

Invasive Species

Centennial Watershed Assessment Area

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Species Risk Analysis using Middle Rockies REA Data

- ☐ Canada Thistle
- ☐ Dalmatian Toadflax
- ☐ Leafy Spurge
- ☐ Spotted Knapweed
- ☐ Cheatgrass



Calculating risk for Canada Thistle, Dalmatian Toadflax, Leafy Spurge, and Spotted Knapweed

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- Develop GIS layers depicting suitable:
 - ▣ elevation ranges,
 - ▣ vegetation types
 - ▣ soil types
 - ▣ presence of roads,
 - ▣ precipitation (not Dalmation Toadflax)
- Sum the incidence of each suitable variable
- Results range from 0 to 5 (4 for Dalmation Toadflax) and are rated for low to high risk

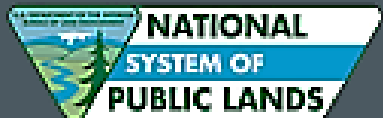


Landscape Approach Implementation

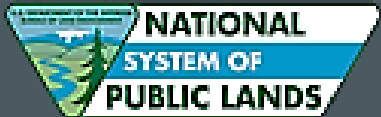
Calculating Risk of Cheatgrass

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- Probability of cheatgrass invasion is calculated using logistic regression
- Developed from field sampled data (n=6,736)
- Used variables: elevation, precipitation, soil pH, soil depth, soil salinity, and available water capacity



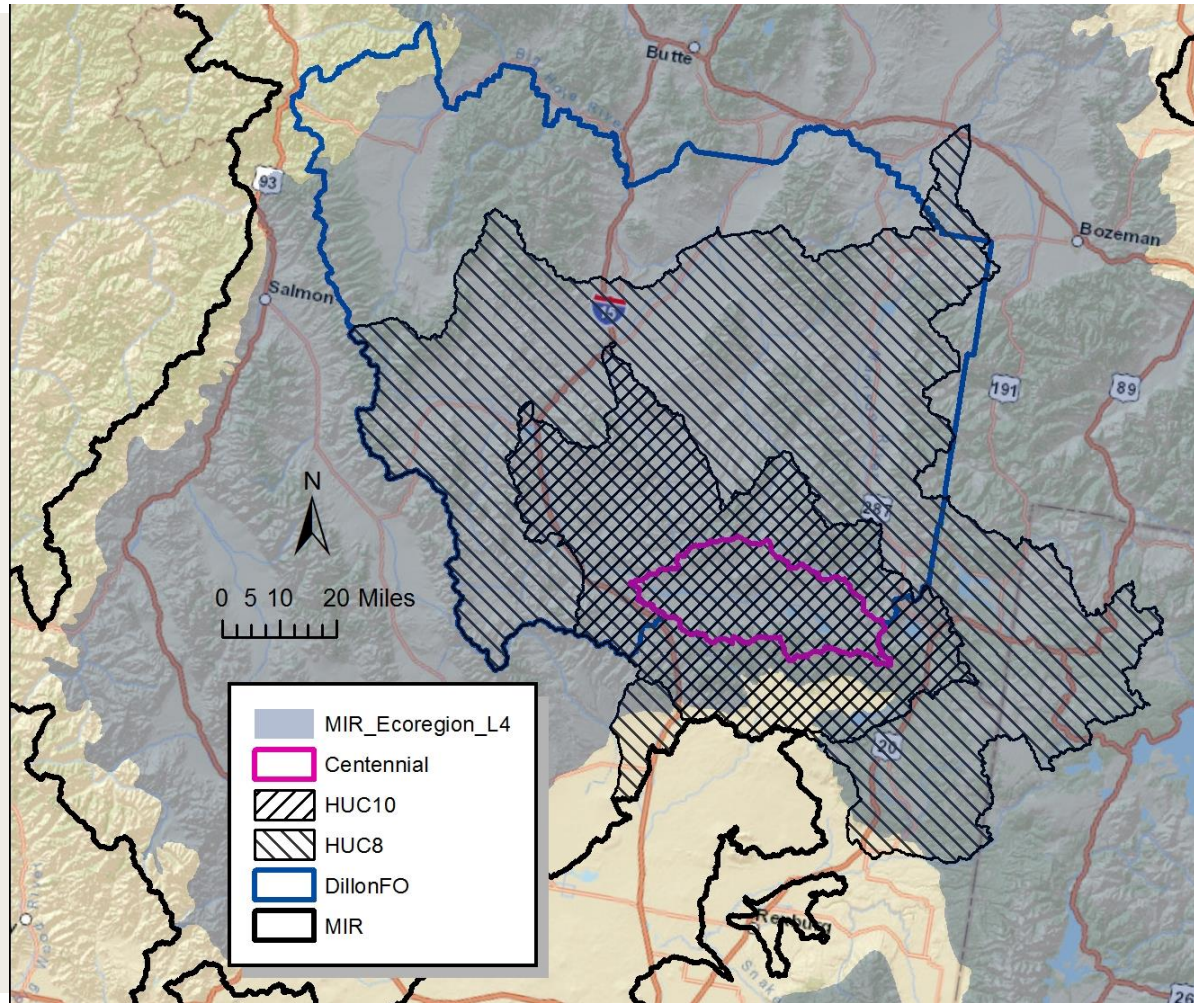
Landscape Approach Implementation



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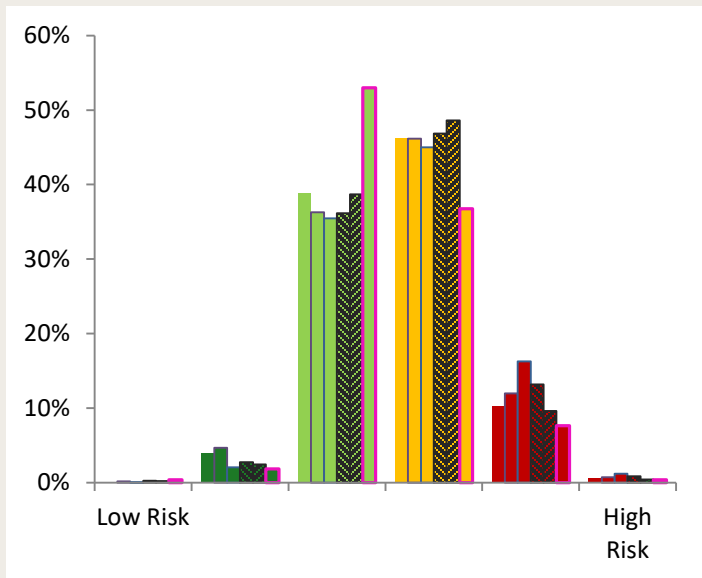
Centennial with intersecting HUC boundaries

5

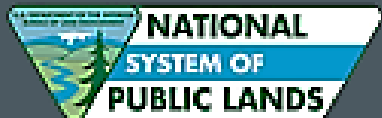
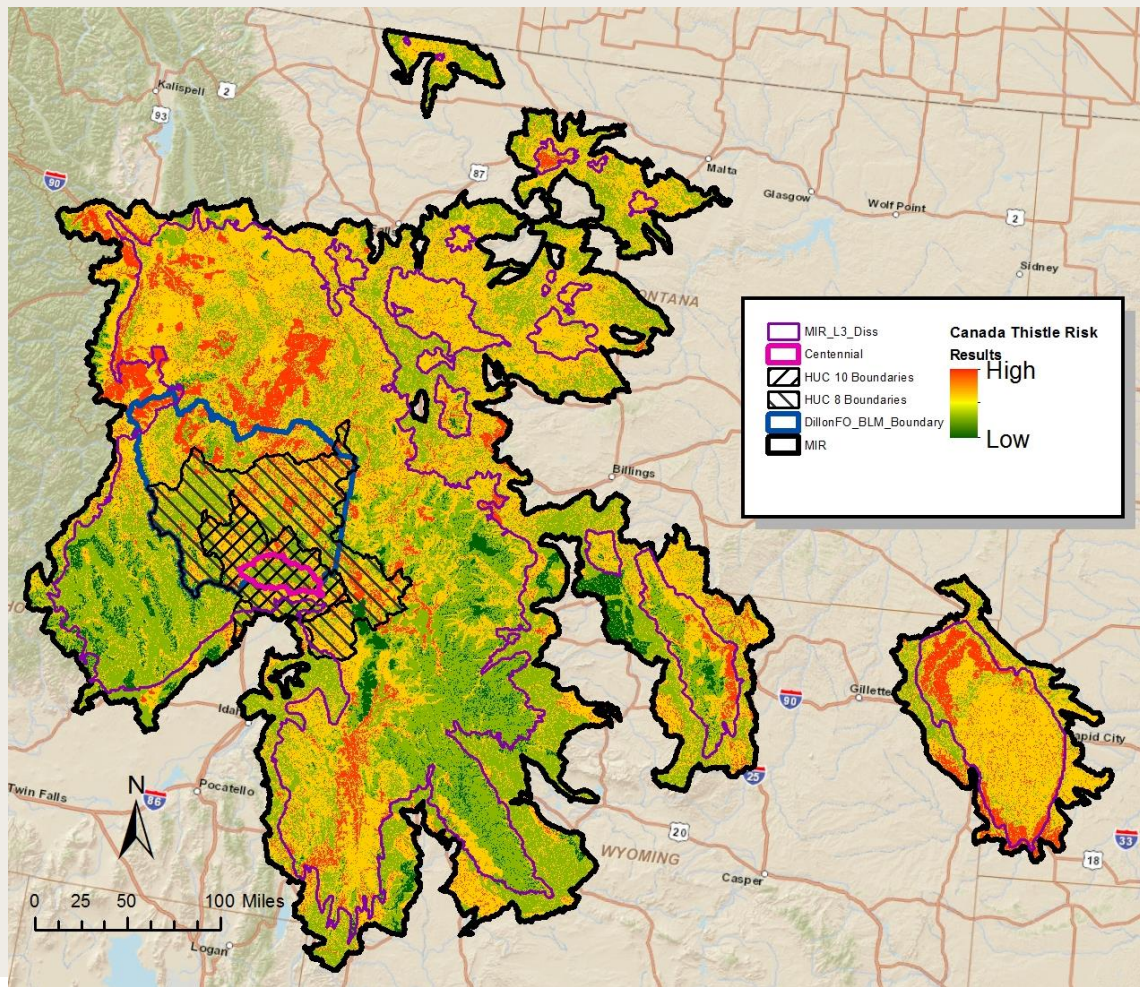


Canada Thistle Risk - MIR

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- MIR REA
- MIR Ecoregion
- Dillon FO
- HUC 8
- HUC 10
- Centennial

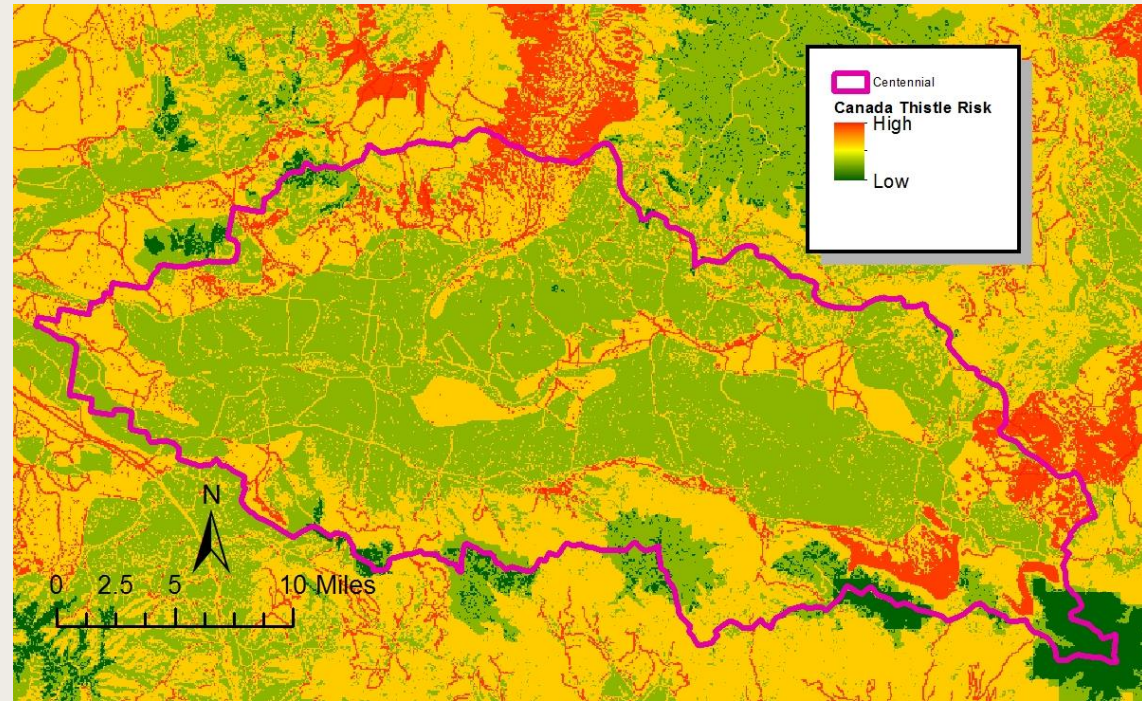
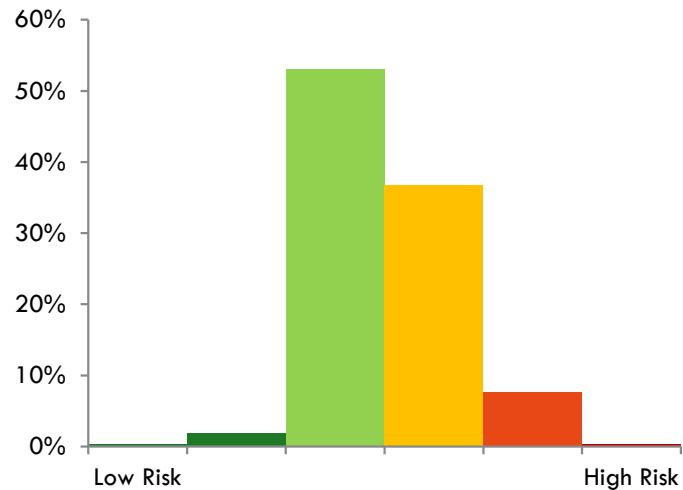


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Canada Thistle Risk - Centennial

