

Dalmatian Toadflax (*Linaria dalmatica*) Management Success with Local Partners

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Dalmatian toadflax biology

- Perennial plant
- Up to 3 feet tall with yellow, snapdragon-like flowers
- Waxy leaves and stems, bluish green color



Dalmatian toadflax biology

- Blooms June-October
- Produces taproots
- Prefers sunny, coarse textured, well drained soil





Rosette in May



Just before flowering in mid-
June



Full flower in July



Fruit late September

Management difficulties

- Spreads vegetatively
- Seed viable up to 10 years
- Once established, plants are very competitive
- Overtakes grasslands to reduce forage production, biodiversity, wildlife habitat



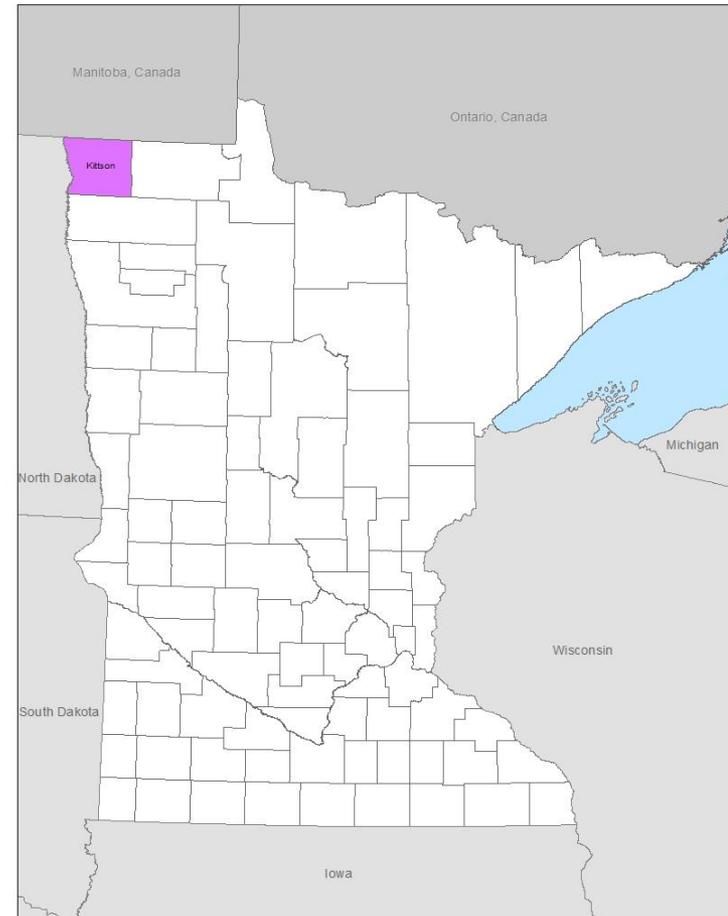
Management strategy

- Focus on prevention of seed formation and vegetative spread



Project History – Kittson Co.

- Plant discovered by employee of The Nature Conservancy in Kittson County, MN
- Reported to MDA after observed increasing spread



