NRCS – Agency information and Plant Materials Centers

NRCS State Resource Conservationist: Karri Honaker
NRCS Great Basin Plant Materials Center Manager: Christopher Bernau
Who is NRCS

• **Federal agency**
  • United States Department of Agriculture
    • Farm Production and Conservation
    • Farm Service Agency
    • Natural Resources Conservation Service
    • Risk Management Agency

• **Conservation Partner to:**
  • Soil and Water Conservation Districts
  • Nevada Department of Forestry
  • Nevada Department of Wildlife
  • NGO’s- Pheasants Forever, Local conservation groups,
  • The list goes on….
History of NRCS

- 1933 the Soil Erosion Service was established
- Changed to the Soil Conservation Service (SCS) in 1935
- 1994 SCS’s name was changed to the NRCS
SWAPAH+E

- Soil
- Water
- Air
- Plants
- Animals
- Humans
- Energy
Conservation Planning

Help our customers care for and protect the land by finding a balance between their economic goals and the needs of the natural environment by creating sustainable systems that not only produce abundant agricultural products, but also a quality environment.

—SWAPAH+E
Conservation Planning- Process

– You will meet with your local planners to assess your property and the resource concerns.
– Based on the resource concerns you will come up with a plan to address those concerns
Incentive Programs

Rules for the new Farm Bill are forthcoming
Practices Available within Programs

Fencing - exclusion and cross-fence
Watering Systems - Wells, pumps, livestock pipeline, water troughs
Agricultural Waste Management - Heavy Use Areas
Composting Facilities
Vegetative practices - residue & tillage management, cover crops, conservation crop rotation
Wildlife Habitat - brush management, wildlife friendly fencing, habitat enhancement
Technical Assistance

Technical staff have background in:

– Engineering
– Soil science
– Biology
– Range Science
– Archeology
– Plant Materials
Welcome to Web Soil Survey (WSS)

Web Soil Survey (WSS) provides soil data and information produced by the National Cooperative Soil Survey. It is operated by the USDA Natural Resources Conservation Service (NRCS) and provides access to the largest natural resource information system in the world. NRCS has soil maps and data available online for more than 95 percent of the nation's counties and anticipates having 100 percent in the near future. The site is updated and maintained online as the single authoritative source of soil survey information.

Four Basic Steps

1. Define.
   Use the Area of Interest tab to define your area of interest.

2. View.
   Click the Soil Map tab.

I Want Help With...

- Getting Started With Web Soil Survey
- How to use Web Soil Survey
- How to use Web Soil Survey Online Help
- Known Problems and Workarounds
- Frequently Asked Questions
- Citing Web Soil Survey as a source of soils data

I Want To...

- Start Web Soil Survey (WSS)
- Know the requirements for running Web Soil Survey — will Web Soil Survey work in my web browser?
- Know the Web Soil Survey hours of operation
- Find what areas of the U.S. have soil data

Announcements/Events

- Web Soil Survey 2.3 has been released! View description of new features.
- Web Soil Survey Release History
What are Plant Materials Centers?

Dust Bowl era program
Erosion concerns

- 25 PMCs
- Strategically located

Plant Materials for Agricultural and Rangeland Conservation.
What We Produce

Products include:

• Publications:
  ➢ Technical Notes
  ➢ Manuals
  ➢ Guides
  ➢ Other publications
What We Produce

Products include:

• Publications
• Trainings
What We Produce

Products include:

• Publications
• Trainings
• Plant Releases
  ➢ ARS Partners

National Success:
- Since the 1930s-
• 740 plant releases
• 600 currently produced
• $3.65 private sector dollars earned for every dollar invested.
How we develop plant materials
Four types of releases

<table>
<thead>
<tr>
<th>Source Identified</th>
<th>Tested</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Local Ecotype</td>
<td>• Parents tested</td>
</tr>
<tr>
<td>• Collected from natural stands</td>
<td>• Proven genetic superiority for a trait.</td>
</tr>
<tr>
<td>• NDA certified</td>
<td>• Heritability of the trait is stable.</td>
</tr>
<tr>
<td>• 1 year</td>
<td>• 3-6 years</td>
</tr>
<tr>
<td>• Natural Only</td>
<td>• Natural or Genetically Manipulated</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Selected</th>
<th>Cultivar</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Phenotypic selections</td>
<td>• Clearly distinguished by a characteristic</td>
</tr>
<tr>
<td>• Untested parentage</td>
<td>• Is uniform in those characteristics</td>
</tr>
<tr>
<td>• Heritability of traits unknown</td>
<td>• Retains the characteristics when</td>
</tr>
<tr>
<td>• 1 – 2 year</td>
<td>reproduced</td>
</tr>
<tr>
<td>• Natural or Genetically</td>
<td>• 7-11+ years</td>
</tr>
<tr>
<td>Manipulated</td>
<td>• Natural or Genetically Manipulated</td>
</tr>
</tbody>
</table>
# How we develop plant materials