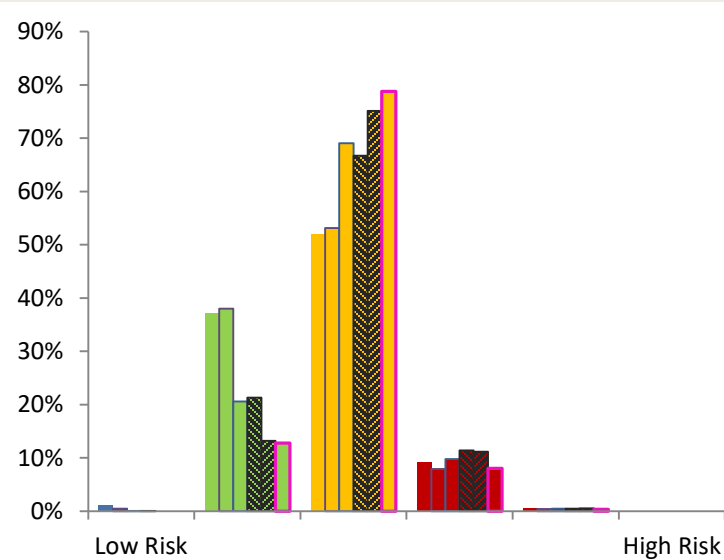
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Centennial

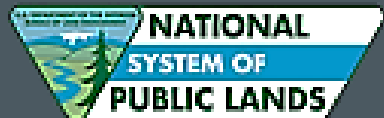
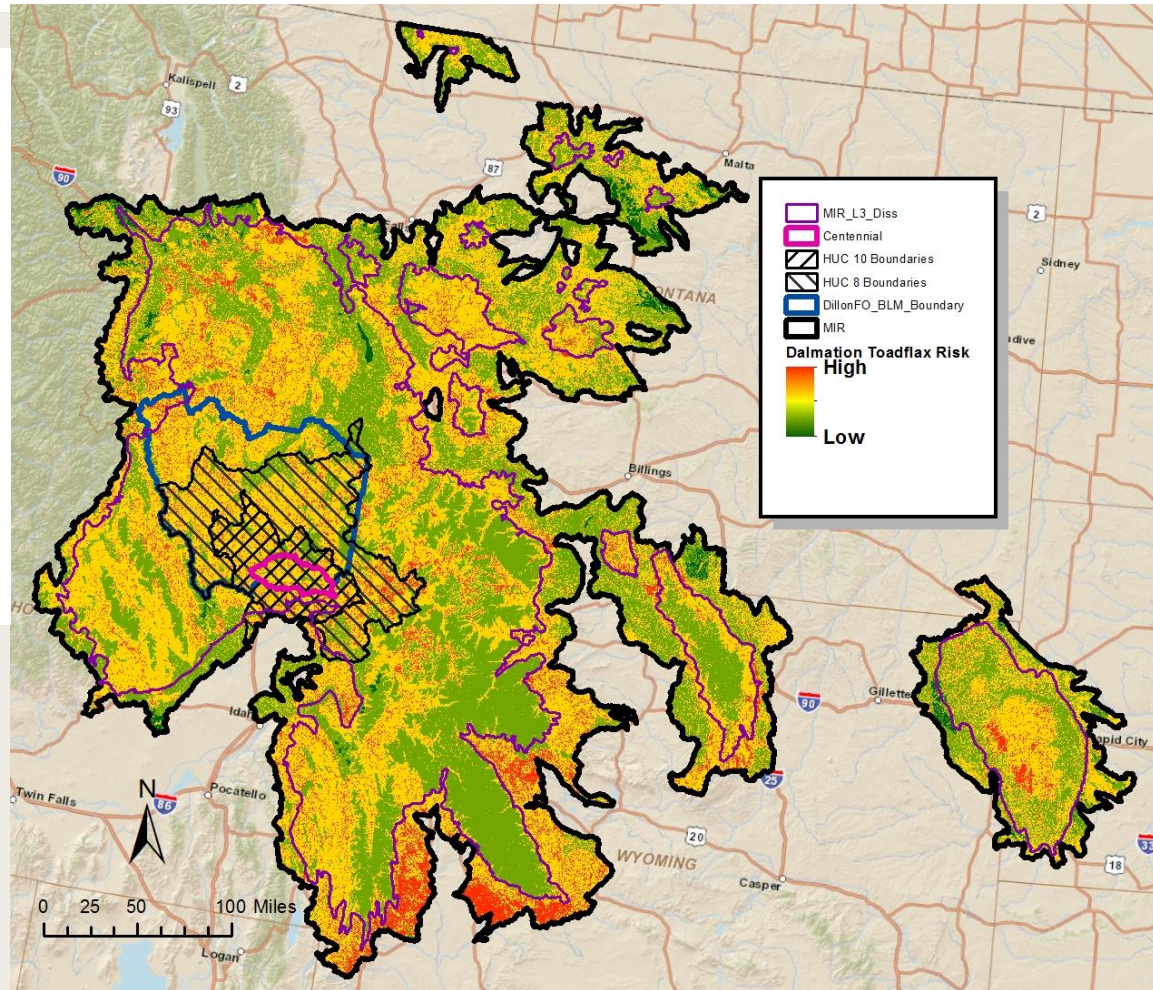


Dalmatian Toadflax Risk

8



- MIR REA
- MIR Ecoregion
- Dillon FO
- HUC 8
- HUC 10
- Centennial

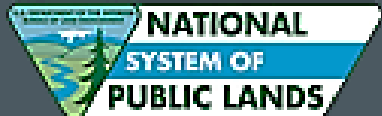
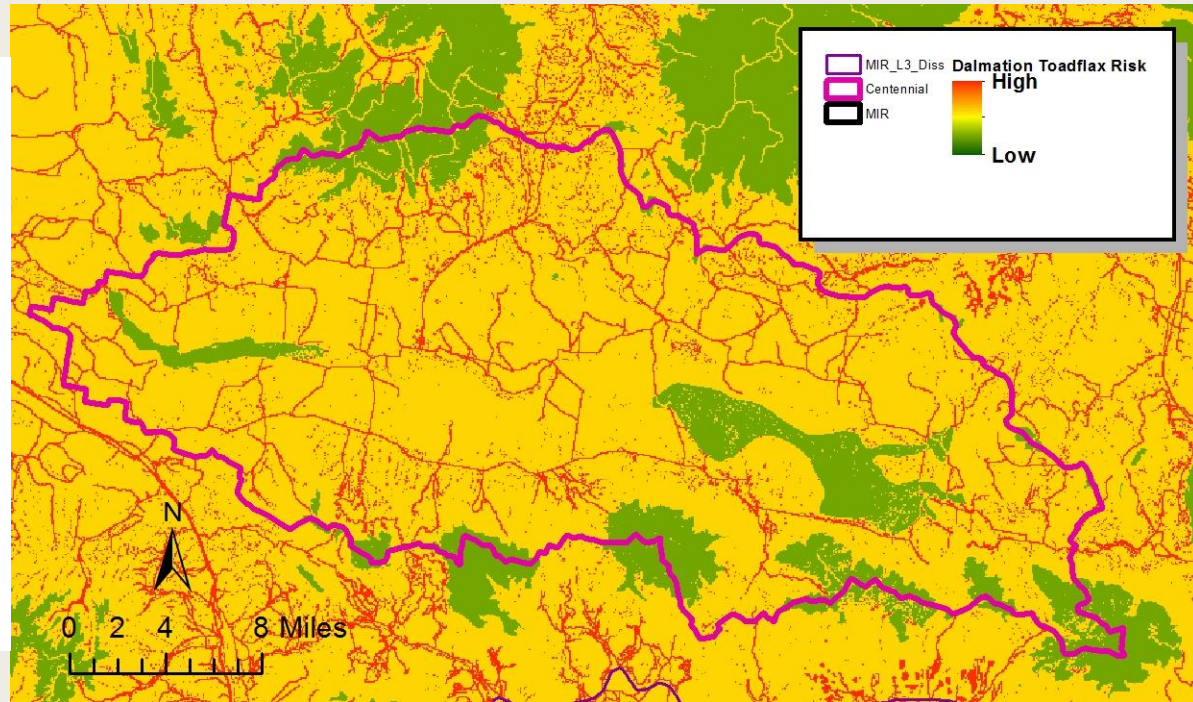
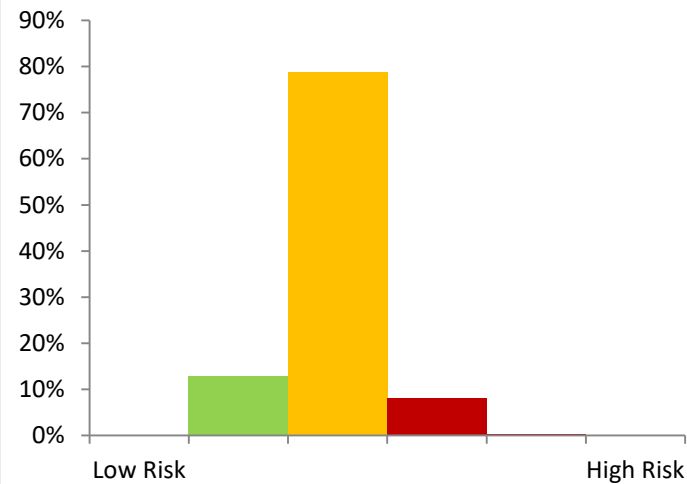