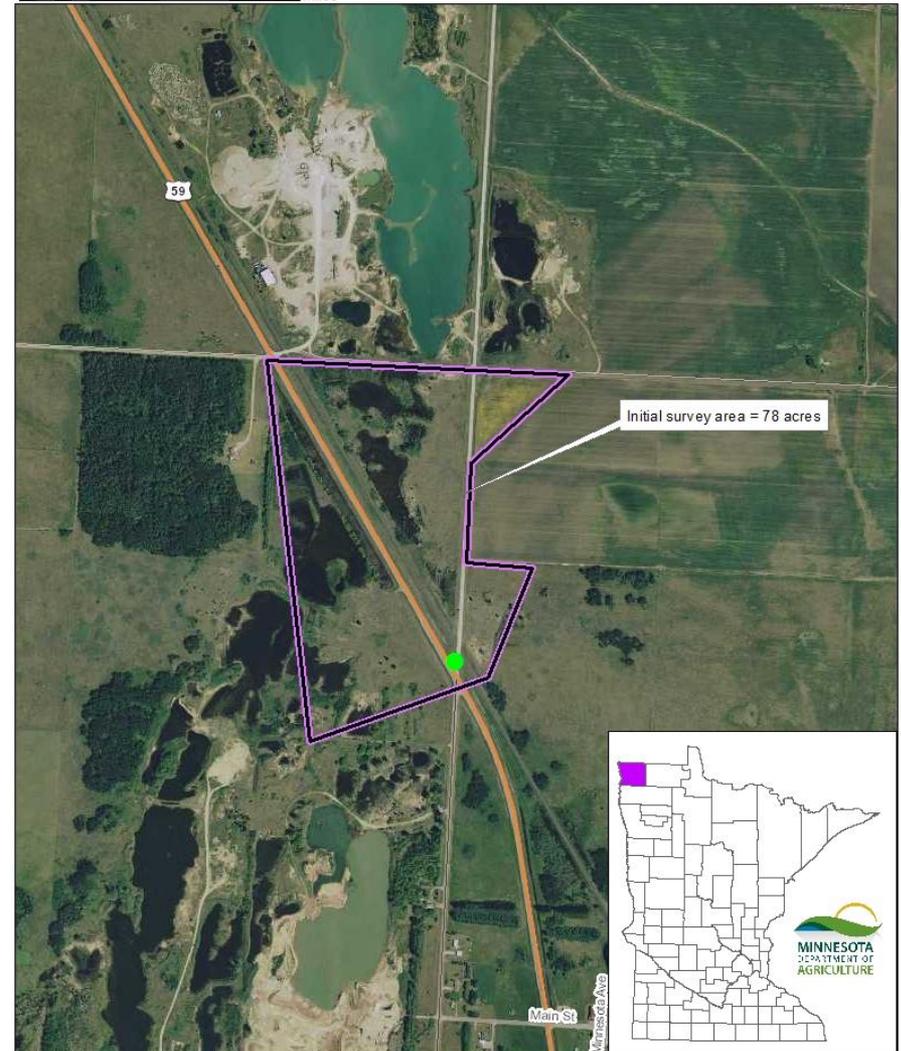
Project History – Kittson Co.

- Eradication efforts began in 2011
- Initial survey area covered 78 acres

2011 Survey Area

0 0.045 0.09 0.18 0.27 0.36 Miles

● Dalmatian toadflax infestation
□ Treatment Area



Project partners – Kittson Co.

- Minnesota Department of Agriculture (MDA)
- Minnesota Department of Transportation (MNDOT)
- The Nature Conservancy
- Kittson County
- Conservation Corps Minnesota (CCM)
- Private landowners



Early Detection and Rapid Response – Kittson Co.

