Sunfish (*lepomis spp.)* Predation on Milfoil Weevils (*Eurychiopsis lecontei)*

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February 20, 2015

Eurasian Watermilfoil (*Myriophyllum spicatum*)

The Problem

Forms dense mats in summer

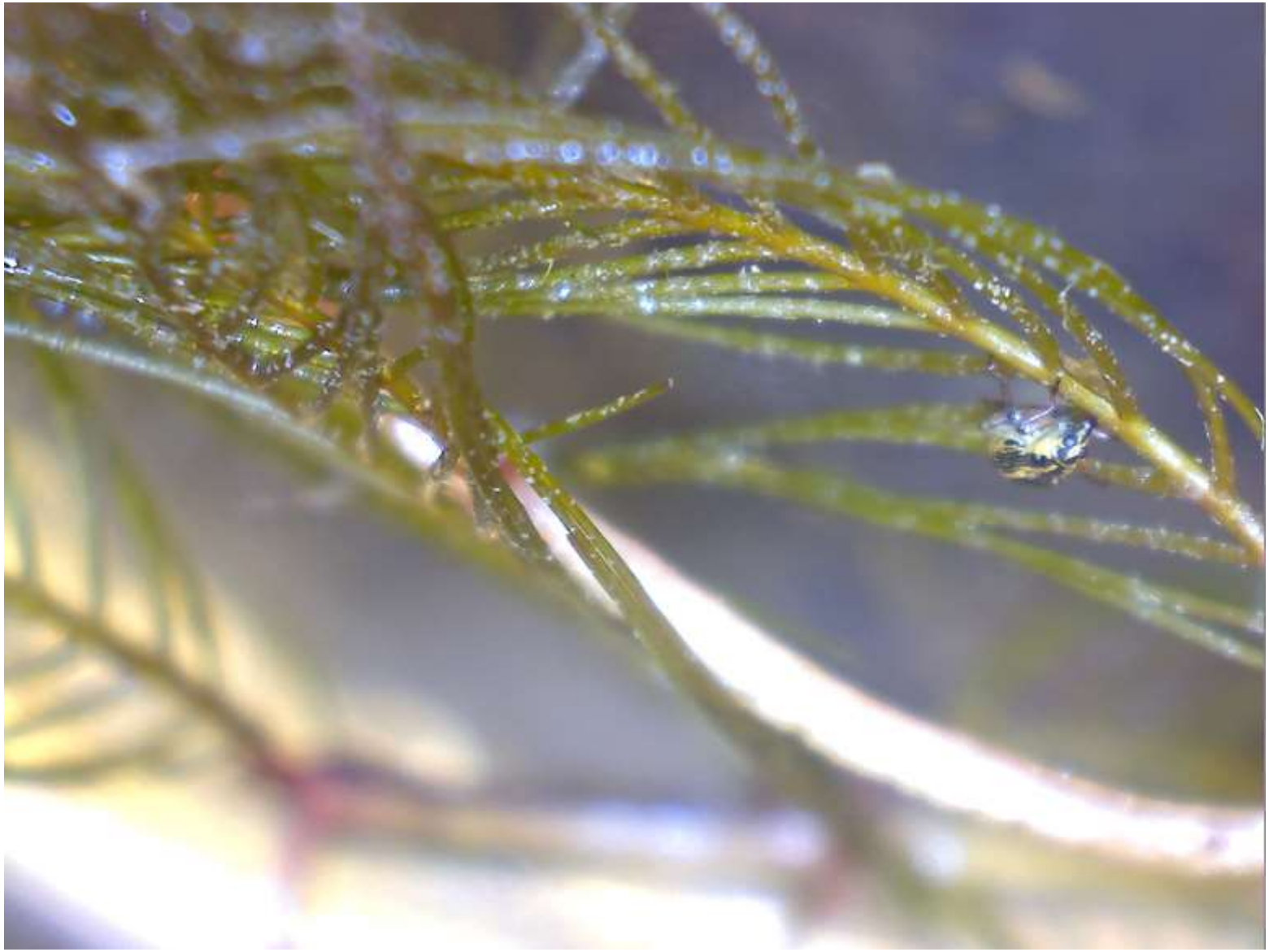
Dominates Native Plants

Fragments and spreads quickly

Three Solutions

- Mechanical Removal
- Chemical Treatment
- Biological Control (Weevils)