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Dalmatian Toadflax Risk - Centennial

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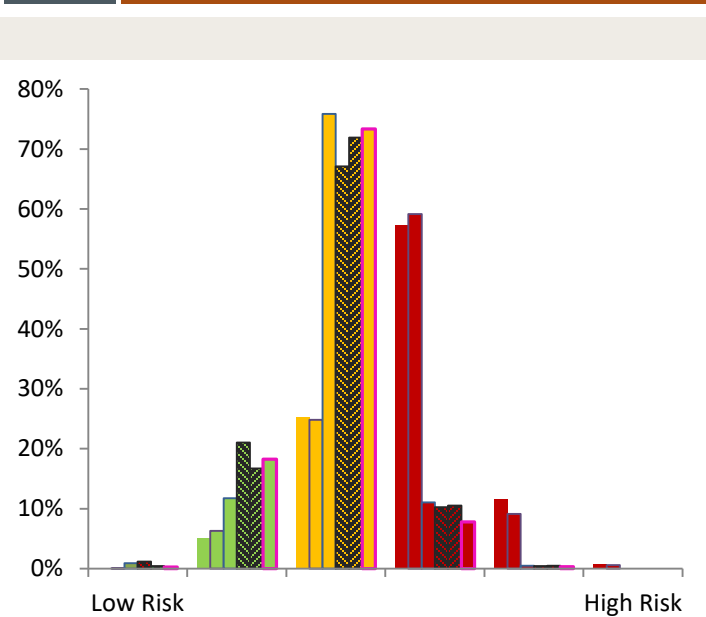
Centennial



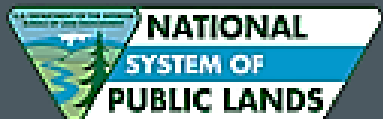
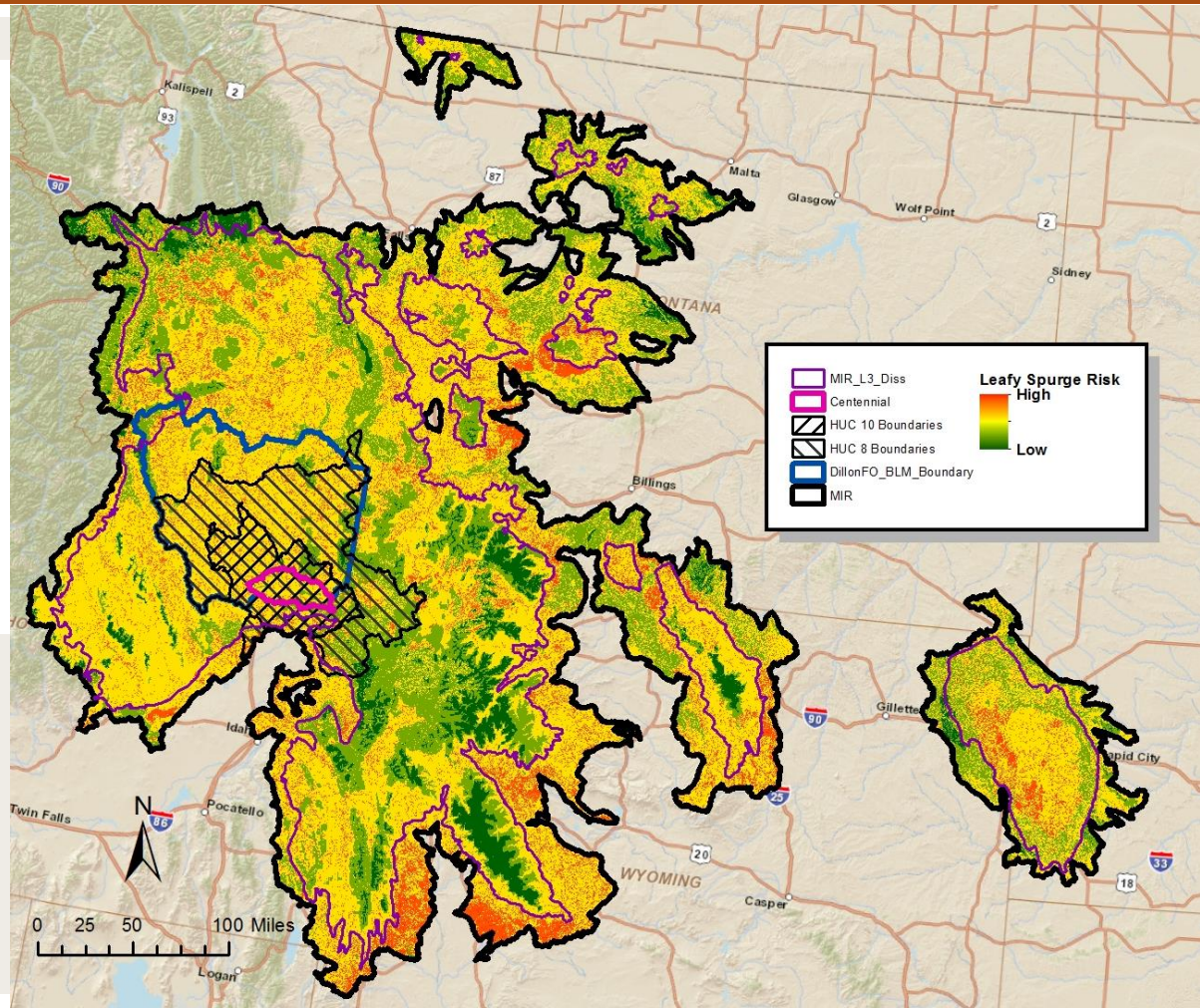
Landscape Approach Implementation