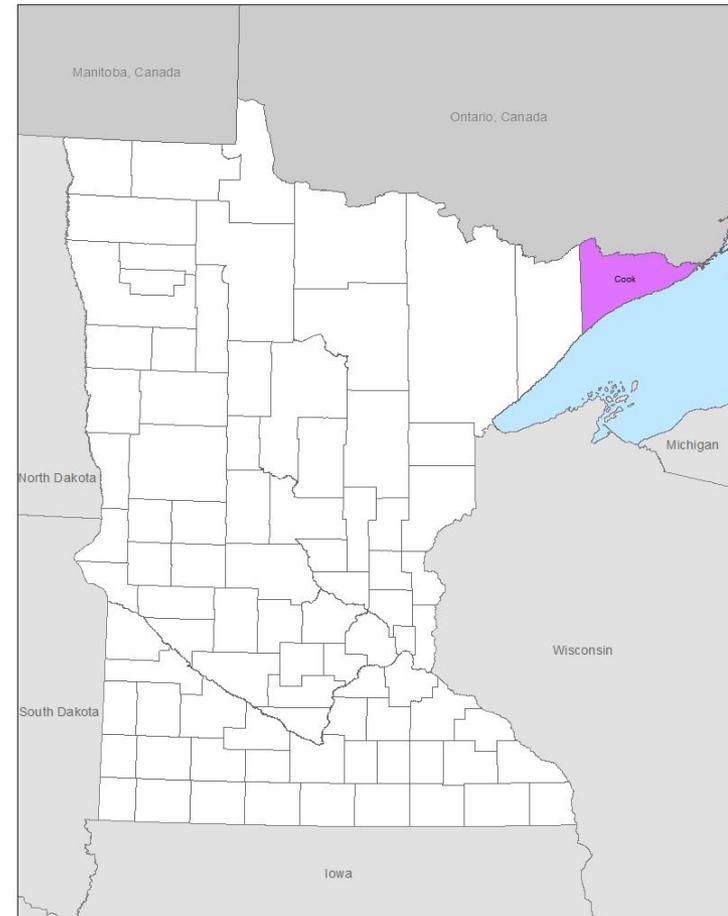
- Minnesota did not have a monoculture of Dalmatian toadflax
- Collaborations between agencies resulted in successful early detection and rapid response



Kittson County infestation. Old gravel pits, uneven terrain.

Project History – Cook Co.

- Report through EDDMapS in December 2013
- Cook County Invasive Team took the lead on scouting, treating



Early Detection and Rapid Response – Cook Co.

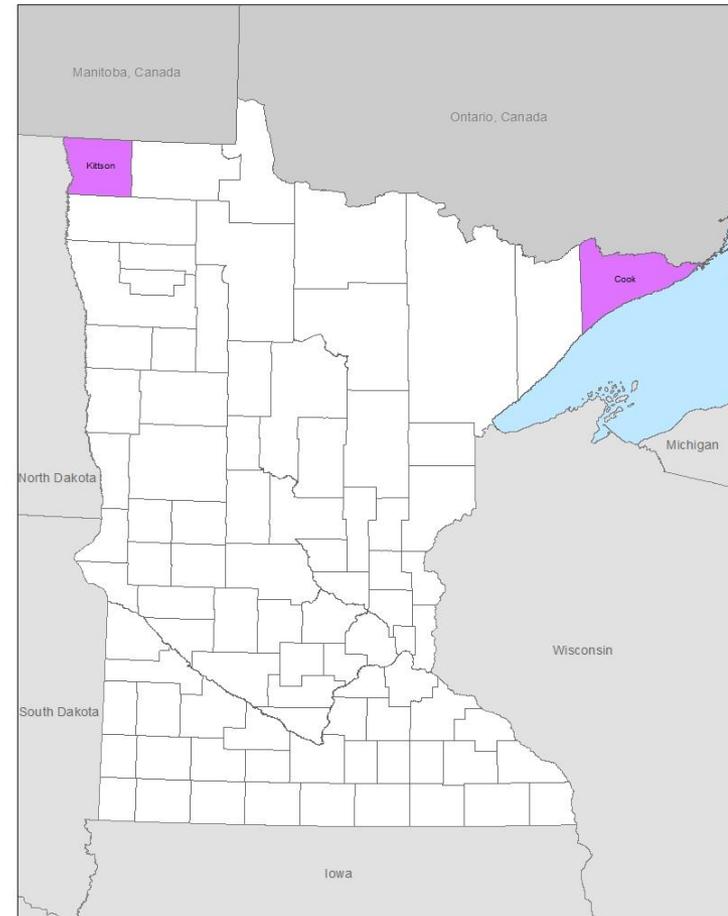
- Benefitted from Kittson Co. collaborations
- MNDOT and Cook Co. working together to eradicate



