

# Persistence of Japanese Knotweed

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## Project Overview

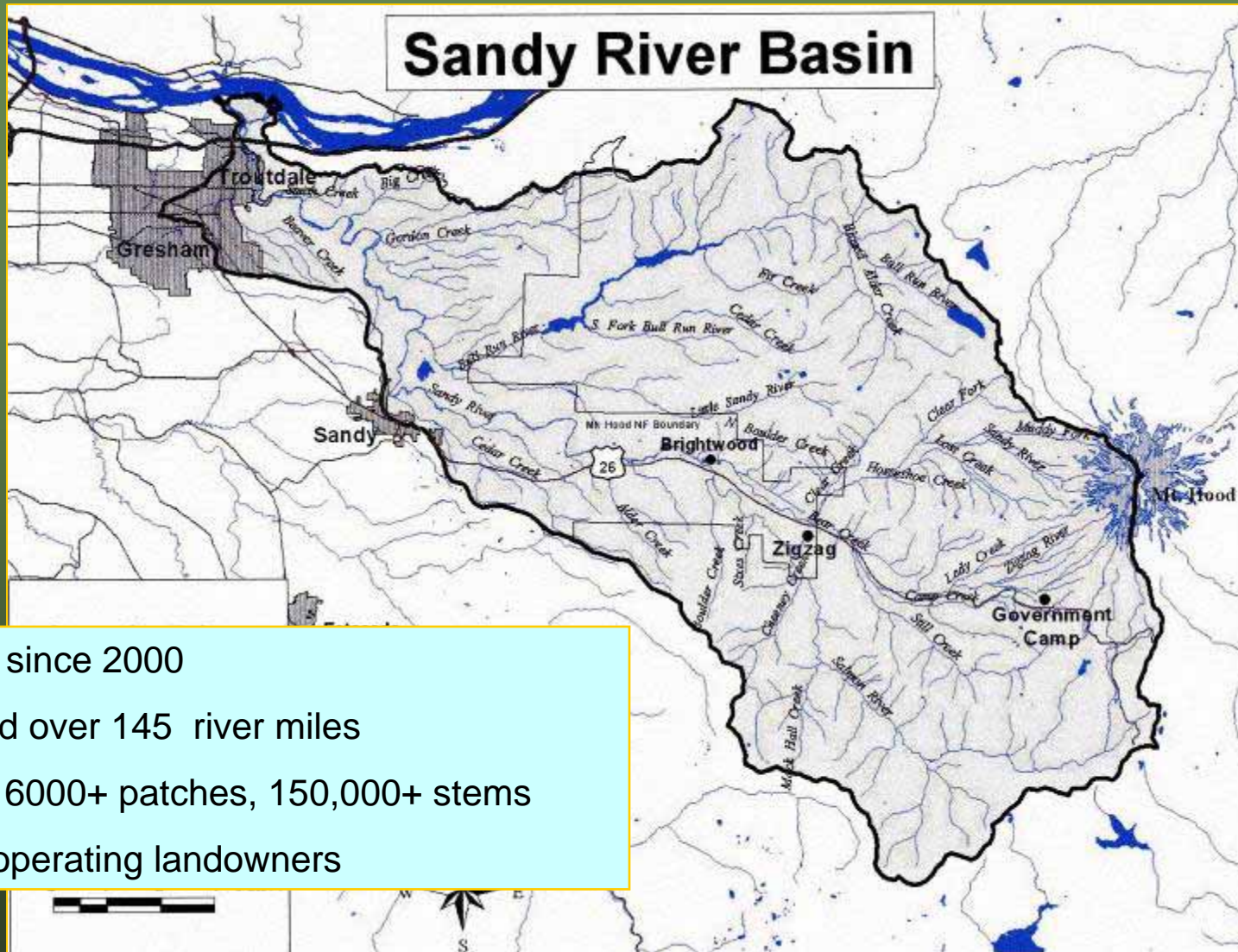
- Knotweed Control Experiments
- Landscape Level Control