Leafy Spurge Risk

10



- MIR REA
- MIR Ecoregion
- Dillon FO
- HUC 8
- HUC 10
- Centennial

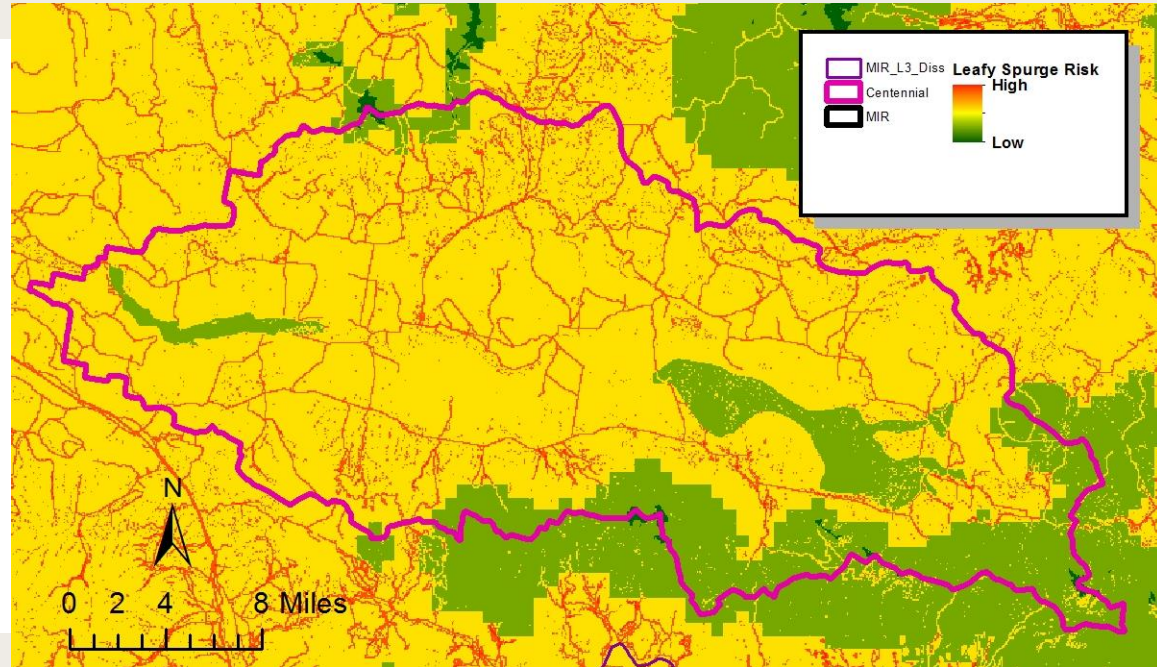
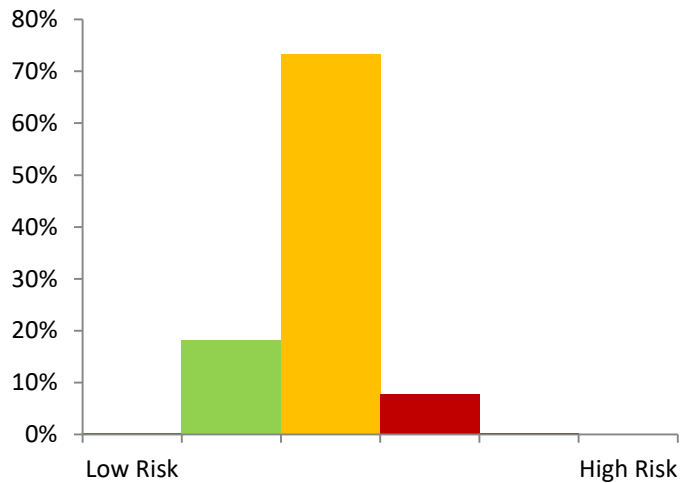


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Leafy Spurge Risk - Centennial

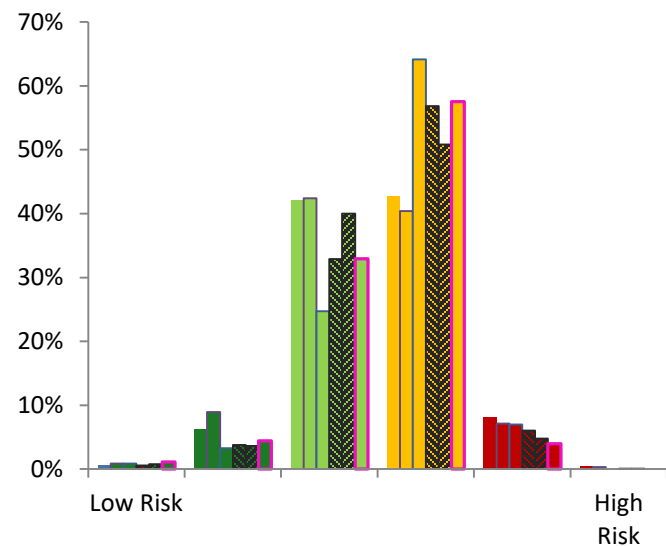
11

Centennial

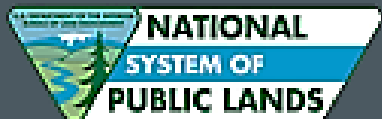
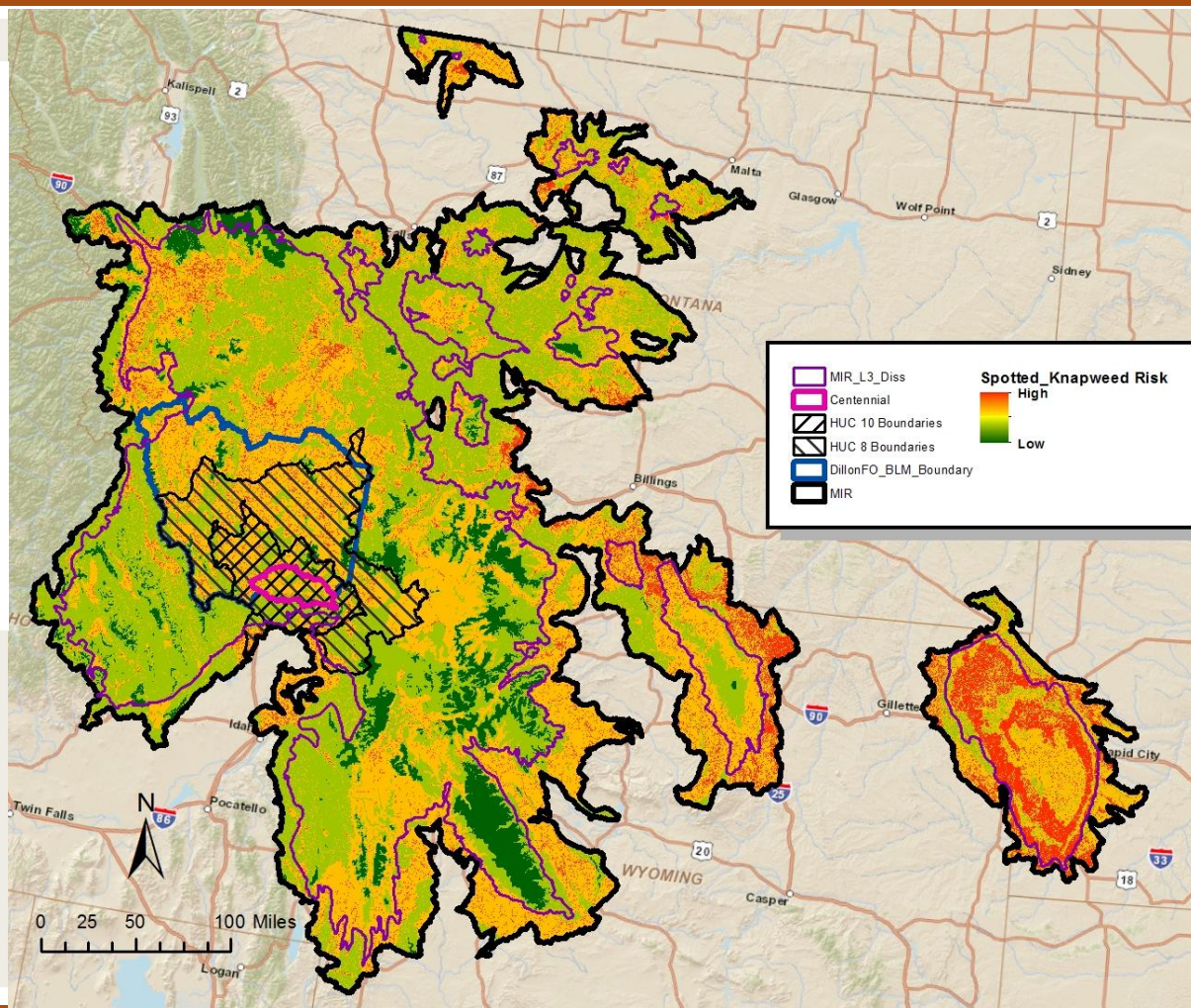


