

Non-forested and Riparian Vegetation

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Ecological Systems

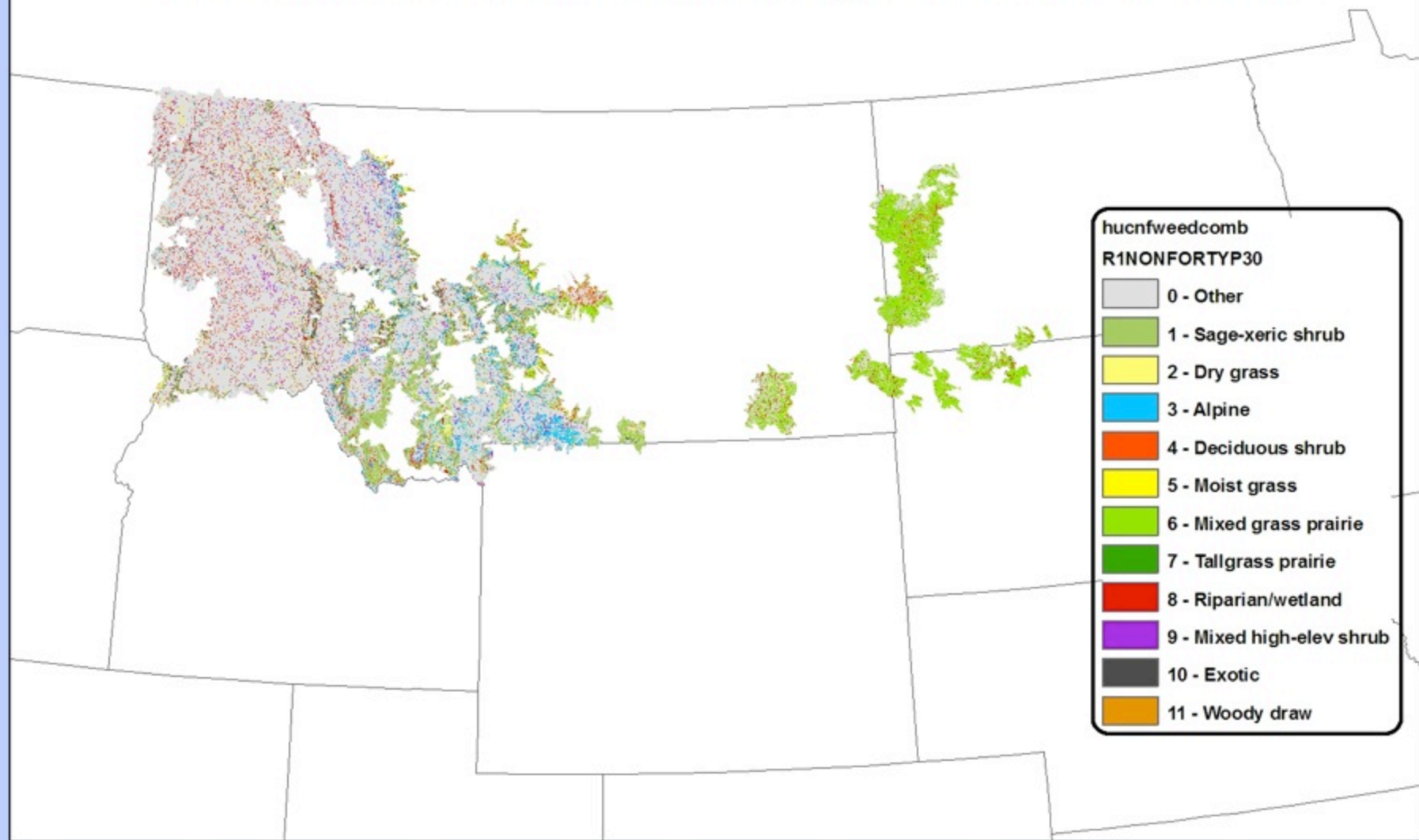
- Since there are no readily available FIA data describing non-forested vegetation types, we used NatureServe's Ecological Systems to describe current conditions.
- NatureServe defines them as follows:
- “Ecological systems represent **recurring groups of biological communities that are found in similar physical environments and are influenced by similar dynamic ecological processes, such as fire or flooding.** They are intended to provide a classification unit that is readily mappable, often from remote imagery, and readily identifiable by conservation and resource managers in the field.”