Dalmatian toadflax growing in rocky outcrops in Cook County, MN

Elimination of Target Invasive Plant Species Grant

- New program to begin eradication efforts of targeted species on Minnesota's Noxious Weed Eradicate List





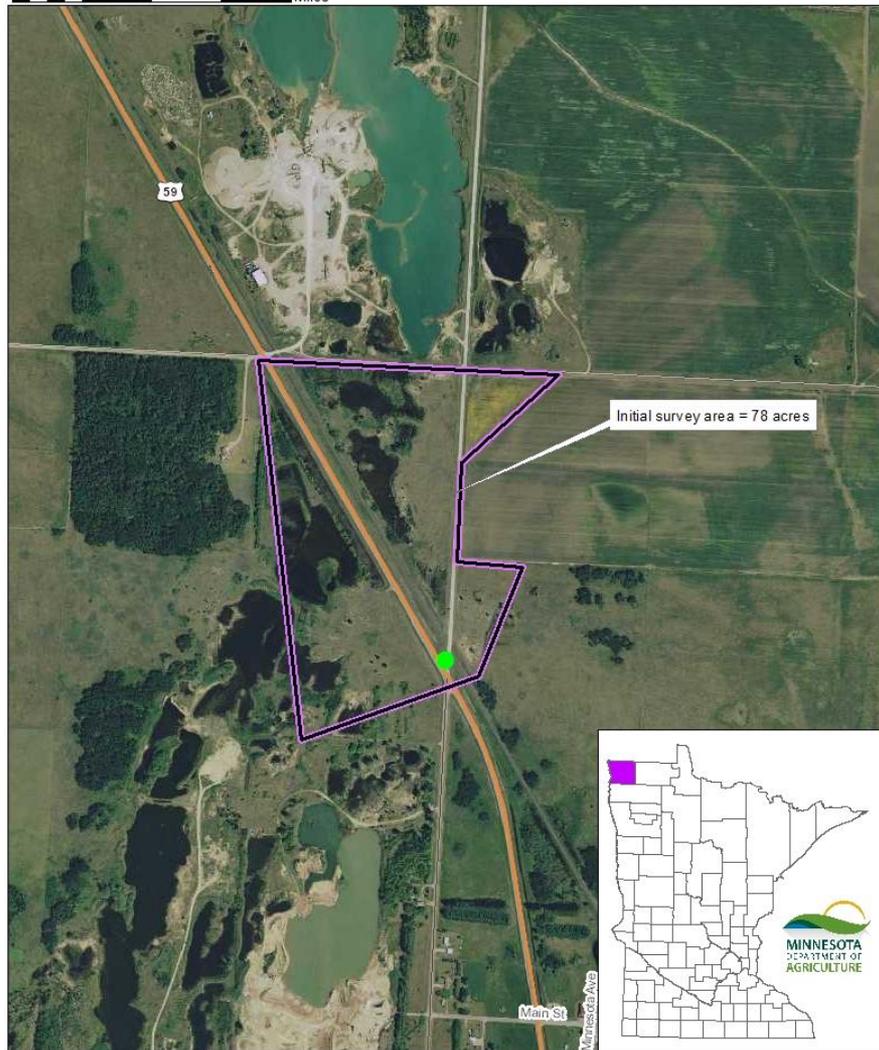
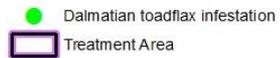
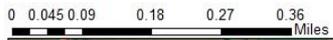
Elimination of Target Invasive Plant Species Grant

- Statewide program that allows project partners to work across public and private land
- Funded by Environment and Natural Resources Trust Fund as recommended by Legislative-Citizens Commission on Minnesota Resources