Spotted Knapweed Risk

12



- MIR REA
- MIR Ecoregion
- Dillon FO
- HUC 8
- HUC 10
- Centennial

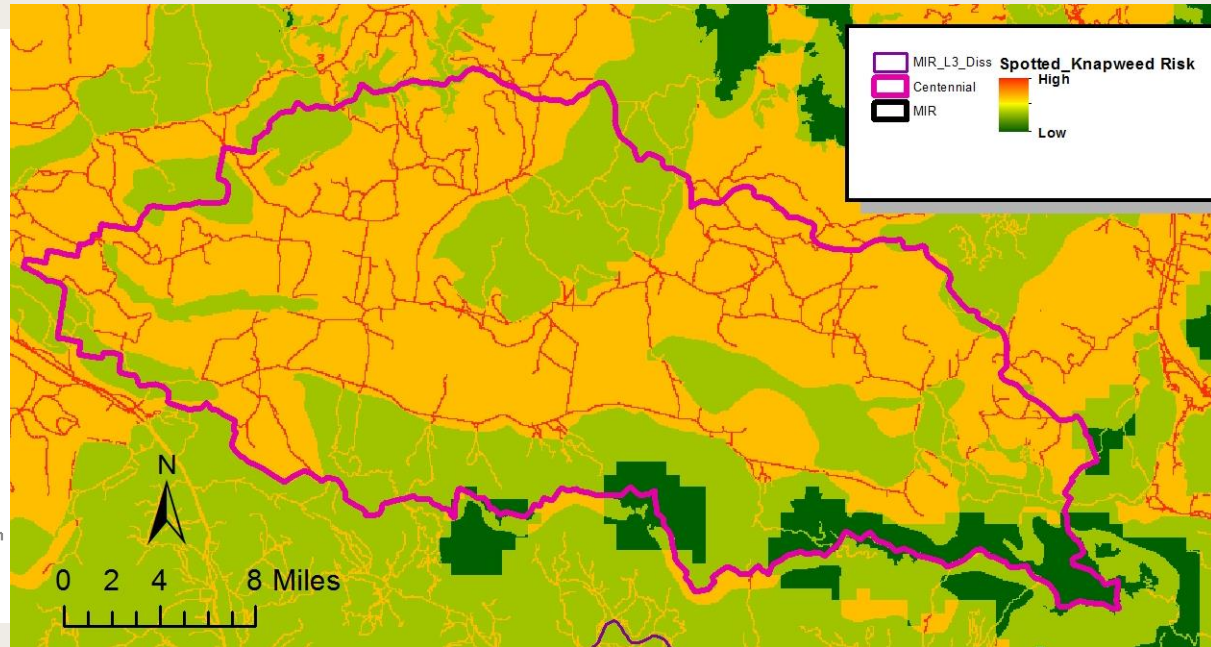
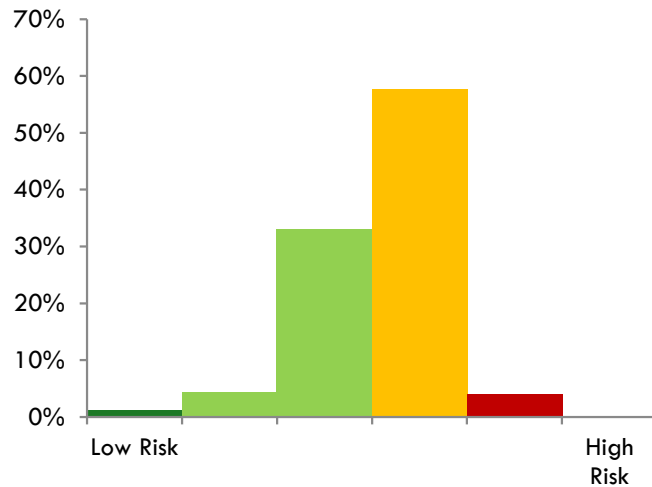


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Spotted Knapweed Risk - Centennial

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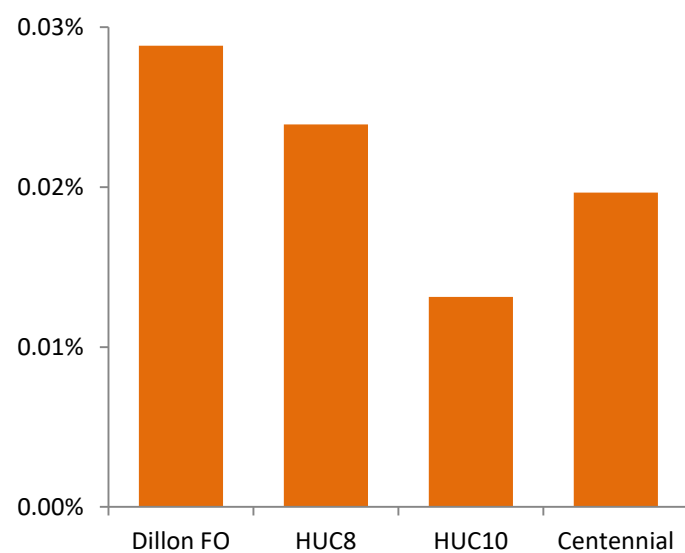
Centennial