## Control Difficulties

- Epinastic Growth
- Regeneration of Knotweed

## New Treatment Protocol

# Sandy River Riparian Habitat Projection Project



- working since 2000
- surveyed over 145 river miles
- treated 6000+ patches, 150,000+ stems
- 500 cooperating landowners

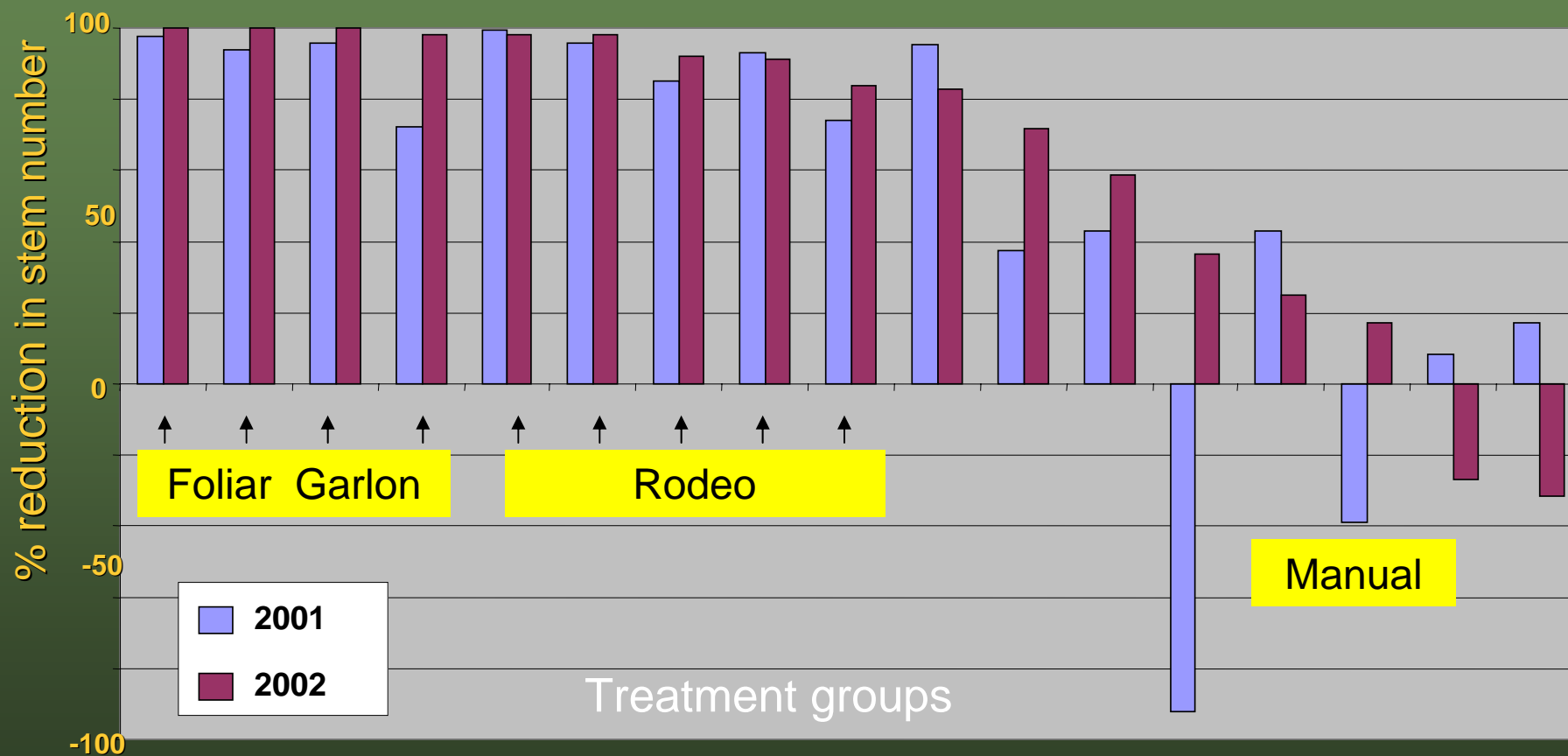
### Controlled experiment:

- 2 herbicides
  - glyphosate
  - triclopyr
- 3 control techniques
  - foliar
  - stem-wick
  - manual-cut
- varied # & timing of applications



# Early Experiment: Summarized Control Results

## Knotweed response to 17 Treatments: May 2000 - June 2002



### Controlled experiment:

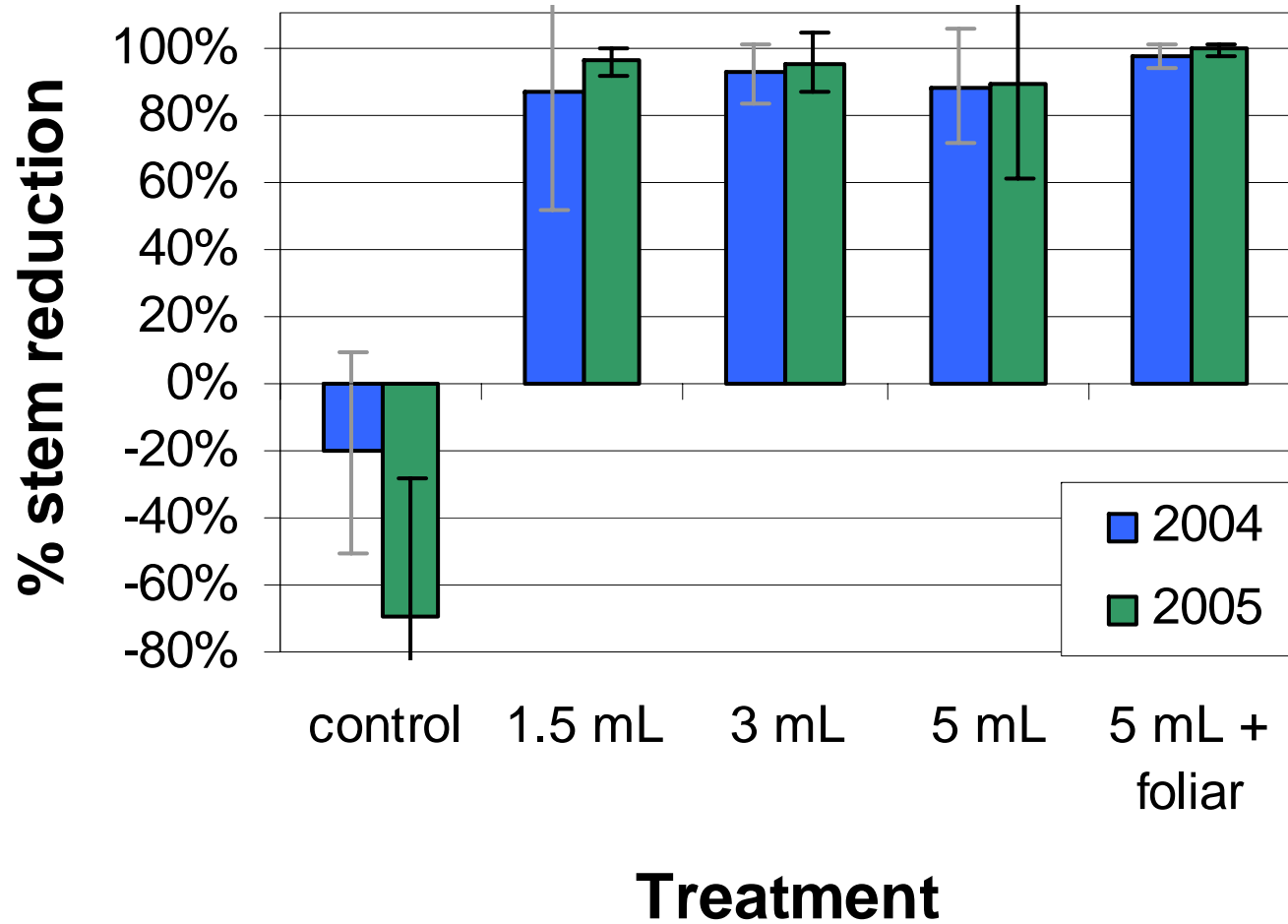
- tested 1.5ml, 3ml, 5ml, 5ml + spray and control
- 6 patches per treatment
- tested July & Sept. application dates



## Research questions

- How effective is the injection treatment at reducing stem number?
- How much glyphosate per stem is needed for maximum control?
- Is supplemental spray required to treat stems too small to inject?
- Do late-summer treatments work as well as mid-summer treatments?
- Is it necessary to inject every stem?