Milfoil Weevils (*Eurychiopsis lecontei)*



White stripe, climbing legs

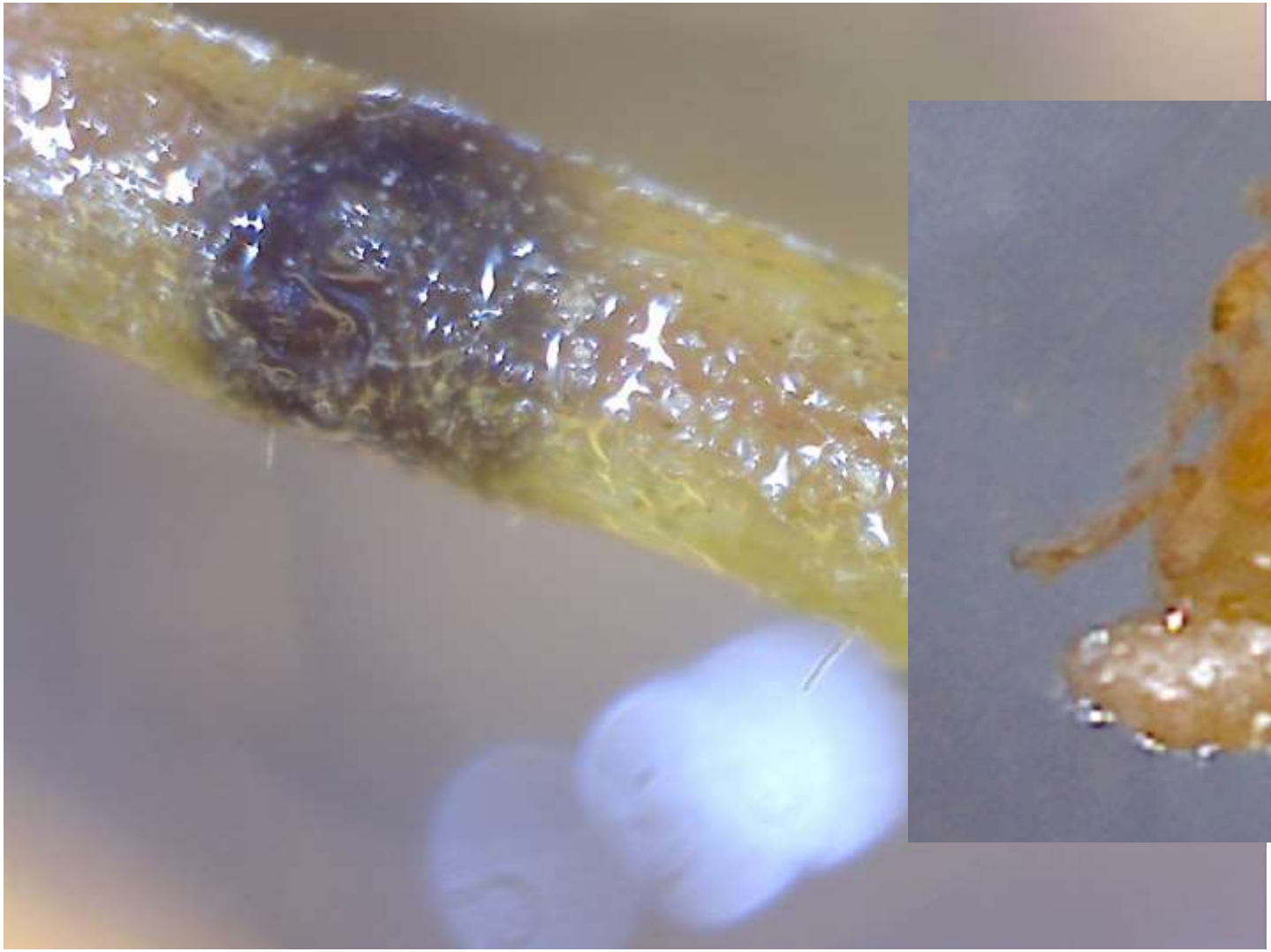
Elongated Nose

Lay eggs at the tips of milfoil

Don’t lay eggs on tips that have flowered

Larvae mine the stem causing damage

Pupate inside the stem



Loss of buoyancy, tips don’t flower

