

# Overview of Native Prairie in Canada

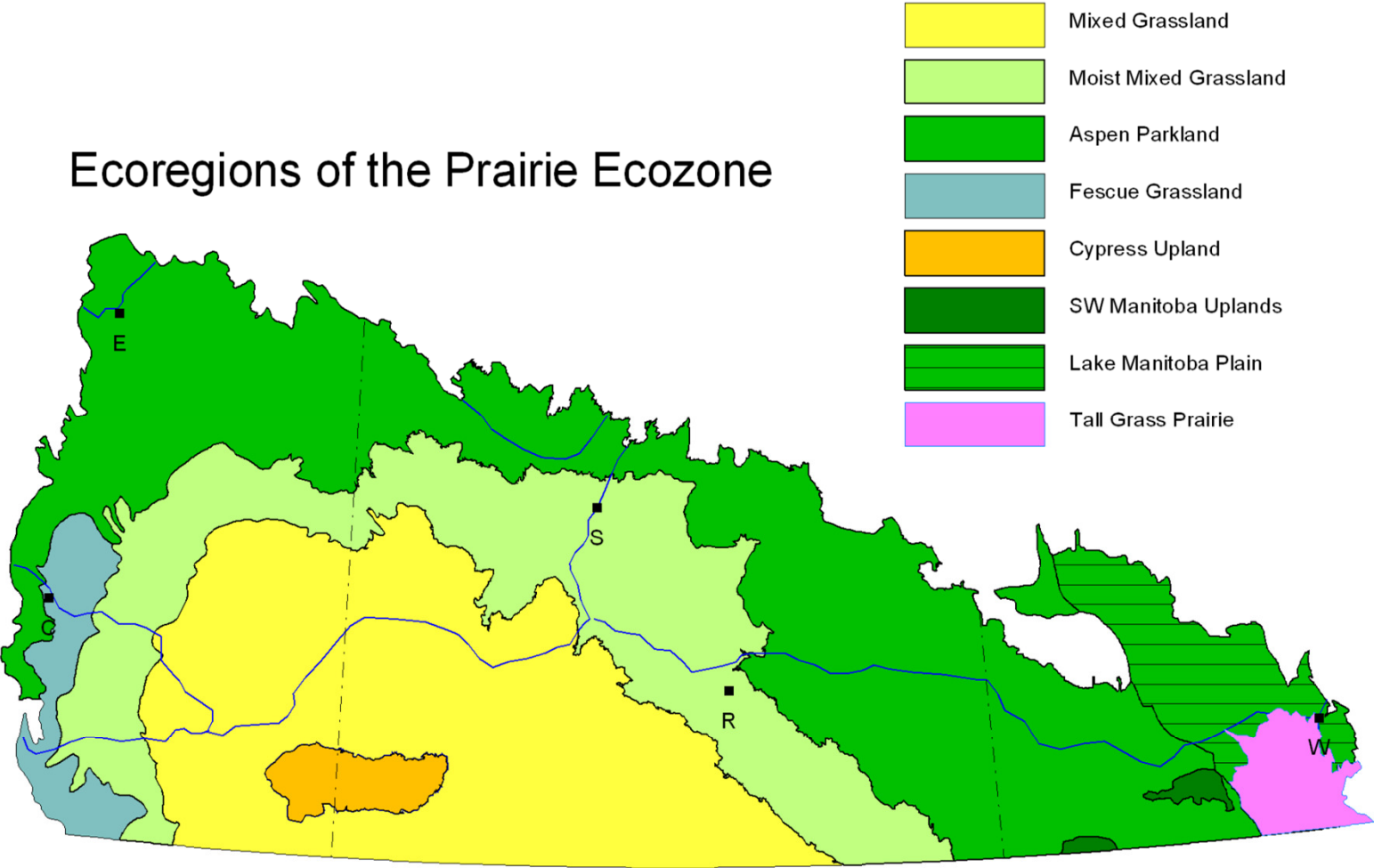
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Saskatchewan Research Council