# Stem reduction after 1 & 2 years





## 2003 data set:

- Compared 3ml+spray vs. 5ml+spray
- 46 sites treated in 2003



before treatment

## 2004 data set:

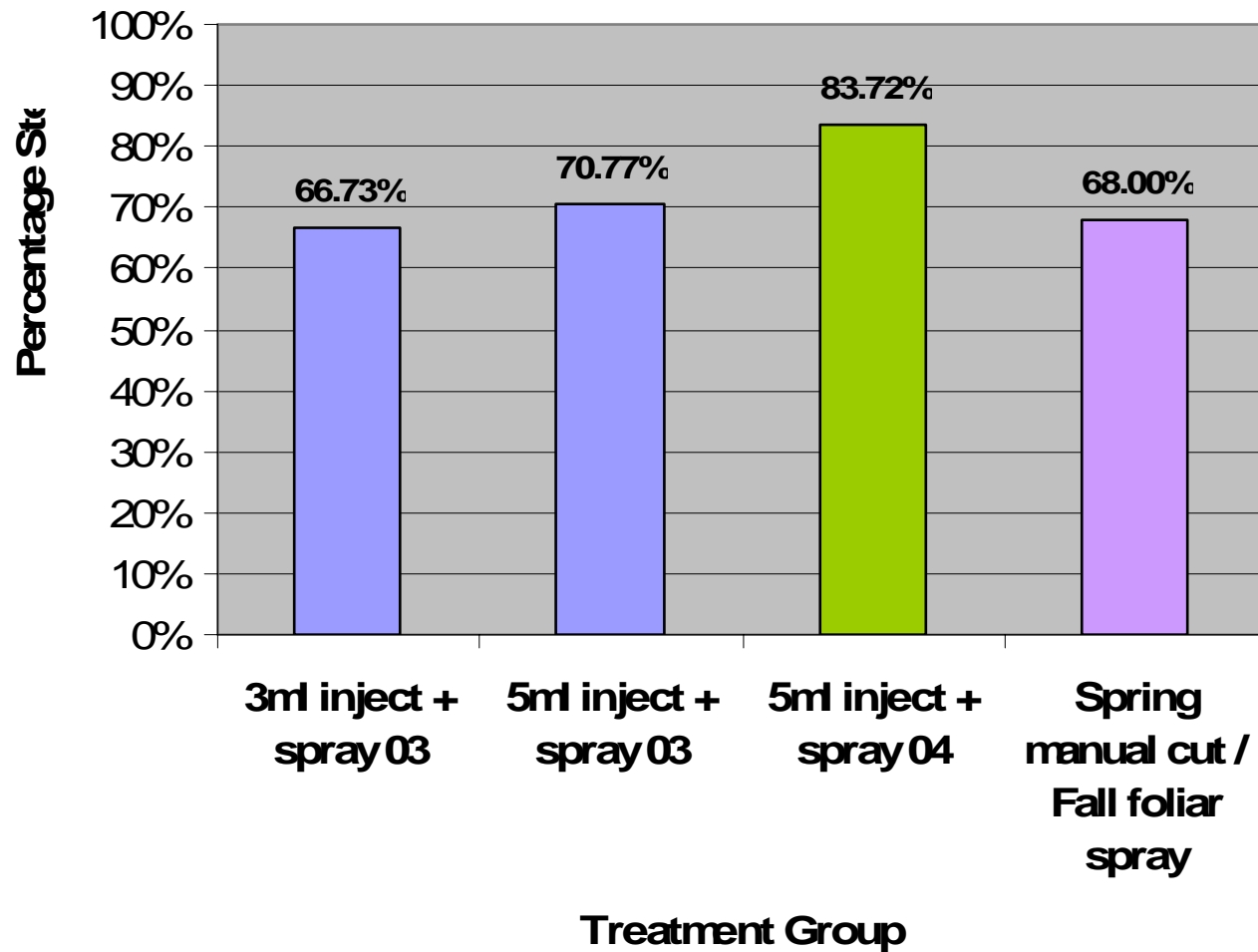
- 5ml+spray
- 117 sites treated in 2004

1 to many patches per site

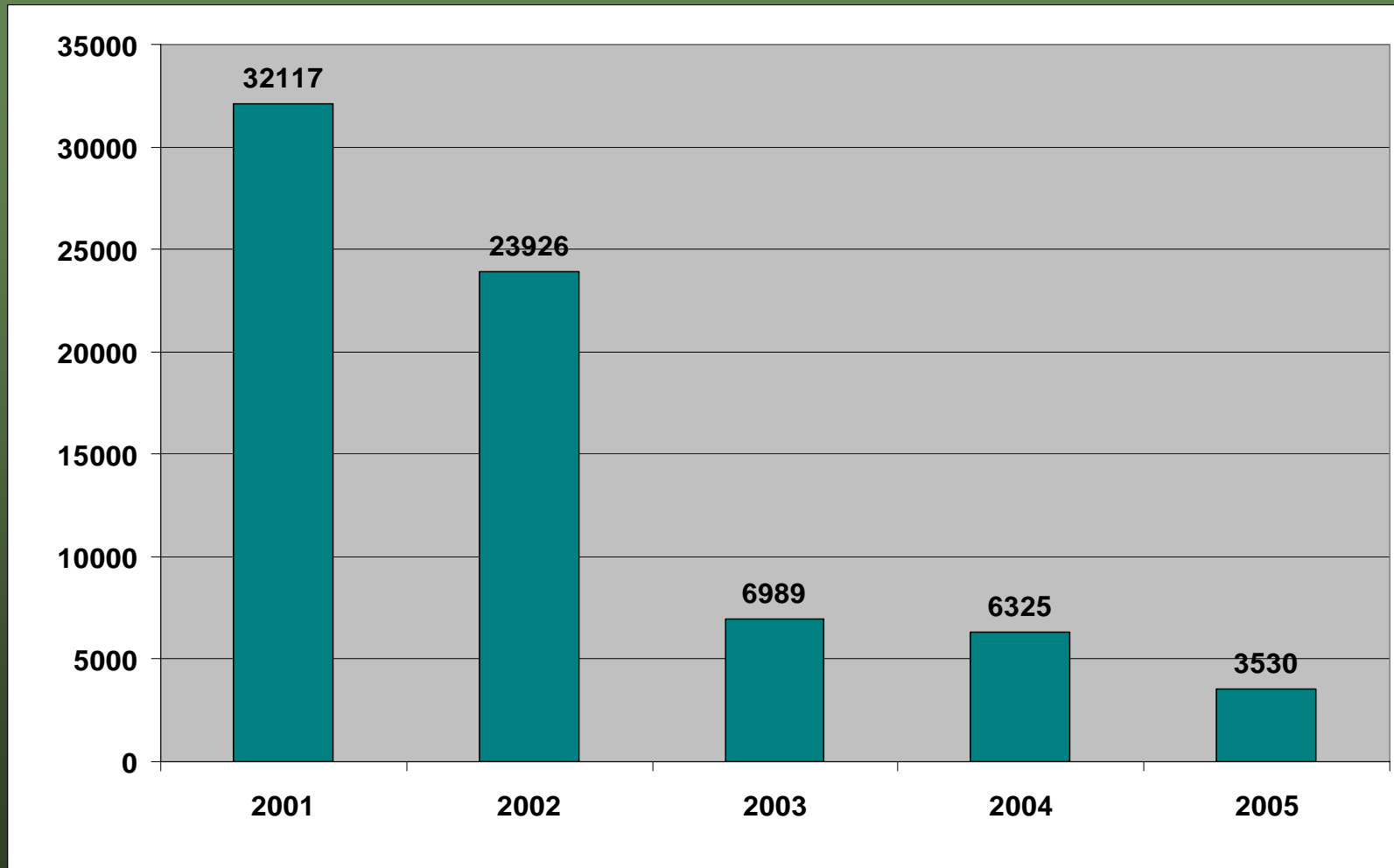


1 yr after 5ml +spray treatment