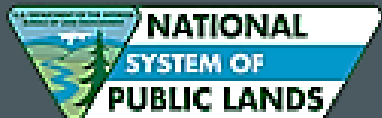
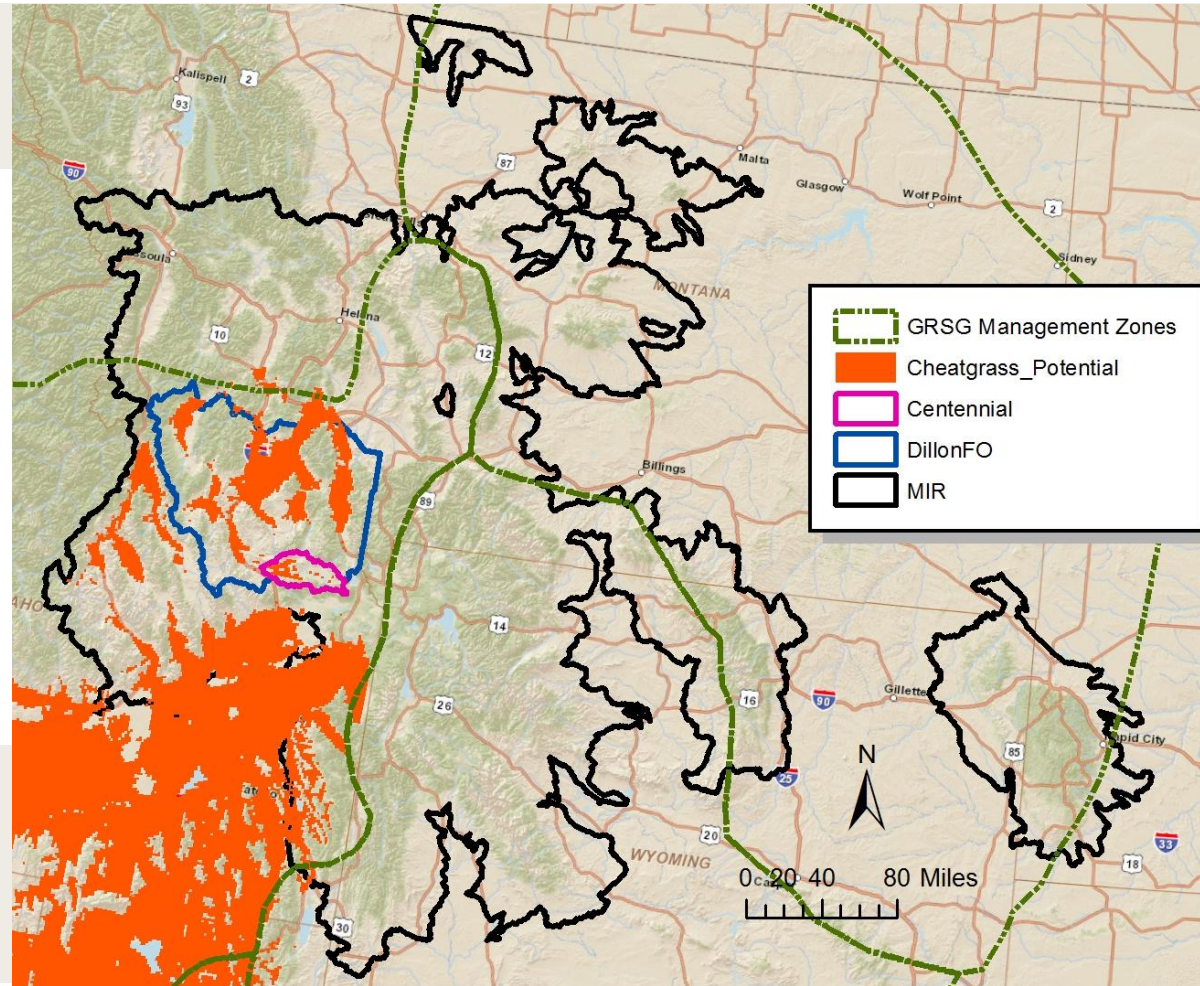
Cheatgrass Potential

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Percent of total area



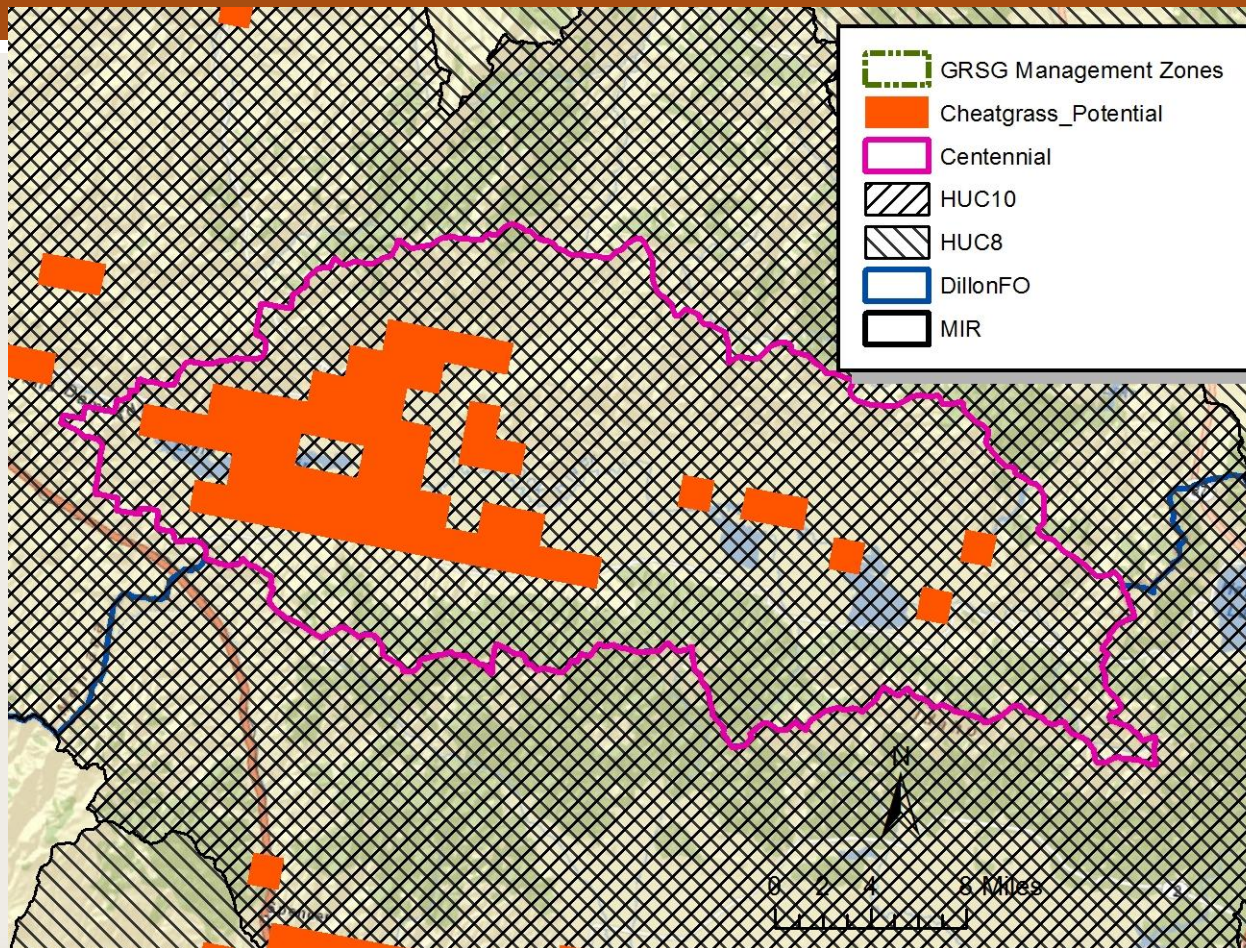
The cheatgrass data do not cover the entire MIR so those area percent's were not calculated.



