

MOAB FIELD OFFICE 2013 UPDATE

- Invasive/Noxious Plant Treatments
- Restoration Activities
- Russian Knapweed (*Acroptilon repens*)



Invasive/Noxious Plant Treatments

⦿ Roberts Bottom

- Salt Cedar
- Russian Knapweed



⦿ Stateline

- Russian Knapweed



Restoration

◉ Roberts Bottom

- CCYC and Youth Volunteer planted Several hundred plants.
- This past year the Slime Flux infested many plants on the Colorado River.
- Many mature trees, including elms, oak, tulip, poplar, and maple, exhibit large light or dark vertical streaks on their trunks resulting from slimy liquid oozing out of a crack or wound that runs down the bark. This is called 'slime flux'. Sometimes this liquid is very abundant and foul smelling. The heartwood of an infected tree is darker in color than the surrounding wood, thus the name 'wetwood'. Although the symptoms are unsightly, little damage is done to the tree in most situations. However, if affected trees are under severe stress from other factors such as soil compaction, wetwood bacteria can move into the sapwood and cause leaf yellowing, wilting, and a branch dieback.
- Slime Flux is caused by a bacteria, commonly found in soil and water that takes up residence in young trees or gain entrance to older trees through wounds. The bacteria grow within the tree using the sap as a nutrient source..



Other Accomplishments

- Youth Core fencing at Stateline, fenced in a treatment site and two other potential sites
- Soil sampling at several treatment sites
- Installed monitoring water wells at 2 treatment sites.

Planning of Future Treatments

- Float and planning trip in May with Peter, Mike, and Daniel



Russian Knapweed

⦿ Growth Form – Perennial Forb

- ⦿ Russian knapweed is a deep-rooted perennial plant that can grow up to 3 feet tall. It reproduces by seeds and from aggressive underground stems and roots. Rosette leaves are lobed and have wavy margins; they are blue-green in color and covered with fine hairs that give the appearance of a fine white powder. The leaves are about 1 inch long, relatively narrow, linear, and arranged alternately along the stem. Each branch produces one to three flowerheads that are about $\frac{1}{4}$ inch in diameter and have papery bracts. The flowers are pink to purple. Ten to 15 seeds are produced in each flowerhead.

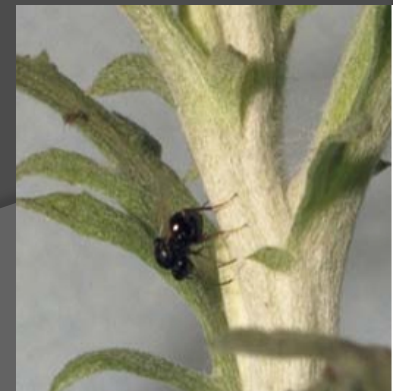


Russian Knapweed

⦿ Treatment Methods

• Biological

- Gall Nematode (released at Roberts Bottom in the late 1990's)
 - Forms galls on the knapweed plants, but it does not move on its own.
- Knapweed Midge (released along the Colorado and Green Rivers)
 - Lays its eggs on the growing tip of the plants forming galls on that growing point. It has shown to greatly reduce seed production and plant height.
- Gall Wasp (has not been released in Grand County UT)
 - Stunts the growth of Russian Knapweed.



Russian Knapweed

- Galls formed by nematodes at RB.



- Galls formed by midges



Russian Knapweed



● Treatment Methods

● Targeted Grazing

○ Sheep (dry ewes) and all classes of Goat

- Graze the during the early vegetative to flowering stage. The livestock will consume Russian knapweed reluctantly. It is unpalatable to cattle though it may be occasionally eaten. Patches should be grazed at least three times per season, allowing 8 to 10 inches of regrowth between treatments. Grazing needs to occur three or more consecutive years of grazing treatments are necessary to suppress populations. Russian knapweed is toxic to horses.
- Constraints with grazing; Russian knapweed is very bitter making it unpalatable to grazers. Grazing would need to occur multiple times a year for multiple years to achieve suppression. When the grazing treatment is finalized and no other treatments follow the Russian knapweed at the treatment site will return to a pre-grazed state. The majority of the desirable plants are more palatable and will be grazed first, multiple times a year for multiple years, this could reduce the desired vegetation.

Russian Knapweed

⦿ Treatment Methods

- Mechanical

- Recommended two mowings eight weeks apart (first at bud growth stage), suppressed Russian knapweed during that year, the weed recovers vigorously the subsequent growing season.

Russian Knapweed

○ Treatment Methods

• Chemical

- Russian knapweed is controlled by Tordon 22K (picloram), Milestone (aminopyralid), Transline (clopyralid), Curtail, (clopyralid + 2,4-D), and Telar. Russian knapweed is very susceptible to fall-applied herbicides. It displays a distinct cycle of root bud development. In late summer (August into early September) Russian knapweed begins to develop buds on its roots that will emerge to form rosettes that fall or the following spring. Root buds continue to grow throughout the winter but once rosettes emerge in spring, remaining root buds slough off and no buds occur on roots until this cycle begins again in late summer. This active root bud growth and development in fall through winter may be the reason that Russian knapweed is susceptible to herbicides applied in fall and winter.

Russian Knapweed

● Treatment Methods

In most circumstances, any of the treatment methods alone will not effectively manage Russian knapweed. However, there may be situations where desirable plants within or sowed within a Russian knapweed infestation may compete effectively with the weed if it is stressed with a single weed management technique.

Russian Knapweed

⦿ Treatment Methods

• Cultural Control

- Russian knapweed tends to form monocultures and usually eliminates other plants. Therefore, sowing desirable plant species is necessary after the weed is controlled. Smooth brome will compete with Russian knapweed. Research shows that streambank wheatgrass, thickspike wheatgrass, crested wheatgrass and Russian wildrye established after Russian knapweed was suppressed. Sod-forming perennial grasses, like streambank or thickspike wheatgrasses, help prevent reinvasion better than bunch grasses like crested wheatgrass.