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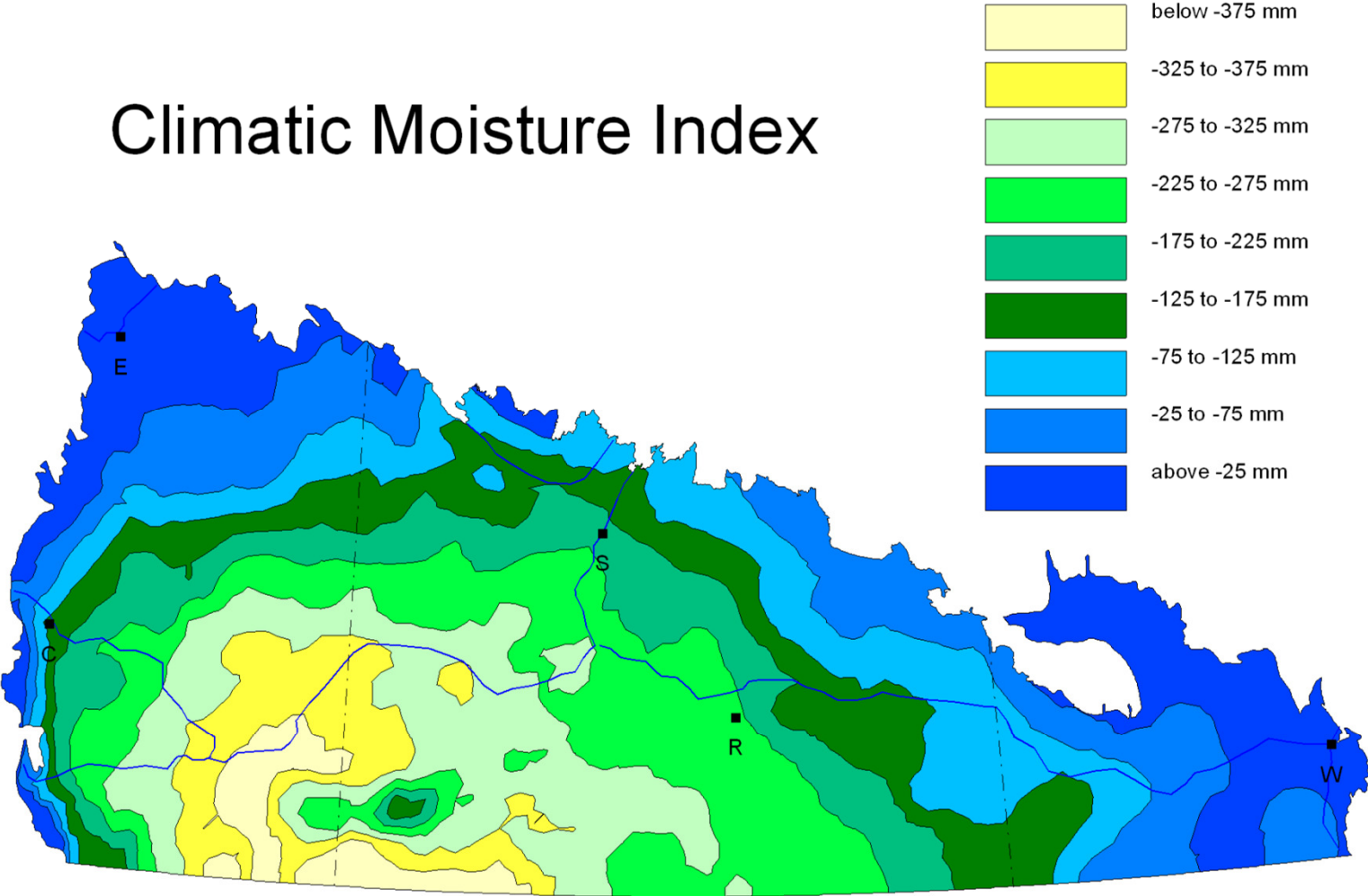
# Ecosystem classification

- We have a wide variety of different grassland types.
- Ecosystem classification provides a consistent basis for describing types and making management recommendations.
- Hierarchical system:
  - ecozones and ecoregions represent broad climatic trends.
  - ecosites represent variation within ecoregions (topography, soils, moisture, salinity).

# Ecoregions of the Prairie Ecozone



# Climatic Moisture Index



# Ecoregions and CMI

| ECOREGION                       | CLIMATIC MOISTURE INDEX |
|---------------------------------|-------------------------|
| Forested ecoregions             | Above 0 mm              |
| Aspen Parkland Ecoregion        | 0 to -175 mm            |
| Moist Mixed Grassland Ecoregion | -175 to -250 mm         |
| Mixed Grassland Ecoregion       | Below -250 mm           |
| (Dry Mixed Grassland)           | Below -325 mm           |