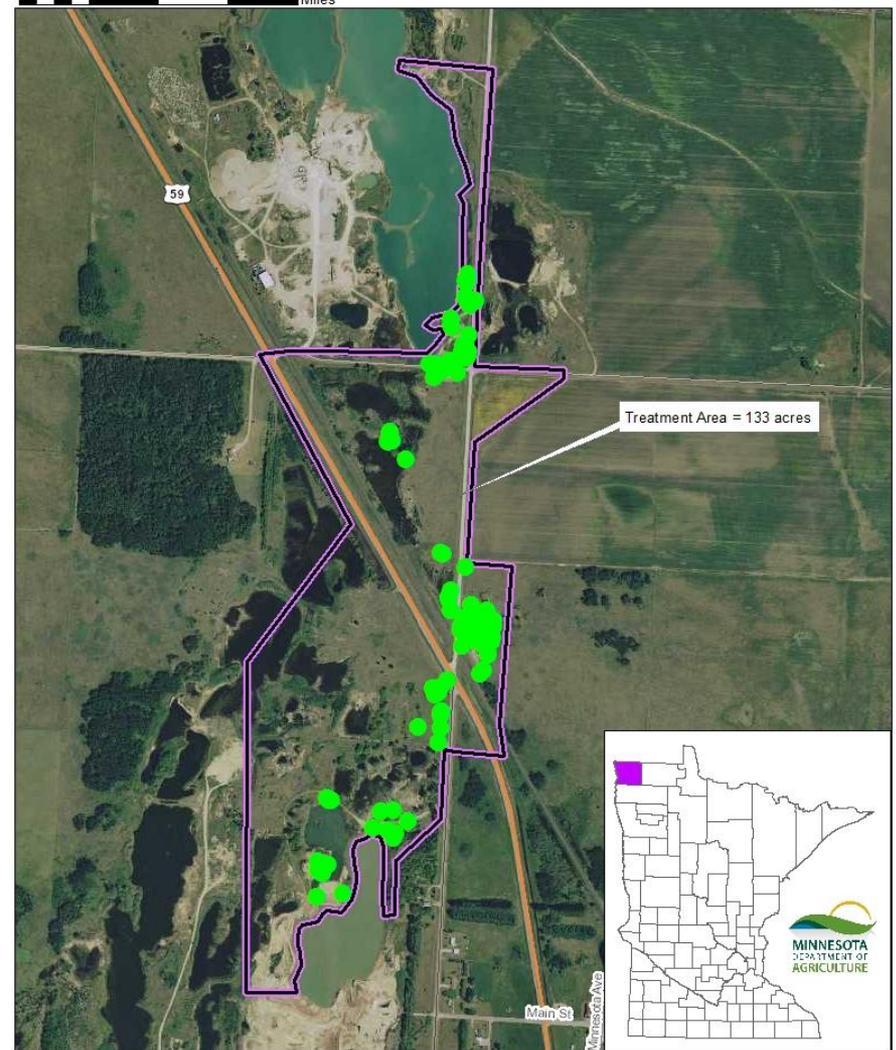
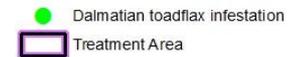
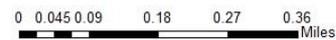
2014 Treatment Timing

2014 Treatments		
Kittson County	Cook County	Phenology
June 17-19	June 24	Bolting
July 29-30	July 29	Flowering
Sept 30- Oct 1		Seed set, rosettes