Example Crosswalks of Major Types

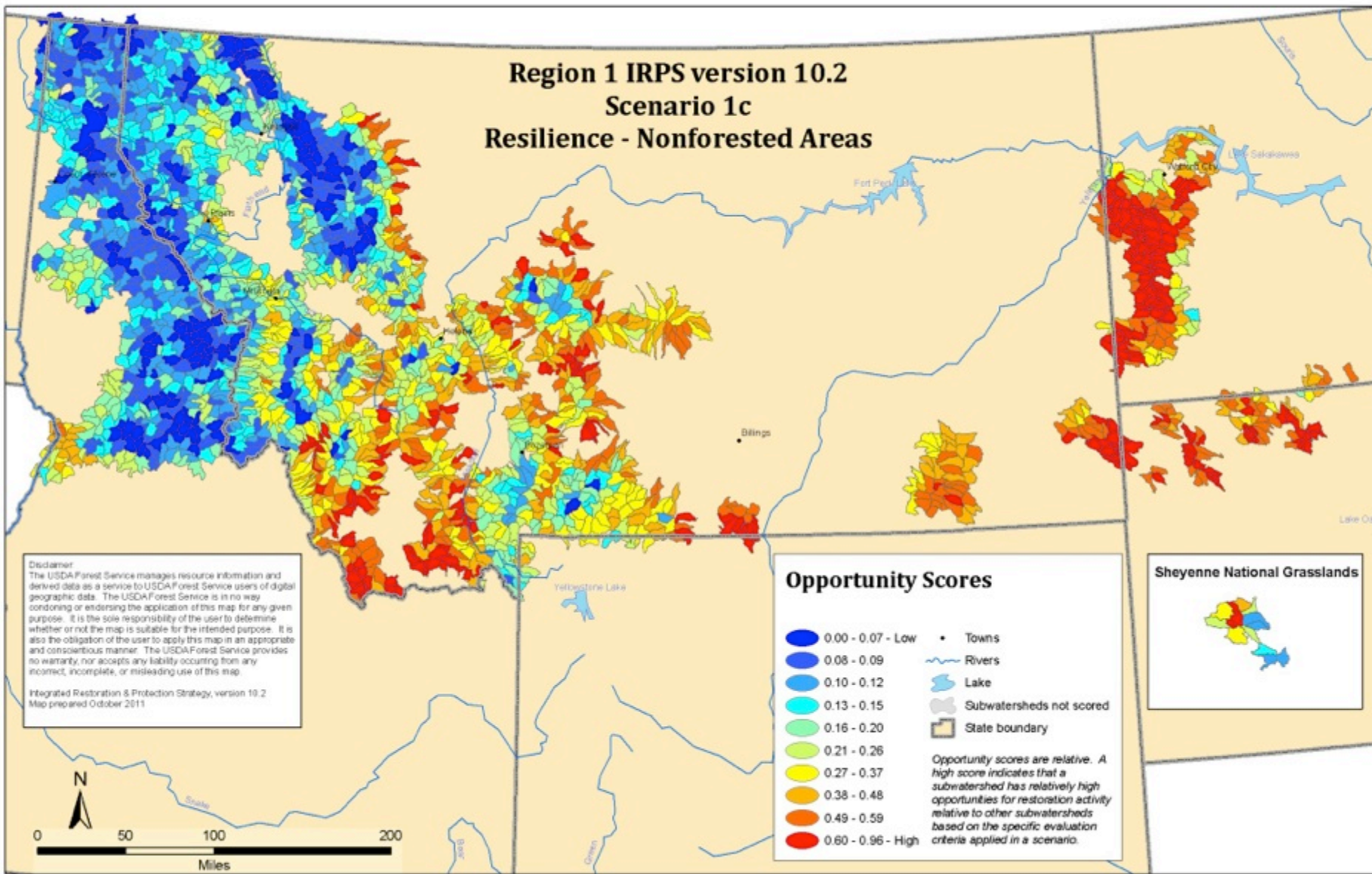
- **Dry Grass** –bluebunch wheatgrass, Idaho fescue, Sandberg bluegrass
- **Moist Grass** – rough fescue-Idaho fescue
- **Riparian/Wetland** – cottonwood-willow
- **Sagebrush/Xeric Shrub** – big sagebrush steppe, mountain mahogany, bitterbrush