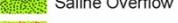



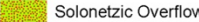











# Ecosites used in Saskatchewan

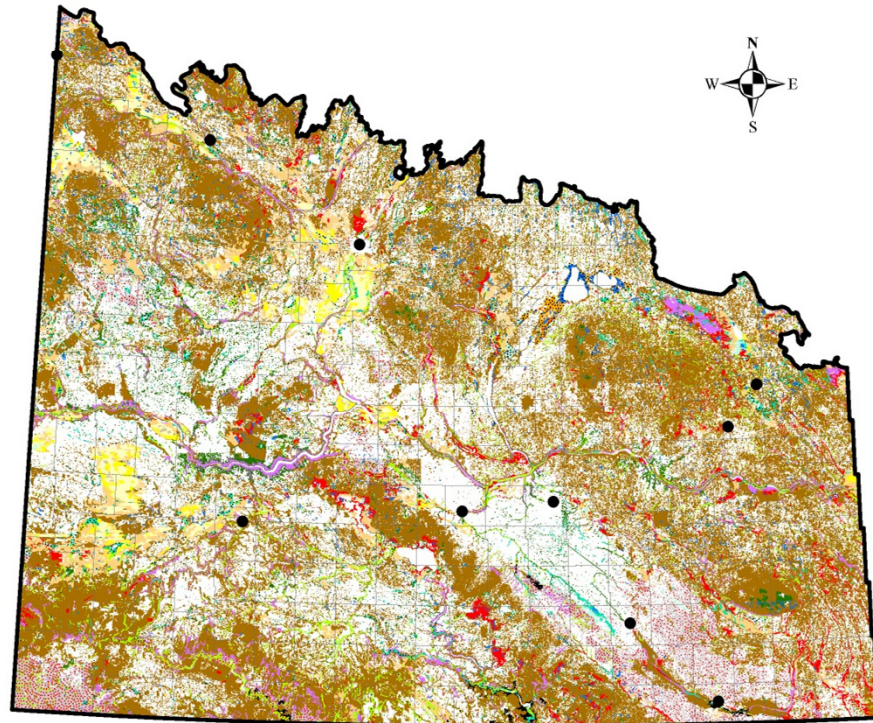
|       |            |
|-------|------------|
| DRY   | Badlands   |
|       | Thin       |
|       | Gravelly   |
|       | Dunes      |
|       | Solonetzic |
| ZONAL | Sand       |
|       | Sandy Loam |
|       | Loam       |
|       | Clay       |

|        |                      |
|--------|----------------------|
| MOIST  | Overflow             |
|        | Dry Meadow           |
|        | Wet Meadow           |
|        | Shallow Marsh        |
|        | Deep Marsh           |
| SALINE | Saline Upland        |
|        | Saline Dry Meadow    |
|        | Saline Wet Meadow    |
|        | Saline Shallow Marsh |
|        | Saline Deep Marsh    |

# Range Ecosites of Southern Saskatchewan

## Legend

|  |   |   |   |
|--|---|---|---|
|  Clay       |  High Dunes    |  Overflow           |  Saline Wet Meadow |
|  Loam       |  Gravelly      |  Saline Overflow    |  Marsh             |
|  Sandy Loam |  Solonchic     |  Solonchic Overflow |  Saline Marsh      |
|  Sand       |  Thin          |  Dry Meadow         |   |
|  Low Dunes  |  Badlands      |  Saline Dry Meadow  |  Cities            |
|  |  Saline Upland |  Wet Meadow         |  RM Boundaries     |