## Some Additional Differences

<table>
<thead>
<tr>
<th>Source Identified</th>
<th>Tested and Cultivar</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Limited genetic drift</td>
<td>• Some genetic drift</td>
</tr>
<tr>
<td>• Local Ecotype</td>
<td>• Usually not local ecotype</td>
</tr>
<tr>
<td>• No selection</td>
<td>• Agriculture focus</td>
</tr>
<tr>
<td>• Unknown characteristics</td>
<td>• Known characteristics</td>
</tr>
<tr>
<td>• Fastest to develop</td>
<td>• Slow to develop</td>
</tr>
<tr>
<td>• Space Constraints</td>
<td>• Space constraints</td>
</tr>
</tbody>
</table>

**Purpose:**
- **Source Identified**: Priority for reseeding local ecosystem
- **Tested and Cultivar**: Regional seeding when local ecotype is not available.
How we develop plant materials

Example

Indian Ricegrass – 6 Releases
  3 Cultivars
  3 Tested Germplasm
  - All sourced outside of Nevada.

Regionally tested
  ‘Nezpar’ higher elevations
  ‘Paloma’ lower elevations

White River Germplasm
  Reduced Dormancy

Ribstone Germplasm
  Acute glume pair angles
  -seed retention
Indian Ricegrass Common Garden Study
Germination (Hardness)
Seed Production
Seed timing
Shatter
Biomass
Drought and salt tolerance
-Others
How we develop plant materials

Example

Source Identified

Desired trait

Genetically Manipulated

Combination

Natural Track

E. “Kika De La Garza PMC, Kingsville, Texas

• Starr Germplasm Longspike silver bluestem
• Equal portions of five natural track germplasm
How we develop plant materials

Example

Final Product is a Plant Release
• Foundation Planting Maintained by PMC
• Pre-Harvest and Post-Cleaning certified
  ➢ <1% Weed Seed
  ➢ <15% inert material

Producer access depends on PMC
• Third party in State
  ➢ Crop Improvement Organization
  ➢ Land Grand University
• Paperwork varies

Plant Guides list which PMC maintains releases.
Plant Guide Example:

Adaptation
- Prefers sandy soils

Establishment
- Two types of dormancy
- 30 seeds per square ft
- 1-3 inch deep in coarse soils

Management
- Broadleaf herbicide after 4-6 leaf stage.

Seed harvest and storage
- 4-6 year old seed works best

Commercial Releases Available
- ‘Nezpar’, ‘Paloma’, etc.

Plant Guides exist for most conservation plants.
Where to find Plant Guides

USDA Plants Database: Plants.usda.gov

Search by:
- Common Name
- Scientific Name
- Symbol

The PLANTS Database provides standardized information about the vascular plants, mosses, liverworts, hornworts, and lichens of the U.S. and its territories.

Plant of the Week

mango
Mangifera indica L.
Click on the photo for a full plant profile.

Spotlights

2016 National Wetland Plant List
The wetland indicator status ratings from the 2016 National Wetland Plant List (NWPL) are now on our species profile pages and are fully searchable.

NRCS pollinator references and documents—Updated
See NRCS pollinator-related literature and documentation, including the updated Technical Note TN.190.B.78 - Using 2014 Farm Bill Programs for Pollinator Conservation.

I Want Help

- Introduction to PLANTS
- Frequently Asked Questions
- Citing the PLANTS Database
- Contact Us

I Want To...