Integrated Restoration & Protection Strategy

Input Layer: HUC6 Combined with Nonforest Vegetation and Weed Risk



Region 1 IRPS version 10.2 Scenario 1c Resilience - Nonforested Areas



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Integrated Restoration & Protection Strategy, version 10.2
Map prepared October 2011

Opportunity Scores

0.00 - 0.07 - Low	• Towns
0.08 - 0.09	~ Rivers
0.10 - 0.12	☪ Lake
0.13 - 0.15	☐ Subwatersheds not scored
0.16 - 0.20	☐ State boundary
0.21 - 0.26	
0.27 - 0.37	
0.38 - 0.48	
0.49 - 0.59	
0.60 - 0.96 - High	

Opportunity scores are relative. A high score indicates that a subwatershed has relatively high opportunities for restoration activity relative to other subwatersheds based on the specific evaluation criteria applied in a scenario.

Shoyenne National Grasslands



IRPS Assignments

- Originally feasibility was considered during the ratings, as shown below. It was dropped in the final analysis.
- **Scenario 1c: Ecosystem Resilience and Vulnerability in non-forested areas**
- **(70) Value:** Composition of non-forest types with noxious weed hazard**
- **(20) Risks:** Departure from historic fire regime of non-forest types (10%)** , Grazing (10%)**
- **(10) Feasibility:** FS ownership
- * Suggested weights in parentheses
- ** NetWeaver model in place

Sub-Region: W. MT

- Vegetation Type: Dry Grass (bluebunch wheatgrass, Idaho fescue, needle-and-thread)
- **Value: 40 %**
- This type is somewhat rare in W MT. It's declining and/or is highly susceptible to invasives, then conifer encroachment due to fire exclusion, and then improper grazing.
- **Risk: 60%**
 - Invasives: 35%
 - Fire Exclusion: 20%
 - Grazing/Herbivory: 5%

Sub-Region: E. MT

- Vegetation Type: Dry Grass
- **Value: 40 %**
- This type is more common east of the divide. It is highly susceptible to invasives, improper grazing, then woody species encroachment.
- **Risk: 60%**
 - Invasives: 30%
 - Fire Exclusion: 10%
 - Grazing/Herbivory: 20%

Sub-Region: N ID

- Vegetation Type: Dry Grass
- **Value: 40 %**
- This is a rare type in N ID. It has been converted to agriculture or highly altered by invasives, uncharacteristic fire, conifer encroachment, and improper grazing.
- **Risk: 60%**
 - Invasives: 40%
 - Fire Exclusion: 5%
 - Grazing/Herbivory: 15%

EVG	N.ID V/R*	W. MT V/R	E.MT V/R	DPG V/R
Dry Grass	40/60	40/60	40/60	na
Moist Grass	60/40	60/40	60/40	na
Mixed Grass Prairie	na	na	50/50	50/50
Tall grass Prairie	na	na	na	60/40
Sagebrush/Xeric Shrub	60/40	60/40	50/50	50/50
Mixed High Elevation Shrub	70/30	70/30	70/30	na
Deciduous Shrub	50/50	60/40	70/30	60/40
Alpine	80/20	80/20	80/20	na
Riparian/Wetland	70/30	70/30	70/30	70/30
Woody Draw	50/50	60/40	60/40	60/40
Exotic	10/90	10/90	10/90	10/90
Early Seral Herb	20/80	20/80	20/80	20/80

Major threats

- Invasives (exacerbated by fire)
- Uncharacteristic wildfire
 - Low elevation dry grasslands and shrublands– shortened return interval--often facilitates increases in invasives
 - High elevation grasslands and shrublands—fire exclusion--often facilitates conifer expansion/re-establishment in absence of fire
- Chronic *improper* grazing
 - This creates physiological and plant water stress and sets the stage for invasives, along with soil damage (compaction, run-off, loss of A horizon, etc). (Thresholds may be crossed...this varies by ecological site--STM.)





Riparian/Wetland – High Value (70%), lower risk (30%)
Risk: less snowpack, lower base flows (favoring upland vegetation), invasives, improper grazing, fire?
(depends...)

