



WSU Long Beach Knotweed Research: 2005 to 2010



Goal:

- 1) Assess various alternative herbicides and timings**
- 2) Develop a treatment that allows for applications when plants are young and not too big.**

Treatments

Dormant basal buds

Aminopyralid - Milestone

Triclopyr - Renovate

Early growing season

Imazapyr - Habitat

Glyphosate - Aquamaster

Aminopyralid - Milestone

Triclopyr - Renovate

Anthesis —

Imazapyr - Habitat

Glyphosate - Aquamaster

Imazamox — Clearcast

Aminopyralid - Milestone

Triclopyr - Renovate



Treatments

Dormant basal buds

Aminopyralid - Milestone

Triclopyr - Renovate

Early growing season

Imazapyr - Habitat

Glyphosate - Aquamaster

Aminopyralid – Milestone (2nd place)

Triclopyr - Renovate

Anthesis –

Imazapyr – Habitat (gold standard)

Glyphosate - Aquamaster

Imazamox – Clearcast

Aminopyralid - Milestone

Triclopyr - Renovate





Imazapyr – early summer to fall (with or without glyphosate) provided most consistent efficacy.

Spraying of large canopy is problematic, as is dealing with weak regrowth.

Imazapyr works, but what do you do about the occasional regrowth?



Treatment when plants are reasonably sized would be so much easier!



- **Milestone @ 7 to 14 oz/ac with NIS early to late May when main shoots >3-5' and side shoots are @ >0.5' @ 100 gpa**
 - Provides 80 to 95% same season knockdown
 - Great treatment for creating spray paths in thick meadows of knotweed.
 - Good combination treatment with mid to late season imazapyr
 - Provides 50 to 90% efficacy year after treatment
 - Not stand alone control without retreatment (except for Japanese Knotweed).

- **Milestone**

- **Current label**

- Treat up water edge, 7 to 14 oz/ac

- **Proposed Label**

- Same as above, exception range of knotweed species on label



Early Milestone – treated May 2009 (August 2009)

Early Milestone – treated May 2009 (August 2009)



Early Milestone – treated May 2009 (April 2010)



Early Milestone – treated May 2009 (April 2010)



Early Milestone – treated May 2009 (April 2010)



Early Milestone – treated May 2009 (April 2010)



Early Milestone – treated May 2009 (April 2010)





Early Milestone – treated May 2009 (April 2010)



Early Milestone – treated May 2009 (April 2010)



2009 treatments:

Rate, Spray Volume, Timings & Herbicide combination

- Only have spring 2010 assessment
- No major consistent treatment differences
 - (7 vs. 14 oz)
 - (mid – May vs. Early June)
 - (50 vs. 100 vs. 150 gpa)

How tough is knotweed?

- Salt water survival challenge
 - 4-6" root/stem nodes collected in January 2010, 13 replications per treatment
 - Exposed to full emersion in Willapa Bay for 0, 2, 4 and 6 weeks followed by 2 weeks on salt marsh @ ~ 7' tidal elevation (two tidal flushes /day)
 - Greenhouse – 2 months





control

2 weeks floating
in ~ 25 ppt bay
water + 2 weeks
@ 7' tidal salt
marsh

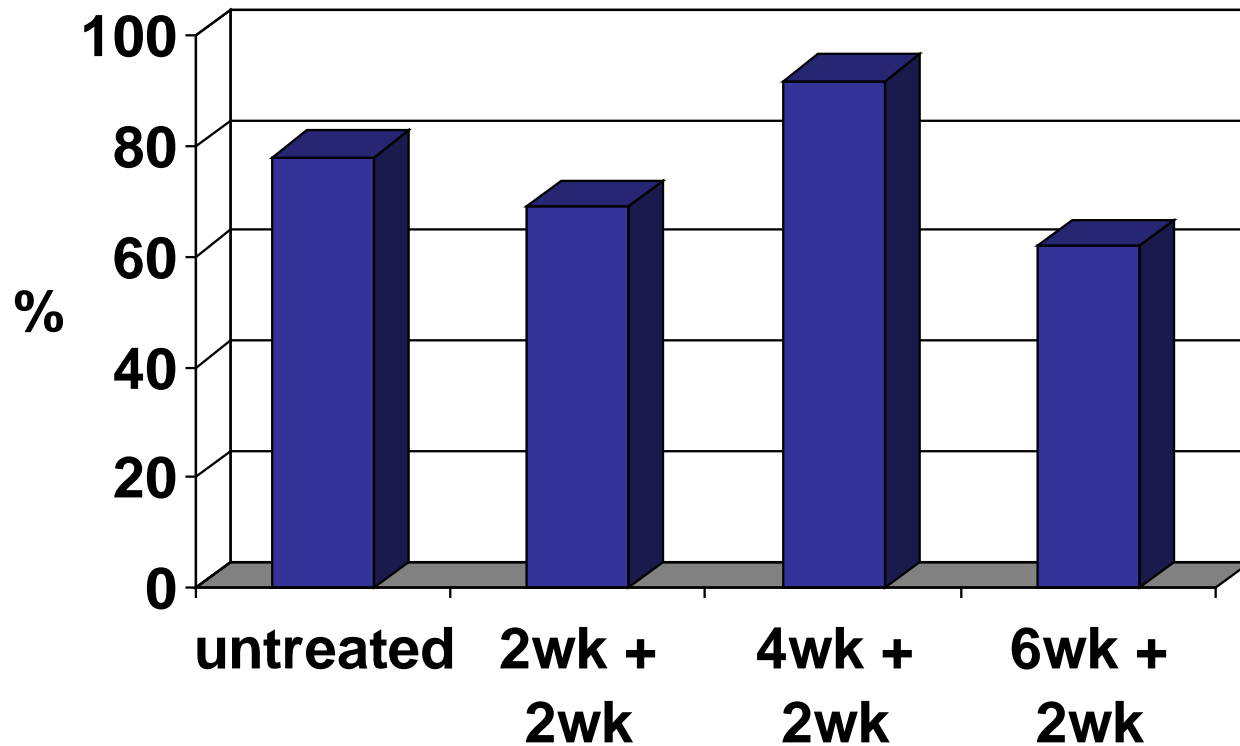
4 weeks floating
in ~ 25 ppt bay
water + 2 weeks
7' tidal salt
marsh

6 weeks floating
in ~ 25 ppt bay
water + 2 weeks
7' tidal salt
marsh



Salt water survival challenge

% survival (salt water challenge)



How tough?

- Section of knotweed washed in estuaries during winter floods easily survive at least 6 weeks total emersion followed by 2 weeks with tidal emersion.
- Infestation or re-infestation of lower reaches of tidal influenced waters or islands is very likely.