## Stem reduction after 1 field season, comparison of landscape treatments



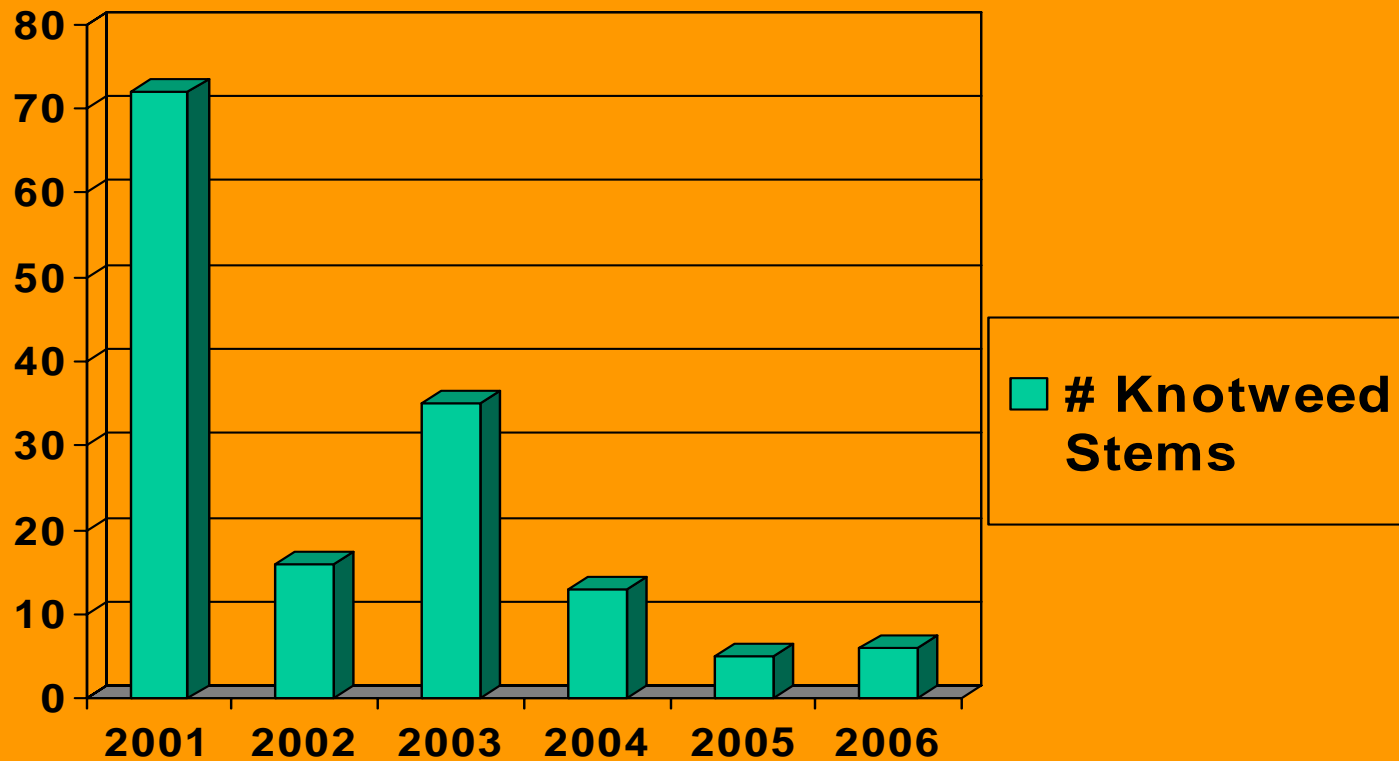
## Total stem count for 233 Sandy River sites