2011 Survey Area



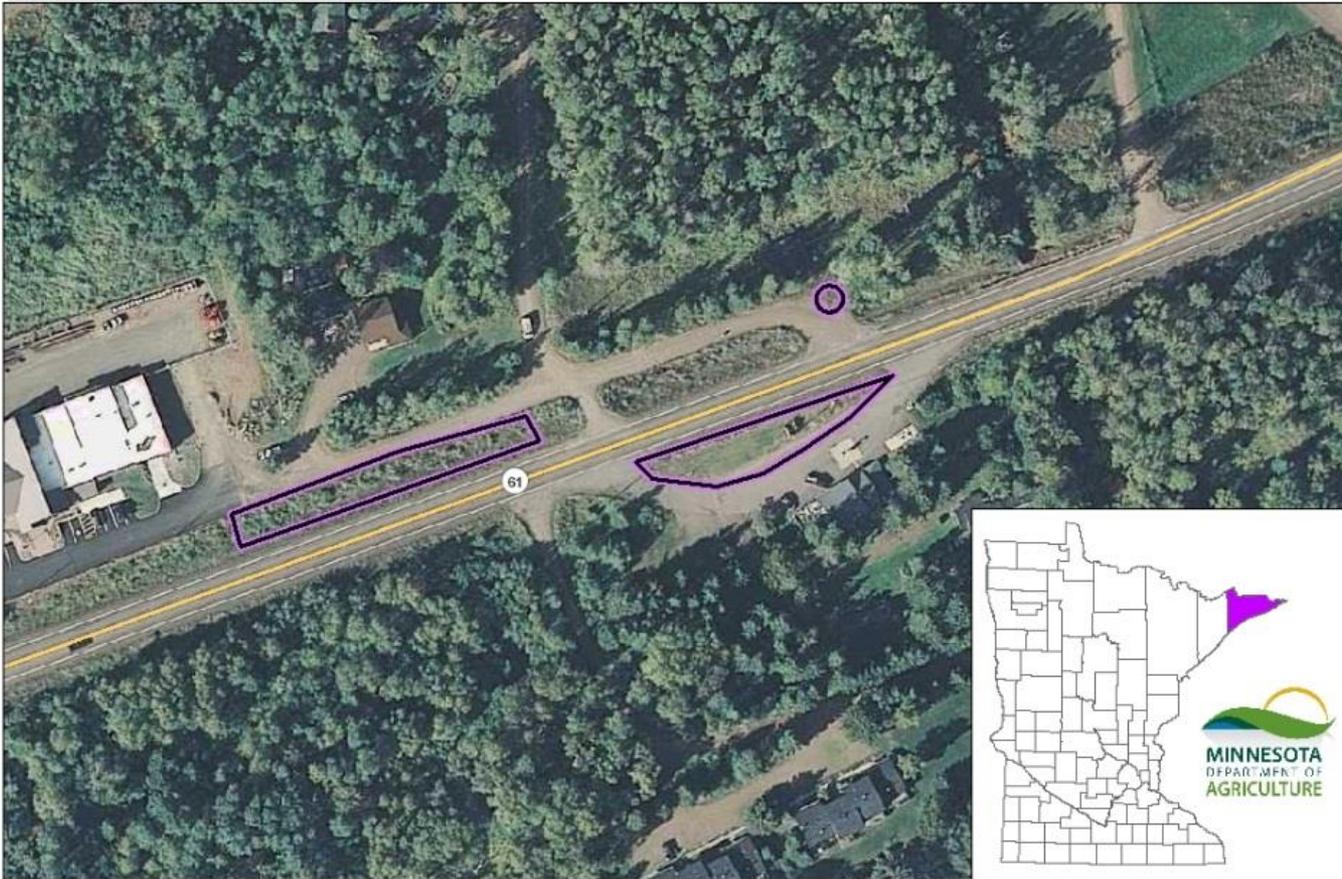
2014 Treatment Area



2014 Treatment Area Lutsen

 Treatment Area

0 0.0075 0.015 0.03 0.045 0.06 Miles



Cook County treatment area = 4 acres

2014 Treatment Area Lutsen

 Treatment Area

0 0.015 0.03 0.06 0.09 0.12 Miles



0 0.0075 0.015 0.03 0.045 0.06 Miles



Cook County treatment area = 4 acres



Plants treated in July and observed in September

Moving Forward

- Concerns about short term funding to fight perennial weed problems, need ongoing, long-term funding for follow-up treatments
- Assessments of the 2014 field season treatments will look at reductions of infestation densities and area.



Thank you!