Flowering Rush Control phone Meeting
March 1, 2012
Summary Notes - Compiled by J. Parsons

In Attendance:
Angela Poovey – USACE, MS
Dick Hecock – Pelican River Watershed Dist (for Tera Guetter)
Greg Haubrich – WA State Dept Ag
Jenifer Parsons - WA Dept Ecology
Jennifer Andreas – Washington SU
John Madsen – MS State
John Skogerboe – USACE
Karen Fleming – Archibald Lake WI
Kathy Hamel – WA Dept Ecology
Kim Patten – Washington SU
Laurel Baldwin – Whatcom Co weed coordinator, WA
Lizbeth Seebacher – WA Dept Ecology
Peter Rice – U MT
Ryan Wersal – MS State
Tom Woolf – Idaho Dept Ag
Wendy DesCamp – WA Noxious Weed Board
Yvette Christianson, Craig Davidson (?), Tom Suerth – Minnehaha Cr Watershed Dist

Discussion of research done so far:

Angela Poovey –
- Ryan Thum’s lab looked at ploidy of flowering rush from ID and MN, and found they were both
  triploid and also genetically identical
- In addition to the two studies described on the spreadsheet they have done two additional
  studies that have not been published yet.
  - Those studies also used plants from MN and ID
  - Looked at endotheall, flumioxazin, 2,4-D, triclopyr, 2,4-D+triclopyr (liquid),
    endotheall+triclopyr and flumioxazin+triclopyr at 24 and 48 hour exposure.
  - Had the same results as reported in the table from endotheall and flumioxazin (significant
    shoot and root reduction >70% for both MN and ID plants). 2,4-D amine (4.0) +
    Triclopyr (1.24) did reduced MN roots. No other products significantly reduced ID
    shoots and roots >70% other than endotheall and flumioxazin (and their triclopyr
    combinations). No rhizome reduction.
  - Looked at ALS inhibitors – fluridone (10 & 20 ppb), imazamox (50 & 100 ppb) and
    bispyribic sodium (20 & 40 ppb) with 5 weeks exposure on 5 week old plants. No
    significant reduction in leaf or root/rhizome.
John Skogerboe –
- Plots in the Pelican River Watershed District lakes, MN
  - Emergent growth they are getting the best results with Imazapyr
  - Submersed growth - Did dye studies to determine exposure time
    ▪ 1 acre plots, water relatively shallow, dye and herbicide applied below surface at plant level
    ▪ Found wind to be critical to exposure time
    ▪ If wind blew toward shore, endothall plots had ~12 hours exposure, diquat about 4 hours
    ▪ If wind blew another direction (?) – endothall plots ~3–6 hours exposure, diquat ~1-2 hours
    ▪ All provided short exposure times for good efficacy
- Archibald Lake, WI – tried granular endothall (Aquathol super K) and that combined with diquat. Did not get good exposure with either product, no reduction in plant growth

John Madsen
- Discussed what is summarized on the spreadsheet, emphasized that the field trial results in Lake Pend Oreille had high variability in results which affected significance determination of both above and below ground biomass
- Field trials in MN –
  - In 2010 had short exposure times and no effect from 3 treatments (plots treated once, twice, or three times with 3 ppm of Aquathol K (endothall))
  - In 2011 –
    ▪ 10 acre plots treated twice with endothall, got mixed results, some leaf reduction, no rhizome reduction
    ▪ 1 acre plots treated twice with diquat, got good shoot control, no rhizome reduction

Ryan Wersal
- Bareground mesocosm trials at Mississippi State University were conducted in conjunction with bareground trials in Lake Pend Oreille Idaho. After 24 weeks only fluridone at 32 and 64 oz per acre, and triclopyr at 256 oz per acre reduced rhizome biomass when compared to untreated reference plants.

Peter Rice
- Discussed what is summarized on the spreadsheet
- Thinks that for the hydrologic regime of Flathead Lake, using Imazapyr on exposed shoots in the spring will provide good results
- From his results, the Renovate max G (granular 2,4-D and triclopyr) looks the most promising
- Other info –
  - Digging trial - with water off plants the rhizomes were dug up. Result – increased density when the water returned (likely result of rhizome fragmentation)
• Would like to try diquat or endothall followed by fluridone in a greenhouse or mesocosm study
• Have used 10 x 10 ft bottom barriers with good result so long as they are properly installed

Jenifer Parsons
• Discussed what is summarized on spreadsheet
• Also have seen best results on emergent growth with imazapyr so long as at least 2 ft of leaf is above water
• Had poor concentration and exposure time with submersed growth field trial, saw no reduction in above ground growth, did not test below ground growth

Other discussions

Discussion of granular herbicides – have found that all formulations result in herbicide concentration spikes about 1 hour after treatment

Biocontrol potential.
Jennifer Andreas has looked into potential for classical biocontrol research.
• There has been some work already, and two insects have been identified as being host specific to flowering rush.
• She has been in contact with scientists from CABI, and they can get started on additional research with as little as $40,000/year but $60,000 would provide better results.
• The question went to the group on getting a consortium of states to fund initial research for a couple of years, then look for longer term funding if biocontrol looks promising. Several names were provided as contacts in MT, ID, MN and WI.
• Jennifer is willing to take the lead at least initially, and will talk with people from the other states (with help from group members who have the contacts).

It was pointed out that finding and approving biocontrol agents is a very long term project, but at least some of the group from the northwest feel it is worth at least additional exploration to see if any insects hold promise.

Research on impacts of flowering rush –
Peter Rice, Virgil Dupuis and Eric Dibble will be looking at the relationship between flowering rush and northern pike this summer (northern pike being non-native predators that eat endangered fish in the northwest). They will also initiate studies on shifts in the invertebrate community when flowering rush invades.

More on hand removal –
In Lake Pend Oreille, ID hand removal of plants in winter/spring 2011 by a volunteer group was not effective. This year the group of volunteers will be trying monthly hand removal to see if they get better results.

Michelle Marko and John Madsen have been working on phenology, results not available yet.

Recommendations on herbicides to try in field trials –

- Try diquat and granular endothall combined
- Try barriers (curtains) run perpendicular to shore on the downwind side of the treatment area to create eddies and prevent currents from carrying herbicide out of the area as quickly, may increase exposure time.