**Loam Ecosite in drier part of Mixed  
Grassland Ecoregion – needle-and-  
thread, northern wheatgrass**







**Loam Ecosite in  
Moist Mixed  
Grassland –  
western porcupine  
grass, northern  
wheatgrass**

# Loam Ecosite in Aspen Parkland – plains rough fescue





**Sand Ecosite –  
needle-and-  
thread, sand  
grass**



## Clay Ecosite - northern wheatgrass

**Dunes Ecosite in drier part of Mixed  
Grassland – silver sagebrush, needle-  
and-thread, sand grass**



**Thin Ecosite – prairie muhly, thread-leaved sedge, creeping juniper. Badlands Ecosite in background.**



# Solonchic Ecosite with burnouts



**Overflow Ecosite in drier part of Mixed  
Grassland – silver sagebrush, northern and  
western wheatgrass**





# Wet Meadow Ecosite – sedges, narrow reedgrass



# Saline Wet Meadow – salt grass, Nuttall's alkali grass

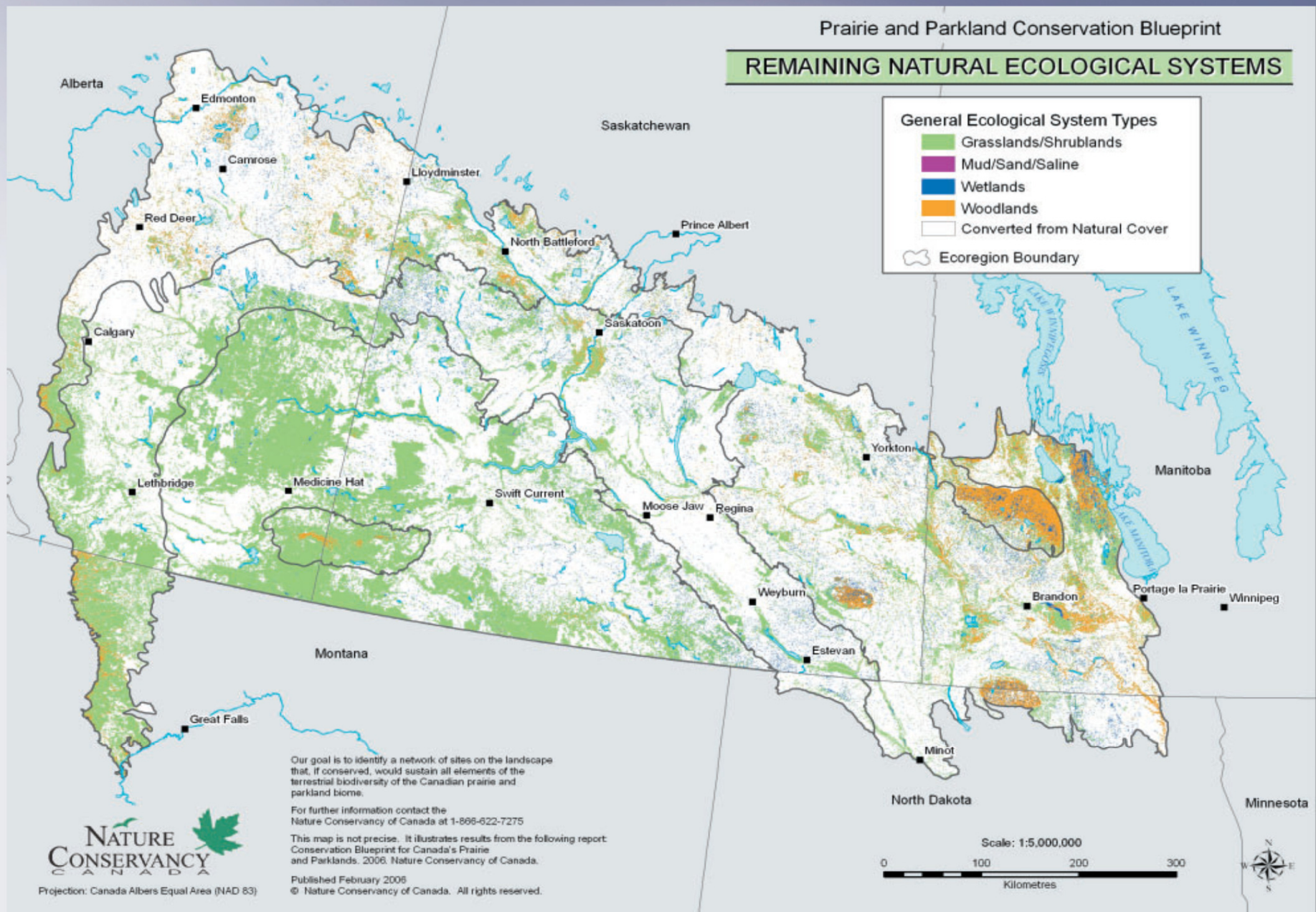


# Threats to native grassland

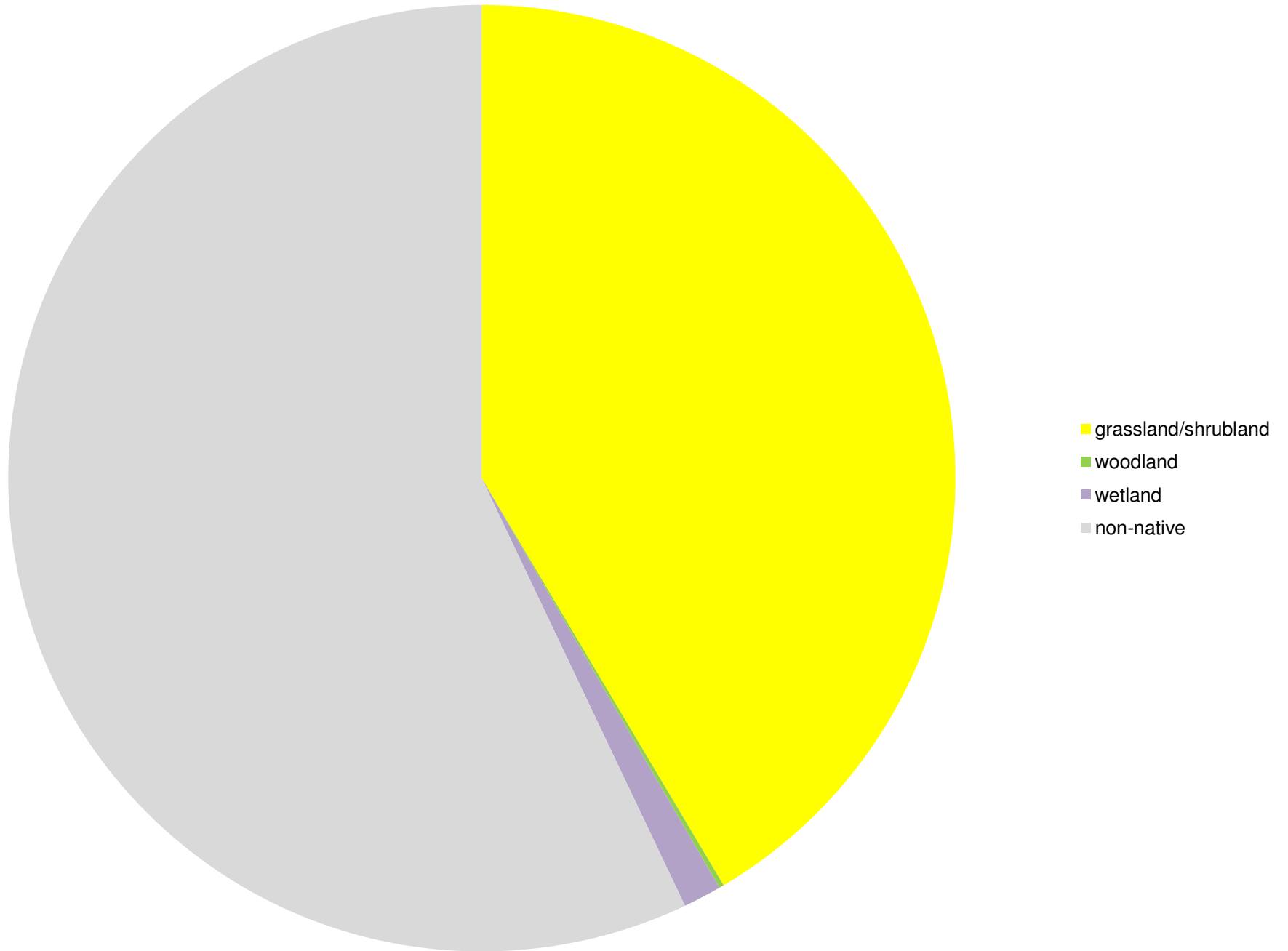
- cultivation
- exotic invasion
- change in fire regime
- urban expansion
- climate change
- grazing impacts?