Adults also feed on milfoil

Weevil stocking in Lake Joanis

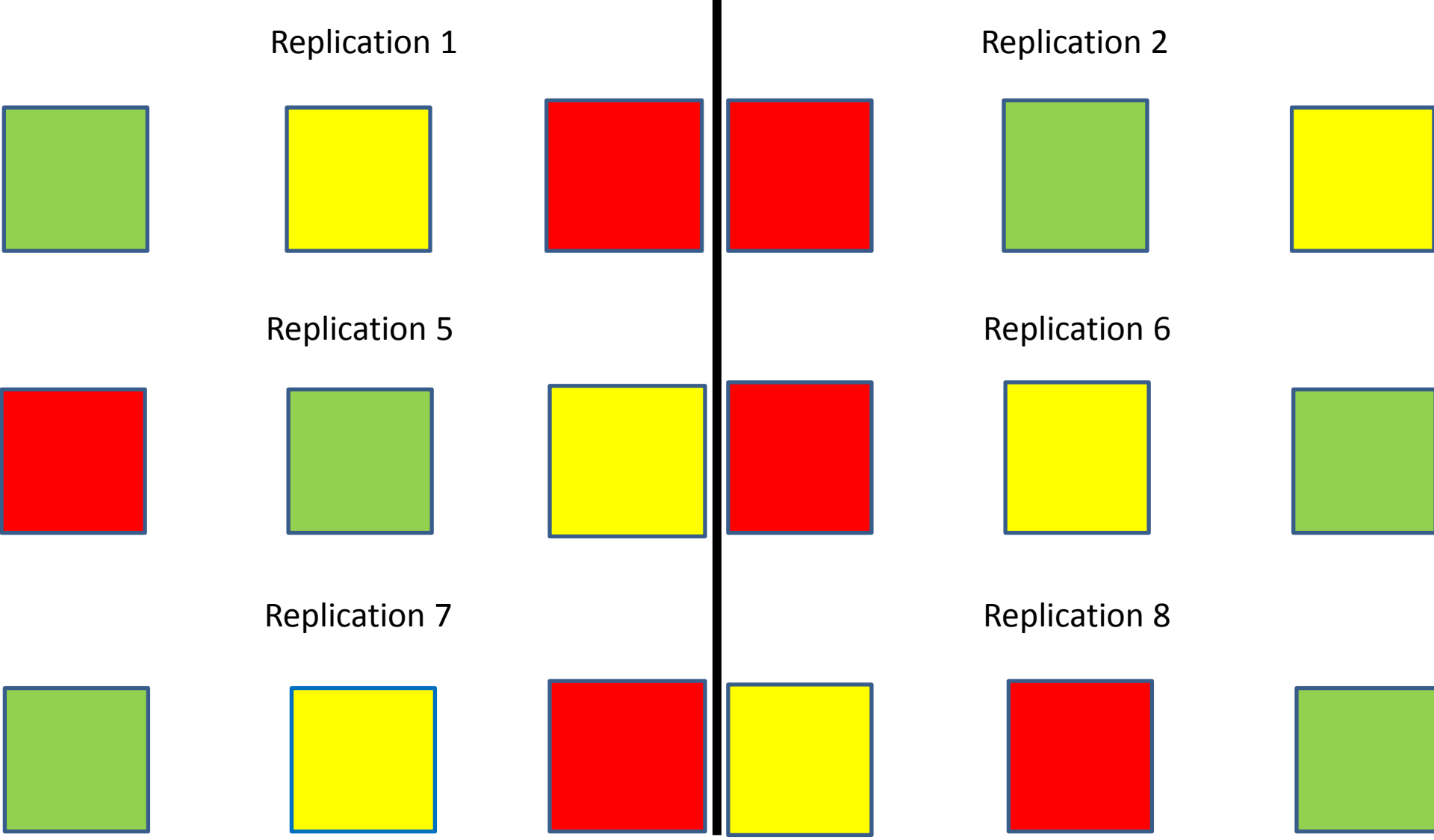
- Present but rare before stocking
- 4000 stocked in 2009
- 7000 stocked in 2010
- Rate of stocking much higher than usual
- No significant increase in the weevil population

Where did they go?

Were they eaten by Bluegills?