- See a list of the plants in my state
- Learn about the wetland plants in my region
- Learn about all the endangered plants of the U.S.
- Learn about noxious and invasive plants
- Search for and view images of plants
- Read and print abstracts about important conservation plants
- Download data or posters
- Contribute plant distribution information to PLANTS
- Get ecological descriptions of sites from around the country
- View the USDA Plant Hardiness Zone Map
Note: Customize seeding rate by your seed size

<table>
<thead>
<tr>
<th>Indian Ricegrass</th>
<th>Elevation (Location)</th>
<th># Seeds/lb</th>
<th>Seeds/ft² at 1lb/a</th>
<th># of lb/a for 30 seeds/ft²</th>
<th># seeds/ft² at 8 lb/a</th>
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</thead>
<tbody>
<tr>
<td>'Nezpar'</td>
<td>Idaho</td>
<td>112,671</td>
<td>2.6</td>
<td>11.6</td>
<td>21</td>
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<tr>
<td>'Rimrock'</td>
<td>Montana</td>
<td>113,375</td>
<td>2.6</td>
<td>11.5</td>
<td>21</td>
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<tr>
<td>Ribstone Germplasm</td>
<td>Alberta</td>
<td>121,419</td>
<td>2.8</td>
<td>10.8</td>
<td>22</td>
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<tr>
<td>'Paloma'</td>
<td>Colorado</td>
<td>124,259</td>
<td>2.9</td>
<td>10.5</td>
<td>23</td>
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<tr>
<td>ACHY9-Edwards Creek Valley</td>
<td>5336</td>
<td>141,277</td>
<td>3.2</td>
<td>9.2</td>
<td>26</td>
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<tr>
<td>White River Germplasm</td>
<td>Colorado</td>
<td>142,163</td>
<td>3.3</td>
<td>9.2</td>
<td>26</td>
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<tr>
<td>ACHY4-Railroad Valley</td>
<td></td>
<td>149,670</td>
<td>3.4</td>
<td>8.7</td>
<td>27</td>
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<tr>
<td>Star Lake Germplasm</td>
<td>New Mexico</td>
<td>158,014</td>
<td>3.6</td>
<td>8.3</td>
<td>29</td>
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<tr>
<td>ACHY3-Hot Creek Valley</td>
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<td>196,746</td>
<td>4.5</td>
<td>6.6</td>
<td>36</td>
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<td>ACHY2-Central Stone Cabin Valley</td>
<td>5847</td>
<td>202,455</td>
<td>4.6</td>
<td>6.5</td>
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<td>ACHY6-Lahontan Valley 2</td>
<td></td>
<td>242,513</td>
<td>5.6</td>
<td>5.4</td>
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<tr>
<td>ACHY5-Lahontan Valley</td>
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<td>296,405</td>
<td>6.8</td>
<td>4.4</td>
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<tr>
<td>ACHY16-North Monitor Valley</td>
<td>6476</td>
<td>303,344</td>
<td>7.0</td>
<td>4.3</td>
<td>56</td>
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<tr>
<td>ACHY12-North Grass Valley</td>
<td>5946</td>
<td>310,616</td>
<td>7.1</td>
<td>4.2</td>
<td>57</td>
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<tr>
<td>ACHY8-Bench Creek</td>
<td></td>
<td>385,957</td>
<td>8.9</td>
<td>3.4</td>
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<td>ACHY1-South Ralston Valley</td>
<td>5408</td>
<td>397,807</td>
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<tr>
<td>ACHY10-Smith Creek Valley</td>
<td>6051</td>
<td>399,559</td>
<td>9.2</td>
<td>3.3</td>
<td>73</td>
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<tr>
<td>ACHY15-Central Monitor Valley</td>
<td>7078</td>
<td>403,111</td>
<td>9.3</td>
<td>3.2</td>
<td>74</td>
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<tr>
<td>ACHY11-Grass Valley</td>
<td></td>
<td>421,860</td>
<td>9.7</td>
<td>3.1</td>
<td>77</td>
</tr>
<tr>
<td>ACHY14-Central Great Smokey Valley</td>
<td>5792</td>
<td>425,822</td>
<td>9.8</td>
<td>3.1</td>
<td>78</td>
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<tr>
<td>ACHY7-Fairview Valley</td>
<td></td>
<td>546,386</td>
<td>12.5</td>
<td>2.4</td>
<td>100</td>
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<tr>
<td>ACHY13-North Great Smokey Valley</td>
<td>5878</td>
<td>652,518</td>
<td>15.0</td>
<td>2.0</td>
<td>120</td>
</tr>
</tbody>
</table>

* The plant guide on Indian Ricegrass Recommends 30 seeds per square ft., or a seeding rate of 8 lbs/a.
In addition to Plant Guides:

Manual: Native Seed Production
- Developed by Tucson PMC
- General information

Can be found on the National PMC website
  ➢ Under AZPMC Publications

In addition to Plant Guides:

Manual: Native Seed Production for PNW
- Developed by ORPMC
- Some General Information
- Specific information for selected species

Can be found on the National PMC website
  ➢ Under ORPMC Publications

Any Questions?
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