Prairie and Parkland Conservation Blueprint

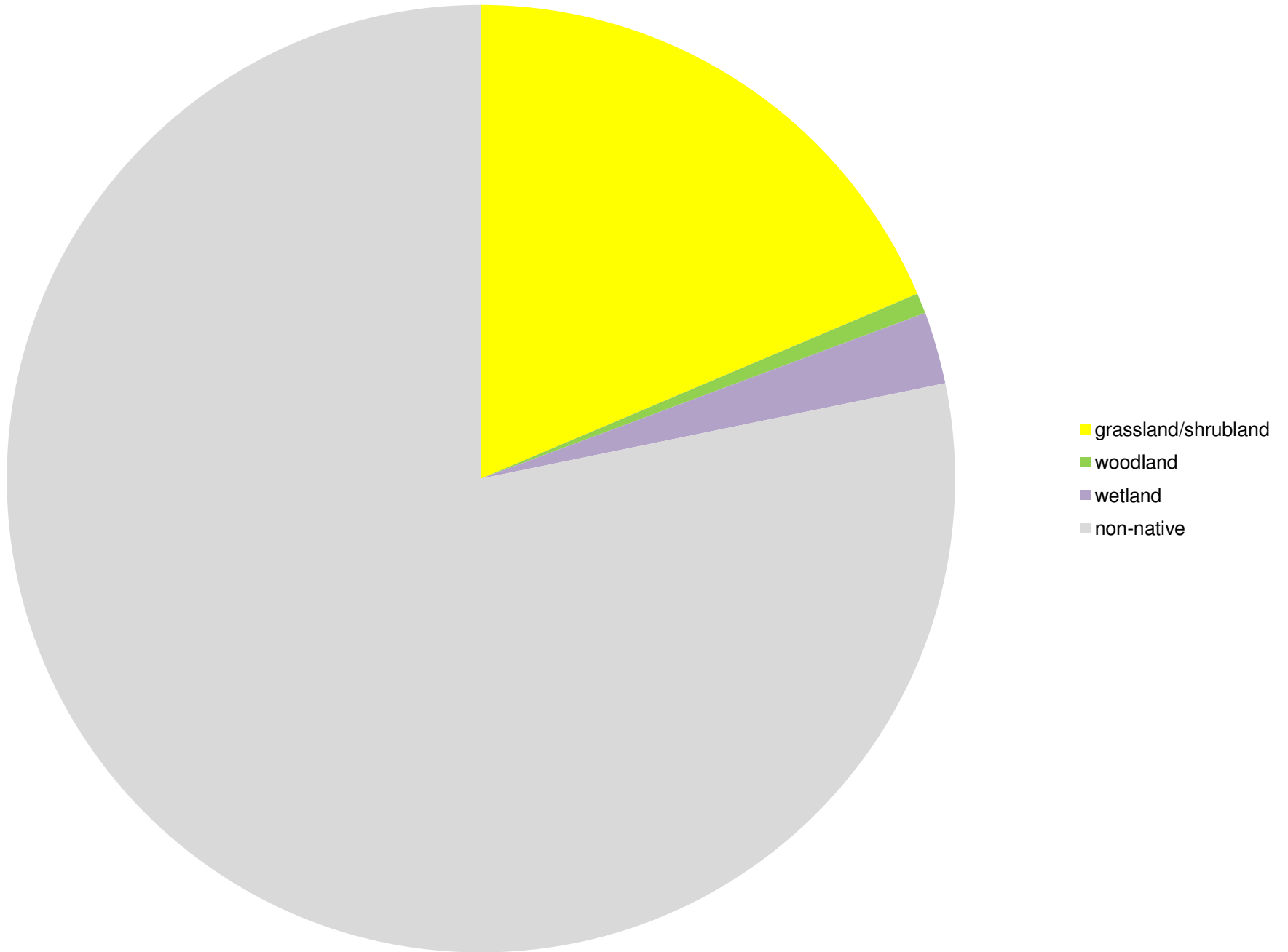
REMAINING NATURAL ECOLOGICAL SYSTEMS



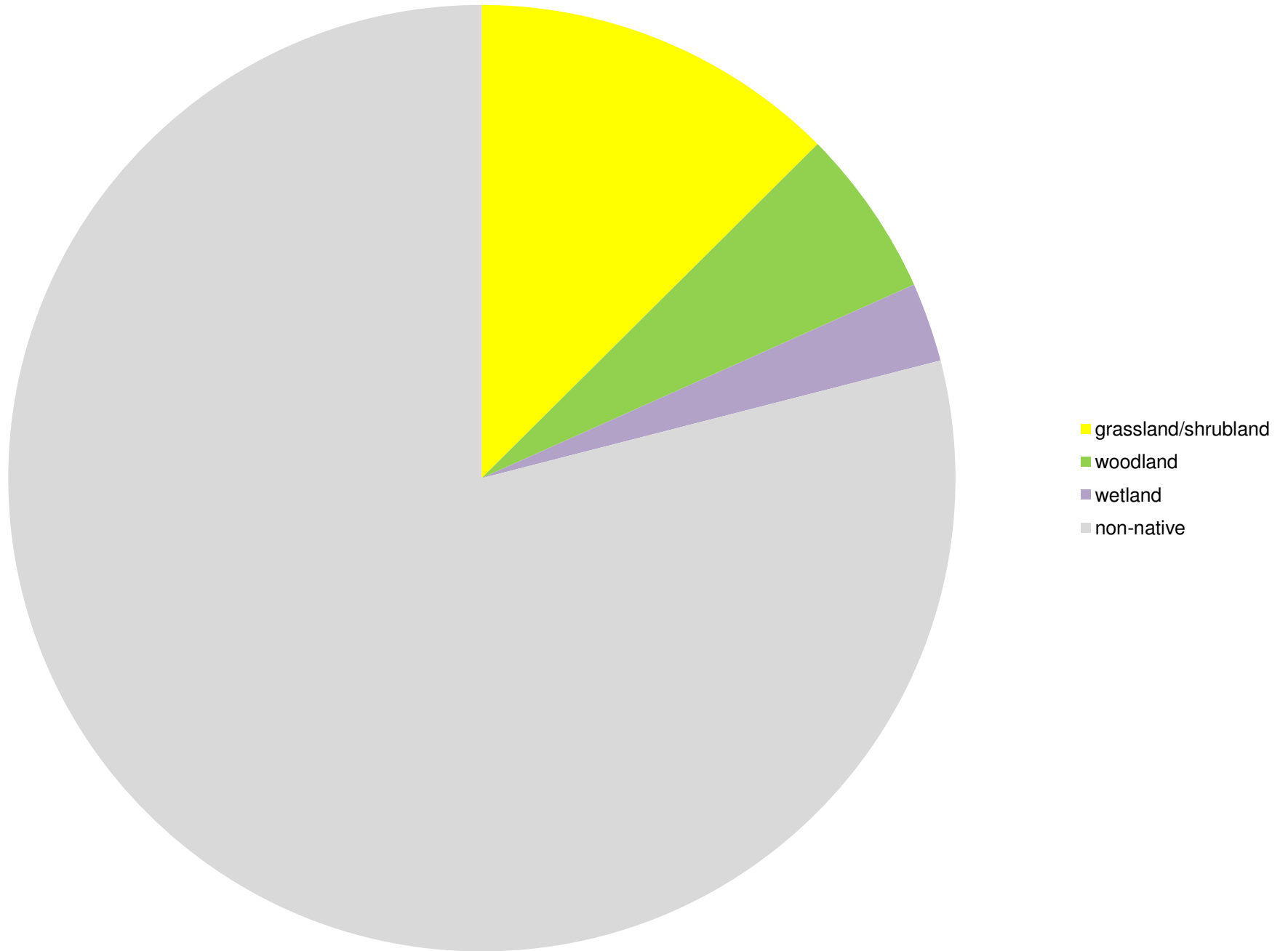
# Mixed Grassland



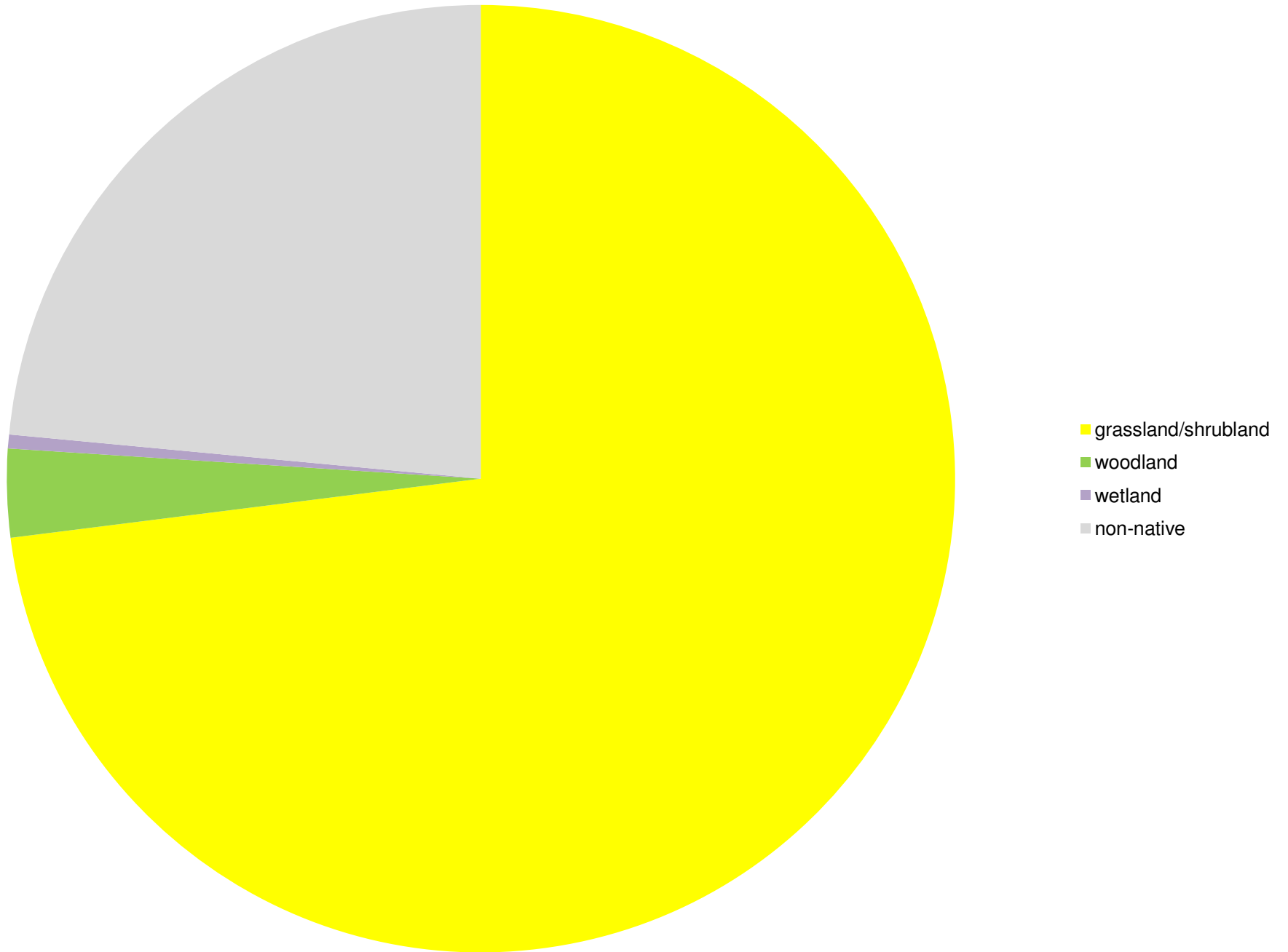
# Moist Mixed Grassland



# Aspen Parkland



# Cypress Upland





| <b>Ecoregion</b>              | <b>1990s remote sensing<br/>“grassland /<br/>shrubland”</b> | <b>1996 Census of<br/>Agriculture<br/>“natural land for<br/>pasture”</b> |