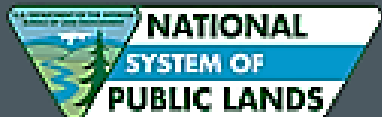
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Cheatgrass Potential - Centennial

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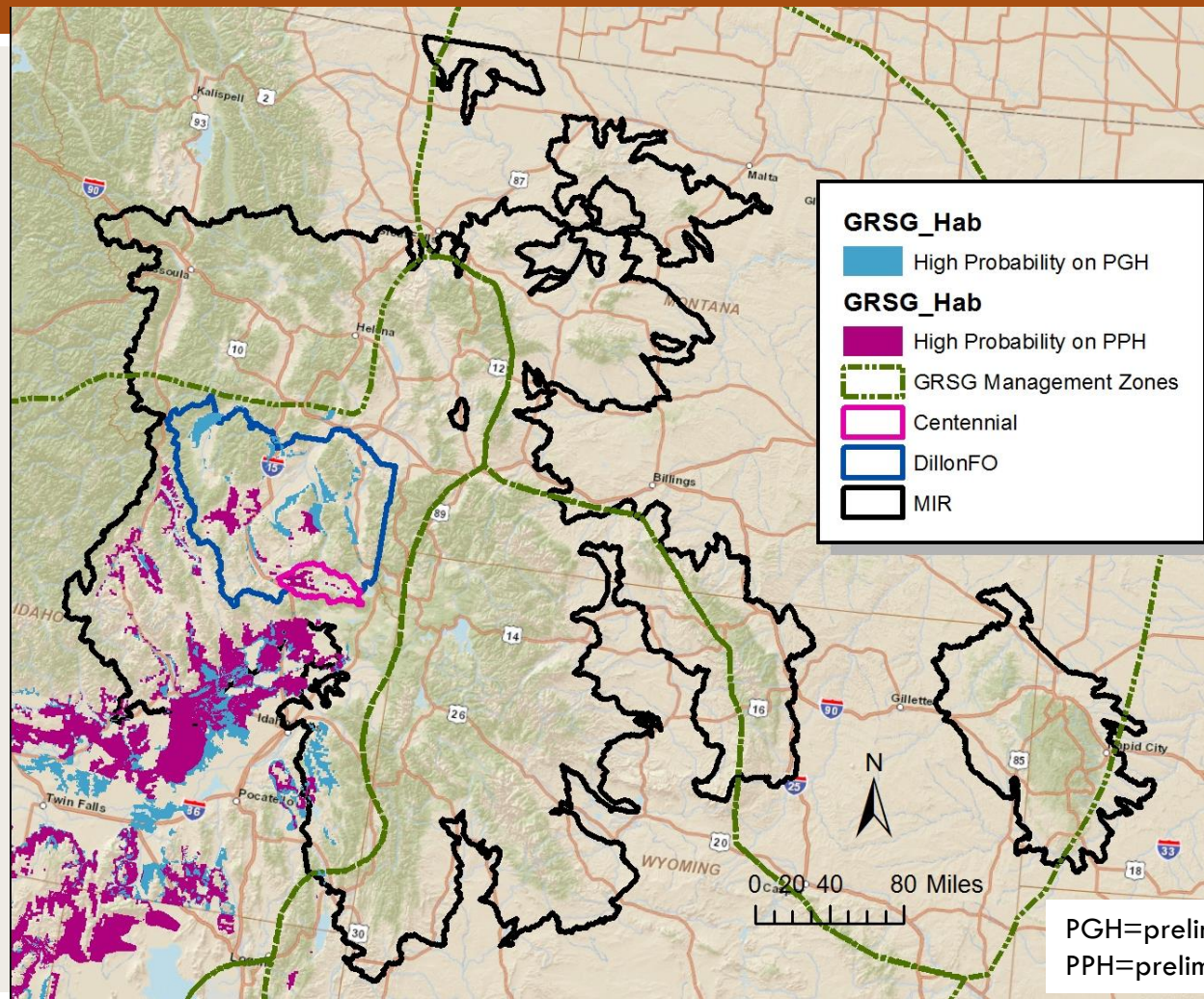
Cheatgrass data source: USGS OFR 2013-1098. Summary of Science, Activities, Programs, and Policies That Influence the Rangeland Conservation of the Greater Sage-Grouse



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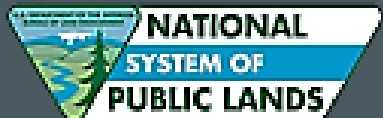
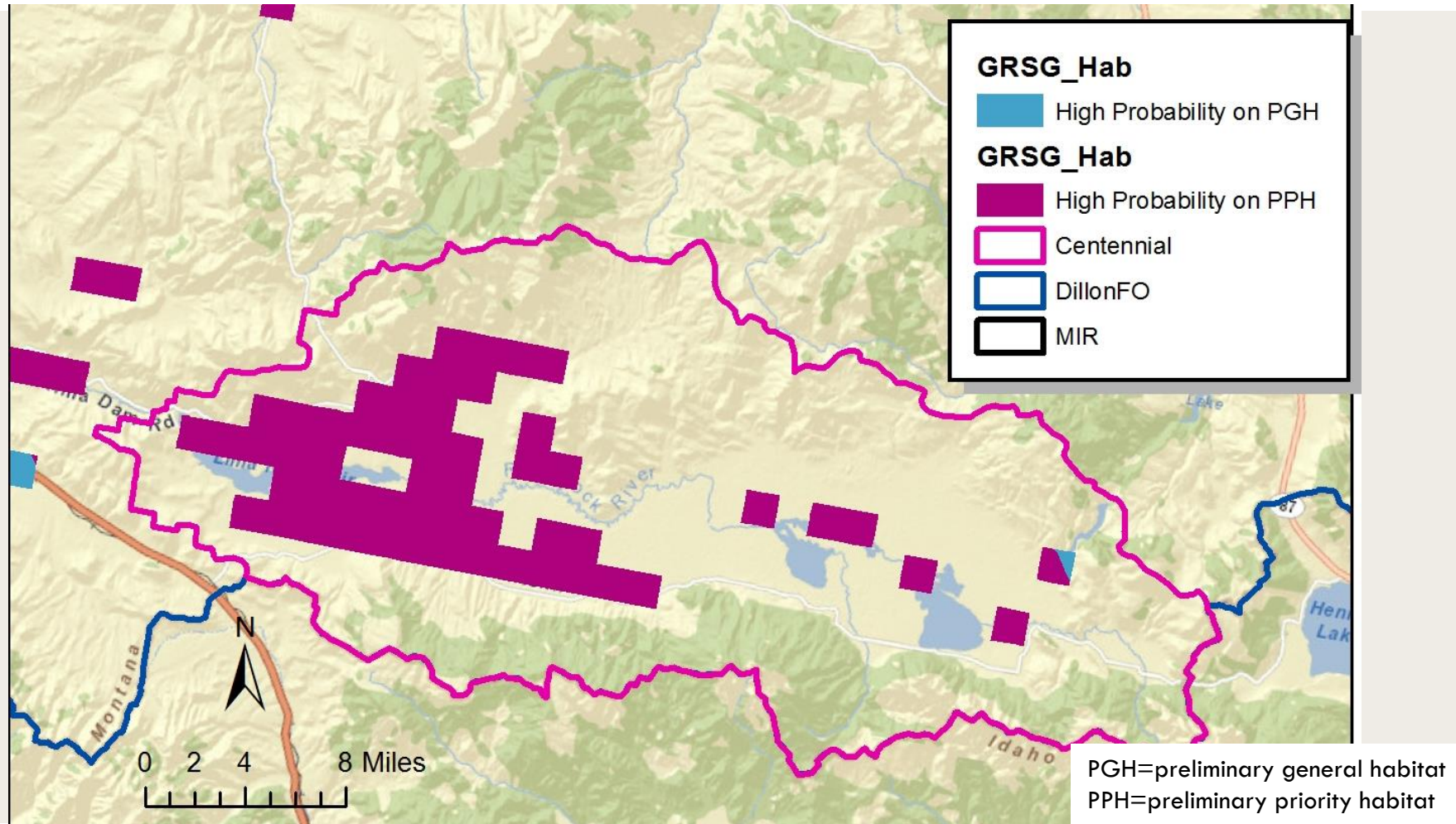
Areas with a high probability of Cheatgrass on Greater Sage-Grouse habitat (GRSG_Hab)

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Areas with a high probability of cheatgrass on Greater Sage-Grouse Habitat (GRSG_Hab)-Centennial

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Landscape Approach Implementation