A COMPARISON OF THE VEGETATION COMMUNITIES ON GEOMORPHIC AND NON-GEOMORPHIC RECLAIMED MINE LANDS IN NORTHWESTERN NEW MEXICO

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Introduction

- San Juan Mine (SJM)
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Geomorphic reclamation (Cottonwood south east or CWSE)

Non-geomorphic reclamation (West Gravel Hill or WGH)
Introduction

- San Juan Mine (SJM)
  - WGH
    - Non-geomorphic
    - Approximately 450 acres
    - Seeded 1986-1992
    - Vegetation sampled 2001-2003
  - CWSE
    - Geomorphic
    - Approximately 122 acres
    - Seeded 2002
    - Vegetation sampled 2012
Geomorphic and Non-geomorphic Vegetation Comparison

Procedures

Cover
Percent of the surface that is covered by vegetation and/or litter

Density
Number of plants per unit area
 Procedures
Results

Perennial cover (%)
Results

Geomorphic and Non-geomorphic Vegetation Comparison

Perennial cover (%)

- WGH_2001
- WGH_2003
- CWSE_2012

p = 0.01
p < 0.01
Geomorphic and Non-geomorphic Vegetation Comparison

Results

Shrub density (shrubs / ac)

[Bar graph showing shrub density for WGH_2001, WGH_2003, and CWSE_2012]
Results

Shrub density (shrubs / ac)

- WGH_2001
- WGH_2003
- WSE_2012

Statistical results:
- p = 0.34
- p = 0.13
Geomorphologic and Non-geomorphologic Vegetation Comparison

Results

Relative perennial grass cover (%)
Geomorphic and Non-geomorphic Vegetation Comparison

Results

Relative shrub cover (%)
Geomorphic and Non-geomorphic Vegetation Comparison

Results

Relative shrub cover (%)
Geomorphic and Non-geomorphic Vegetation Comparison

Results

Relative shrub cover (%)
Geomorphic and Non-geomorphic Vegetation Comparison

Results

Number of species

<table>
<thead>
<tr>
<th></th>
<th>Shrub species</th>
<th>Perennial grass species</th>
<th>Perennial forb species</th>
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</thead>
<tbody>
<tr>
<td>WGH 2001</td>
<td>4</td>
<td>5</td>
<td>1</td>
</tr>
<tr>
<td>WGH 2003</td>
<td>5</td>
<td>6</td>
<td>2</td>
</tr>
<tr>
<td>CWSE 2012</td>
<td>6</td>
<td>5</td>
<td>1</td>
</tr>
</tbody>
</table>
Conclusions

1) Perennial cover was significantly greater on the geomorphic vs. the non-geomorphic area

2) Shrub density not significantly different in the geomorphic vs. the non-geomorphic area

3) Overall species composition was similar; the geomorphic landscape possibly favors shrub species diversity while the non-geomorphic area possibly favors perennial grass species diversity
Further work

1) Continued sampling of geomorphic and non-geomorphic areas at San Juan Mine
Further work

1) Continued sampling of geomorphic and non-geomorphic areas at San Juan Mine

2) Initiation of sampling of geomorphic areas at La Plata Mine
Questions?