|-------------------------------|---|--|
| Mixed Grassland               | 41%   | 35%  |
| Moist Mixed Grassland         | 19%   | 18%  |
| Aspen Parkland                | 13%   | 17%  |
| Fescue Grassland              | 35%   | 32%  |
| Cypress Upland                | 73%   | 62%  |
| Southwest Manitoba<br>Uplands | 7%  | 11%  |
| Lake Manitoba Plain           |   | 19%  |
| OVERALL                       | 25%   | 23%  |

# Exotic invasion – smooth brome



# Woody encroachment (change in fire regime)



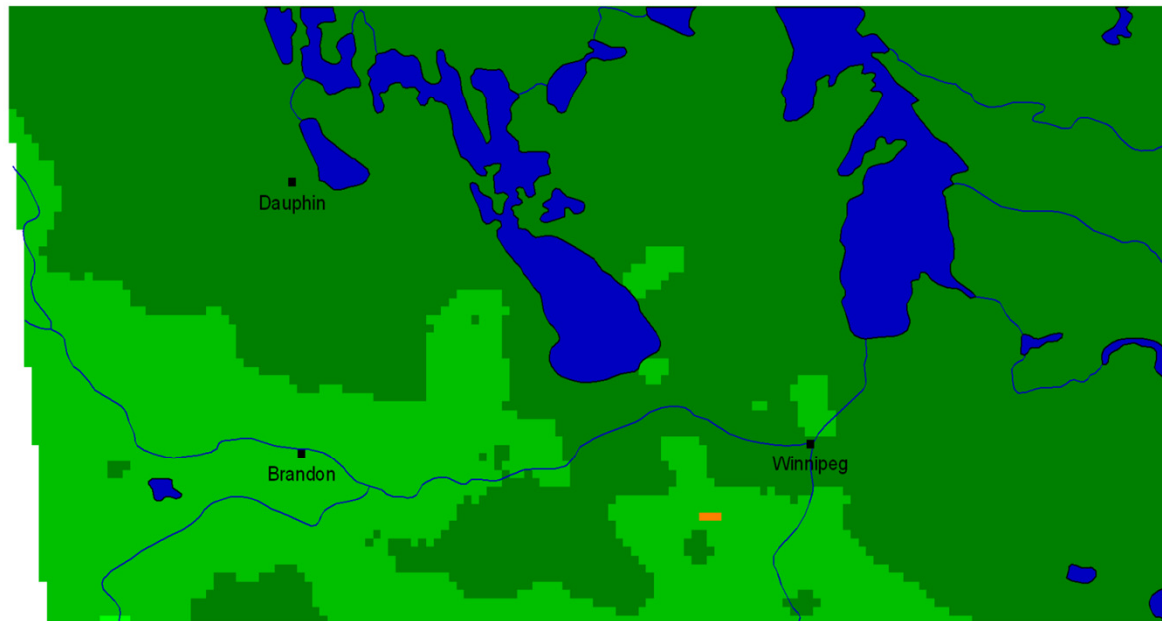
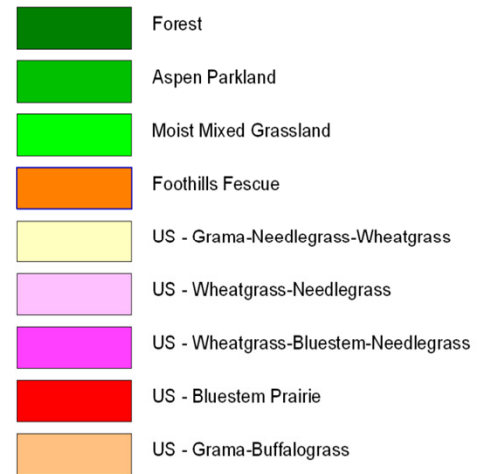
# Urban encroachment



# Climate change

- changes in vegetation zonation
- changes in productivity
- may increase exotic invasion problems

## Vegetation Zonation, 1961-90



## Vegetation Zonation in the 2080s

Cool, medium precipitation scenario (ECHAM4 A2)

