluridone application in 2002.

Summary 2

3. At this time, effectiveness of the fluridone pellets is uncertain, as more time is needed for the chemical to take affect—partially because we were about a month late with the treatment. We will be evaluating both control of milfoil and native aquatic plants in Copake Lake.
4. Stringy pondweed became very dense again this year. Again this plant now thrives in the lake due to the overall increased water clarity. We may be able to mechanically harvest this weed in areas where it is especially prolific.
5. Gloeotrichia is present in the lake again this year, although this year we will be attempting to control growth of this cyanobacteria with copper sulfate.

Summary 3

6. Phosphorus concentration in the lake has been decreasing overall for the last several years but unusual winter may have caused higher than normal runoff into the lake.

7. Water clarity much better than last year although poorer start suggests spring runoff concerns. increased with declining in-lake phosphorus concentration

8. Growths of filamentous algae are severe again this year and will be targeted with copper sulfate treatments. Filamentous algae is indicator that nutrient sources from the drainage basin are still high.