Photo courtesy of Agnes Milowka

Methods

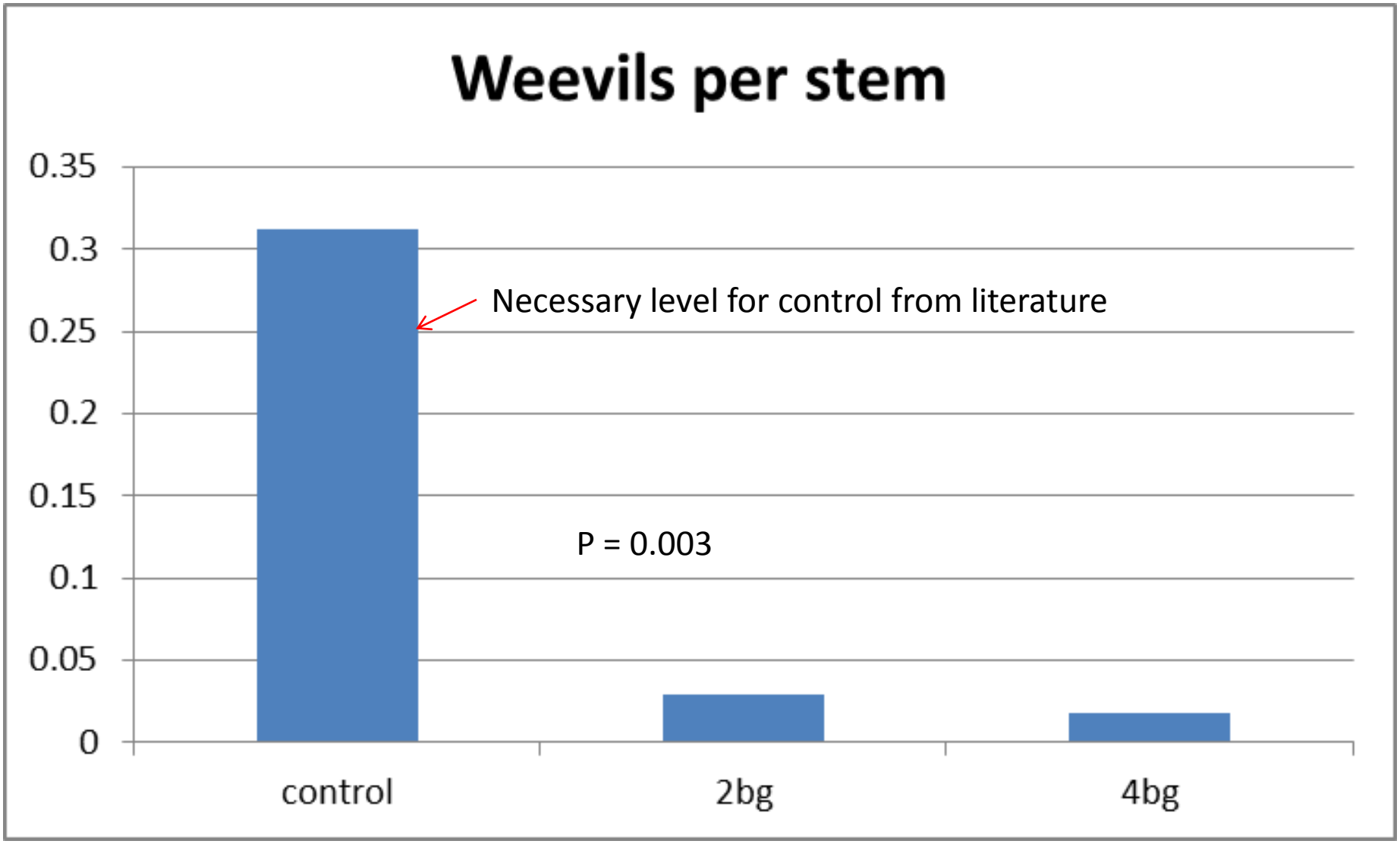

Replication 1
Replication 2
Replication 5
Replication 6
Replication 7
Replication 8
CONTROL
2 Bluegill
4 Bluegill
Treatments randomized in each replicate

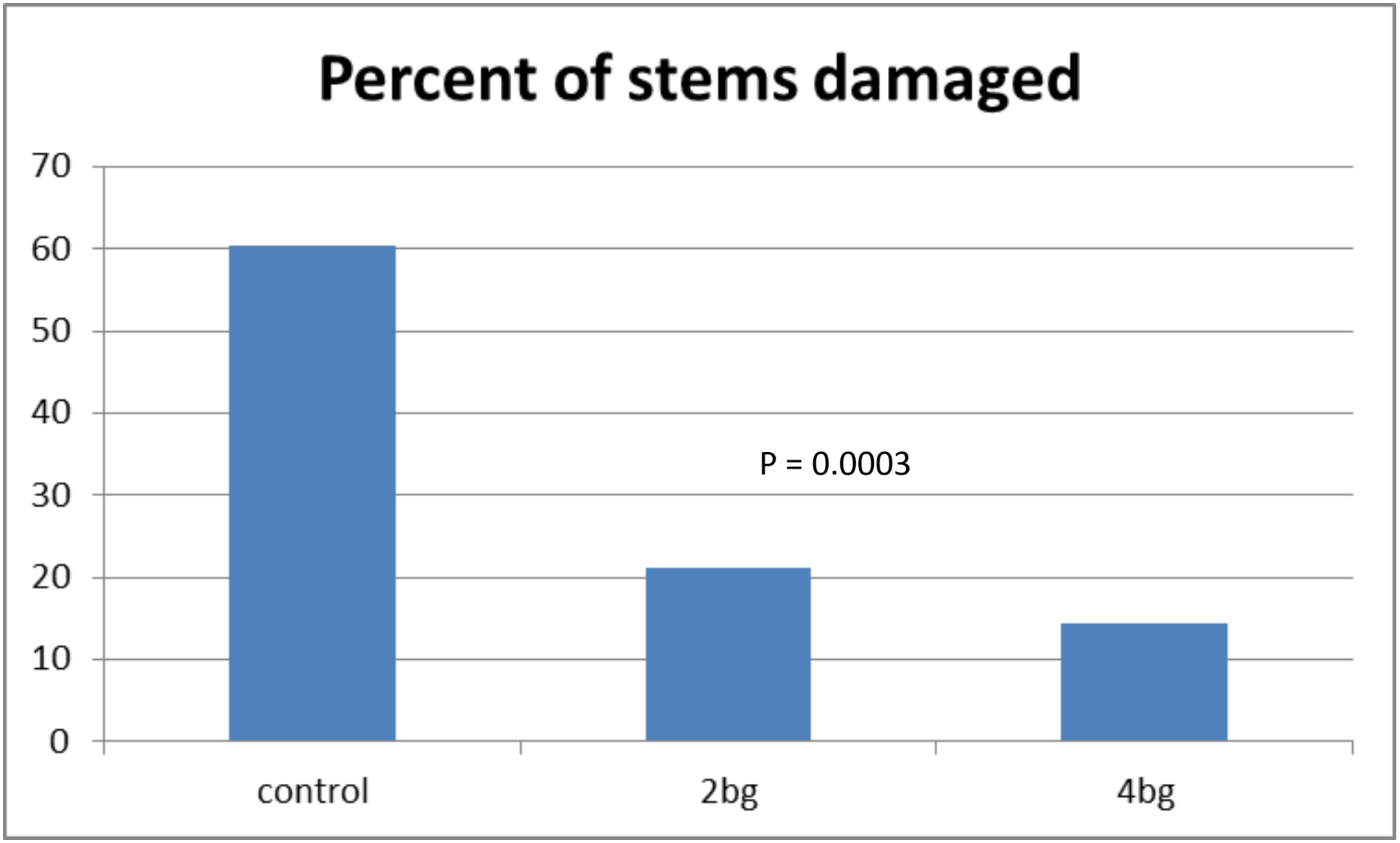
Angle iron cages (3ft x3ft) with 1/8 inch plastic mesh placed on milfoil beds

All fish removed

Cages stocked with weevils
10 eggs and 5 adults per cage
Bluegills (6-8 cm) then stocked at zero, two or four per cage

After six weeks, all milfoil removed from cages
Over 2,000 stems sorted under magnification
ANOVA for cage data


Weevils per stem
0.35
0.3
0.25
0.2
0.15
0.1
0.05
0
Necessary level for control from literature
P = 0.003
control
2bg
4bg


Percent of stems damaged
70
60
50
40
30
20
10
0
P = 0.0003
control
2bg
4bg

Conclusions

- Bluegill prey on Weevils
- Bluegill density should be considered before Weevil stocking
- Similar cages may help protect Weevils from predation during stocking

Thanks

- Wisconsin DNR AIS funding – Patrick Sorge
- Amy Thorstenson – Golden Sands RC&D
- Paul Skawinski – WI CLMN
- Jack Bushman, Steve Clark, Sam Johnson, Michael Regin – Field assistants