# Epinastic Growth



## History of Site 18-27



# Epinastic Growth on an Old Knotweed Crown



## Excavation of Knotweed Rhizome at Site 18-27



## Healthy Roots, Very Few Shoots





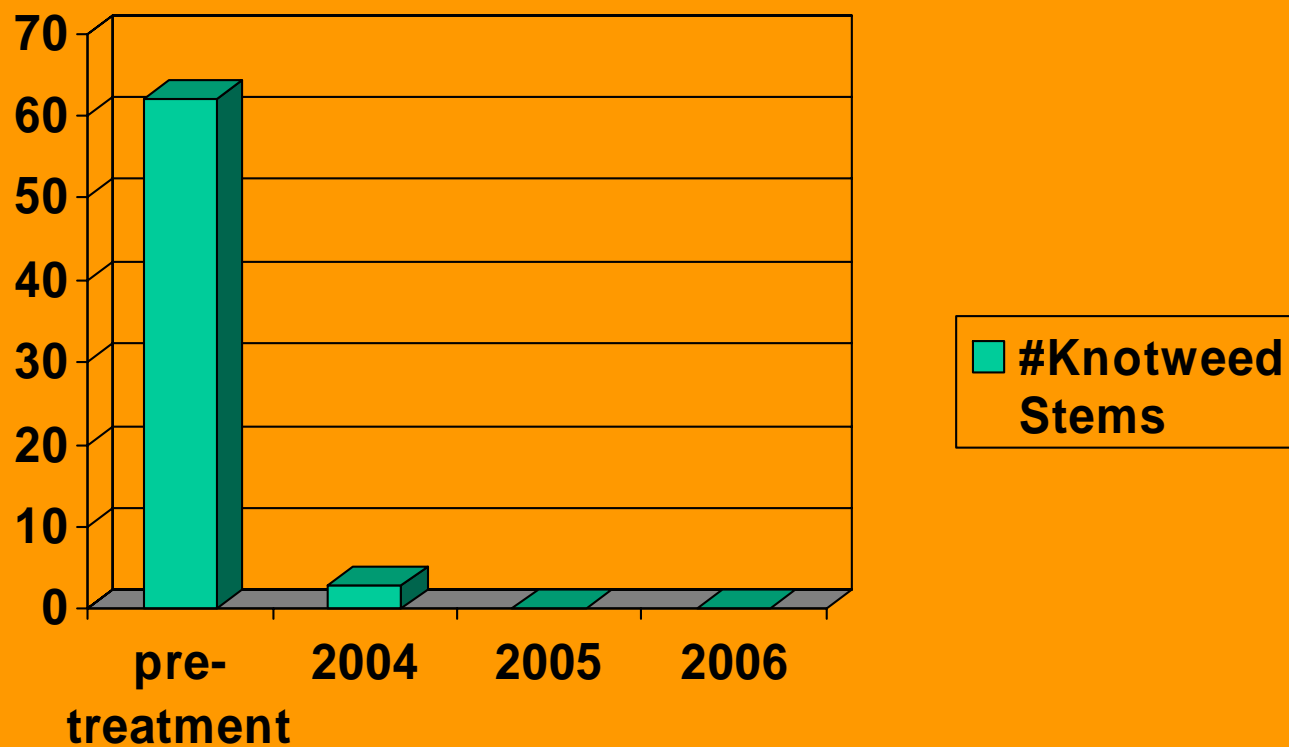








## Summary Stem Count For Controlled Injection Experiment Phase 3, Patch 30



## Phase 3, Patch 30 Pretreatment



## Phase 3, Patch 30 1 year post-treatment



## Phase 3, Patch 30 2 years post-treatment





## Phase 3, Patch 30 3 years after treatment

- 0 new stems
- Bulky upper root crown tissue appears dead

**Unfortunately...**

- Lower crown and rhizomes have ample living tissue

## Knotweed Before Treatment



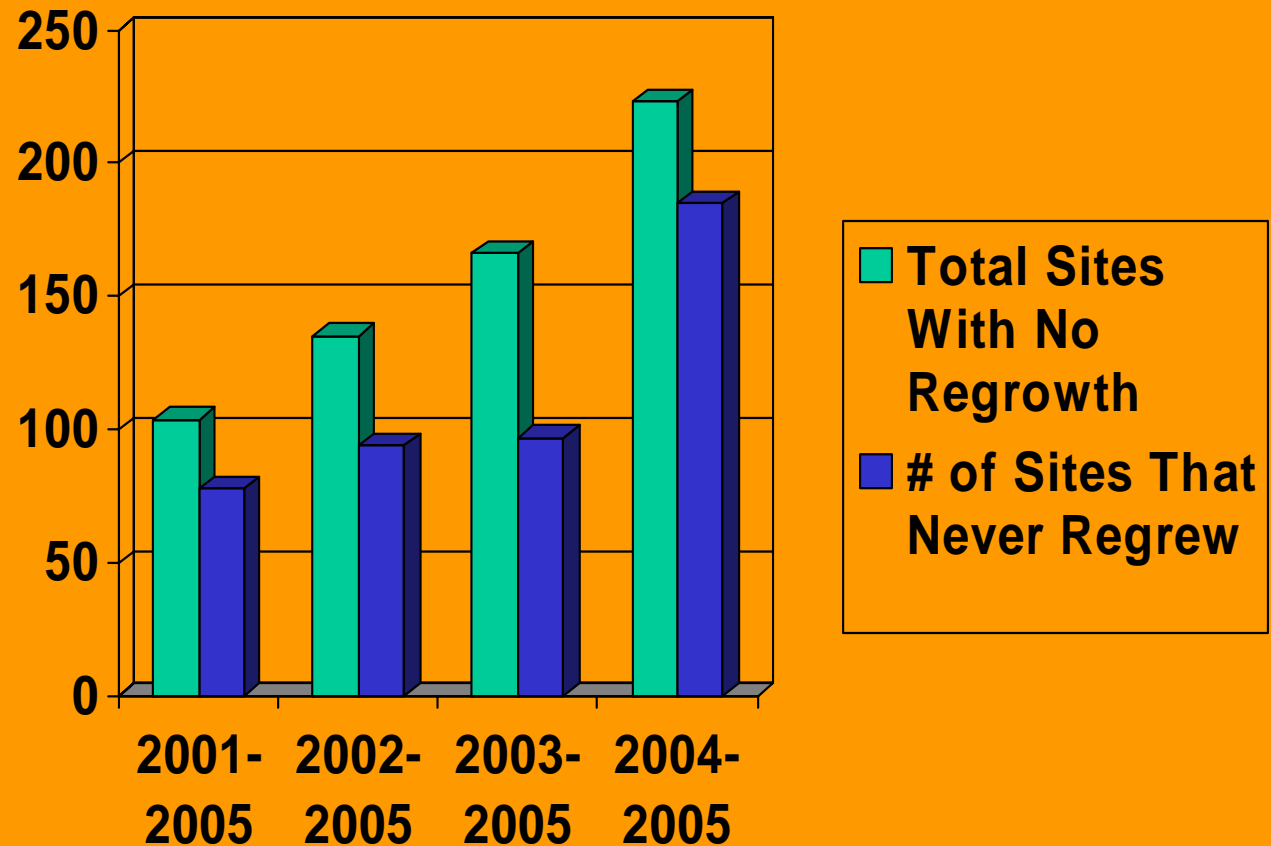
## Knotweed After Treatment

**Note large root  
area and small  
shoot surface!**



# Evidence of Knotweed Regeneration

71% of “No New Stems” sites never regrow



# Treatment Recommendations

## **New Sites:**

- Inject all large stems with 3 or 5 ml of glyphosate
- Spray smaller stems with a mixture of 1% imazypyr and 4% glyphosate
- If time allows, return in late summer for retreatment
- Monitor for 3 years

## **Sites Already Being Treated:**

- Treat as a new site when possible
- When significant epinastic growth is present, consider NOT treating for 1 or more years or...
- Dig out root crown and all rhizomes possible in Spring
- Return for late season spray
- Monitor for 3 years

Questions?

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[tncweeds.ucdavis.edu](http://tncweeds.ucdavis.edu):  
includes best management practices document