Ungulate Herbivory in Aspen Communities

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Road Map

1. What’s the issue?
2. Ungulates since settlement
3. Documentation methods
4. Response toolbox
5. Key references
What’s the issue?

- Aging regional aspen cohort
- Decreased disturbance
- Management for conifers
- Recent/expected drought
- Insect & disease incidence
- Unsuccessful recruitment

Not all aspen are alike
“...where there is extensive ungulate pressure... treatment alone...is not enough...actions must not be initiated before relief from excessive browsing is obtained.” –USFS, Region 3, 1994
Ungulates since settlement
(a quick and dirty history)

Sheep

1860 1900 1950 2000
Ungulates since settlement

(a quick and dirty history)

Cattle
Ungulates since settlement
(a quick and dirty history)
Ungulates since settlement
(a quick and dirty history)
Ungulates since settlement

.....Some Context

Rogers, et al., 2011

Mining
Water diversion
Grazing & burning
Logging
Dam building

YEAR
1850 1860 1870 1880 1890 1900 1910 1920 1930 1940

Rogers, et al., 2007

Rogers, et al., 2011
Documentation methods

Landscape studies

Natural refugia

Exclosures
Documentation methods

Feces analysis

Motion cameras
Documentation methods
Motion cameras (video)
Documentation methods

- **Aspen regeneration and recruitment levels**

<table>
<thead>
<tr>
<th>Aspen regeneration levels (suckers &lt; 6 ft. [2 m] height)</th>
<th>Aspen recruitment levels (stems &gt; 6 ft. [2 m] and &lt; canopy height)</th>
</tr>
</thead>
<tbody>
<tr>
<td>&gt;1000/acre</td>
<td>&gt;2500/ha</td>
</tr>
<tr>
<td>500-1000/acre</td>
<td>1250-2500/ha</td>
</tr>
<tr>
<td>&lt;500/acre</td>
<td>&lt;1250/ha</td>
</tr>
</tbody>
</table>

  - self-replacing
  - marginal
  - not self-replacing (recommend investigation)

Mueggler, 1989; Campbell & Bartos, 2001; Kurzel, et al., 2007; Rogers et al., 2010

- Landscape studies
- Natural refugia
- Exclosures
- Feces analysis
- Motion cameras

  - None are foolproof
  - Complementary results with multiple methods yields best results
In most Instances: multi-agency/interdisciplinary
• Alter livestock numbers, movement, seasonality
• Use guard dogs with mobile livestock
• Fencing: situation = size & style
• Enhance alternate forage/browse
• Collaborate with wildlife agency re: numbers
• Wildlife movement: special hunts, predators, other?
• Explore disturbance/scale/browse issues
• Restore natural disturbance regimes, if possible

Overarching focus of ecological process restoration
Response toolbox: Examples

Utah Forest Restoration Working Group (UFRWG)
Response toolbox: Examples

• Swap cattle/sheep
• New water additions
• Guard dogs w/sheep

Tom Tippets, UDAF, Grazing Improvement Program
Response toolbox: Examples

Fencing

VerCauteren, et al., 2007
Response toolbox: Examples

Wildlife numbers

Photo: Wayne Shepperd
Response toolbox: Examples

Disturbance: restoration & size
Key references

Cited here:


Key references

Other ungulate/aspen sources:


