Seeds of Success
Web Portal for Accessioning

2017 National Native Seed Conference
February 16, 2017
Washington, DC

Mike O’Neal
BG-BASE, Inc.
moneal@bg-base.com
Why a web portal? Some history

• Oldest SOS accession: August 28, 2000, ID931-DEBOLT2240, Philadelpus lewisii
Why a web portal? Some history

• *Oldest* SOS accession: August 28, 2000, ID931-DEBOLT2240, *Philadelpus lewisii*

• First *databased* accession: June 8, 2006, CO932-1, *Heterotheca villosa*
Data captured by filling out forms in the field and sending to D.C.
“Quick, grab the decoder...”

<table>
<thead>
<tr>
<th>Associated Species (Scientific Name):</th>
<th>SAVE-4, Salsola kali, Descurainia sophia, Cleome rutec</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ecological Site Description, Habitat Type and/or National Vegetation Classification :</td>
<td>Semi-Desert Sound Basin Big Sagebrush</td>
</tr>
<tr>
<td>Location Details:</td>
<td>1st BLM road S of Hanksville to right off of Henry road S. access road. Continue 1.2 miles SW.</td>
</tr>
</tbody>
</table>

![Image of a decoder box and a man holding a phone]
Why a web portal? Some history

- **Oldest SOS accession:** August 28, 2000, ID931-DEBOLT2240, *Philadelphus lewisii*

- First *databased* accession: June 8, 2006, CO932-1, *Heterotheca villosa*

- 2009 Technology Improvement Project
Technology Improvement Project (2009)

- Rugged laptops and GPS units provided
- Capture data electronically in the field
- Data emailed to Washington, DC office
- Electronically incorporated in national SOS database
**BG-BASE** configured to capture data pertinent to SOS collecting teams. (Fields in black were turned off.)
Data captured by filling out forms in the field and sending to D.C.
Why a web portal? Some history

• Oldest SOS accession: August 28, 2000, ID931-DEBOLT2240, Philadelpus lewisii

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• 2009 Technology Improvement Project

• 2016 SOS web portal goes live
Web-based accessioning

Facilitates entry of accession data directly into the SOS national database by the collectors of the material instead of having this data entry occur solely in the Washington D.C. office.
Web-based accessioning

• Available to any SOS partner with a web connection and granted access
Web-based accessioning

• Available to any SOS partner with a web connection and granted access

• Interface customized specifically for the SOS program
Web-based accessioning

• Available to any SOS partner with a web connection and granted access

• Interface customized specifically for the SOS program

• Data incorporated directly into the national database and then reviewed by SOS staff
Far less training needed than desktop BG-BASE, training can be done on-line
Web-based accessioning

• Far less training needed than desktop *BG-BASE*, training can be done on-line

• On-line reporting tool more intuitive
Web-based accessioning

• Far less training needed than desktop BG-BASE, training can be done on-line

• On-line reporting tool more intuitive

• Web form can be accessed via tablets
Search criteria

Seeds of Success Field Data Form

Search (look up existing accession record)

- Genus or species or family: [LIA] [PUN] [Go]
- Seed Collection Ref. Number: [Go]
- Collector code: [Go]
### Search results

<table>
<thead>
<tr>
<th>Name</th>
<th>Acc#</th>
<th>Region</th>
<th>State</th>
<th>Year</th>
</tr>
</thead>
<tbody>
<tr>
<td>LIATRIS punctata</td>
<td>CBG-1625</td>
<td>Southern Rockies (Omernik)</td>
<td>Colorado</td>
<td>2010</td>
</tr>
<tr>
<td>LIATRIS punctata</td>
<td>CBG-1887</td>
<td>Western High Plains (Omernik)</td>
<td>Colorado</td>
<td>2011</td>
</tr>
<tr>
<td>LIATRIS punctata</td>
<td>CO932-197</td>
<td>Southern Rockies (Omernik)</td>
<td>Colorado</td>
<td>2009</td>
</tr>
<tr>
<td>LIATRIS punctata</td>
<td>CO932-256</td>
<td>Western High Plains (Omernik)</td>
<td>Colorado</td>
<td>2010</td>
</tr>
<tr>
<td>LIATRIS punctata</td>
<td>CO932-281</td>
<td>Southern Rockies (Omernik)</td>
<td>Colorado</td>
<td>2011</td>
</tr>
<tr>
<td>LIATRIS punctata</td>
<td>CO932-52</td>
<td>Southern Rockies (Omernik)</td>
<td>Colorado</td>
<td>2003</td>
</tr>
<tr>
<td>LIATRIS punctata</td>
<td>MT020-35</td>
<td>Northwestern Great Plains (Omernik)</td>
<td>Montana</td>
<td>2012</td>
</tr>
<tr>
<td>LIATRIS punctata</td>
<td>MT050-5</td>
<td>Middle Rockies (Omernik)</td>
<td>Montana</td>
<td>2013</td>
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<tr>
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<td>Montana</td>
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<tr>
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<td>Northwestern Great Plains (Omernik)</td>
<td>Wyoming</td>
<td>2015</td>
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<tr>
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<td>WY930A-35</td>
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</tr>
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[Export Data] [Close]
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<td>2010</td>
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</tbody>
</table>
**Collection Data**

**LIATRIS punctata**

<table>
<thead>
<tr>
<th>Genus or species or name code:</th>
<th>6297</th>
</tr>
</thead>
<tbody>
<tr>
<td>Family:</td>
<td>ASTERACEAE</td>
</tr>
<tr>
<td>Genus:</td>
<td>LIATRIS</td>
</tr>
<tr>
<td>Species:</td>
<td>punctata</td>
</tr>
<tr>
<td>No. of Plants Sampled (min. 50):</td>
<td>Height: -0.5'</td>
</tr>
<tr>
<td>No. of Plants Found (approx.):</td>
<td>2000</td>
</tr>
<tr>
<td>Area Sampled (acres):</td>
<td>20</td>
</tr>
<tr>
<td>Seeds Collected From:</td>
<td>Plants ○ Ground ○ Both ○ Unk</td>
</tr>
<tr>
<td>Plant Height (feet):</td>
<td></td>
</tr>
<tr>
<td>Field Notes:</td>
<td>~400 plants sampled</td>
</tr>
<tr>
<td>Common Name(s) of Plant:</td>
<td>dotted gayfeather</td>
</tr>
<tr>
<td>NRCS plants code:</td>
<td>LIPU</td>
</tr>
</tbody>
</table>

**Location Data**

<table>
<thead>
<tr>
<th>Ecoregion (Omernik III):</th>
<th>17E -- Middle Rockies (Omernik)</th>
</tr>
</thead>
<tbody>
<tr>
<td>State:</td>
<td>Montana</td>
</tr>
<tr>
<td>County:</td>
<td>Madison</td>
</tr>
<tr>
<td>Subunit (BLM area, park, etc):</td>
<td></td>
</tr>
<tr>
<td>Land Owner:</td>
<td>BLM and State</td>
</tr>
<tr>
<td>Location Details:</td>
<td>From Ennis, MT drive south on Hwy 287 for about 18 miles. Turn west towards McAfee Bridge and continue about 0.8 miles just after crossing McAfee bridge turn left (south) and continue about 2.5 miles toward Ruby Creek Campground. Just past the campground is the collection site. The collection site extends up on to the Wall Creek State Wildlife Management Area.</td>
</tr>
<tr>
<td>Source Used:</td>
<td>GPS ○ Map ○ None ○ None ○ Exact (GPS)</td>
</tr>
<tr>
<td>Accurary:</td>
<td>Exact (GPS)</td>
</tr>
<tr>
<td>Lat. (dg/min/sec):</td>
<td>45° 3' 26.29&quot; N</td>
</tr>
<tr>
<td>Lon. (dg/min/sec):</td>
<td>111° 40' 10.38&quot; W</td>
</tr>
<tr>
<td>Elevation:</td>
<td>5536</td>
</tr>
<tr>
<td>Elevation Unit:</td>
<td>Feet ○</td>
</tr>
<tr>
<td>Non-BLM Permission Filed:</td>
<td>○ Yes ○ No ○ N/A</td>
</tr>
<tr>
<td>Area within subunit:</td>
<td></td>
</tr>
</tbody>
</table>
### Habitat Data

**Associated Species**
- HESPEROSTIPA comata
- ERIOGONUM microthecum
- PSEUDOROEGERIA spicata
- ANTTENNARIA sp.

**Scientific Name:**
- POA secunda

**Habitat:**

**Modifying Factors:**
- Mowed
- Burned
- Grazed
- Flooded
- Seeded
- Trampled
- Other: [ ]

**Land Form:**
- River terrace

**Land Use:**

**Geology:**
- Mixed alluvium

**Slope (degrees):** 2 degrees

**Aspect:**
- N
- NE
- E
- SE
- S
- SW
- W
- NW

**Soil Texture:**
- Clay
- Silt
- Sand
- Other

**Soil Color:**

### Herbarium Vouchers

**Number of pressed specimens:** 3

**Date voucher was taken:**

**Herbaria receiving the specimens:**

### Specialist Identification

**Identified by:** in field

**Location:**
- In field
- From pressed specimen on day of collection
- From pressed specimen on another date
- From photograph

**Date identified:**

Current Collection Summary

ca. 3000 of 21,141 accessions created using web portal
Where to from here?

- Faster searches and more search options
- Enhance data entry efficiency
  (record copy, field copy)
- Additional mapping options
- Continued data integrity checks
- Greater coordination / synchronization with other cooperators (PLANTS, GRIN, ???)
- Utilization of other modules in BG-BASE?
Where to from here?

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Collection date / range
Omernik region / state
???
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<thead>
<tr>
<th>Genus or species or family:</th>
<th>WY930A-35</th>
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<th>State: Colorado</th>
<th>Year: 2010</th>
</tr>
</thead>
<tbody>
<tr>
<td>Liatris punctata</td>
<td>WY932A-154</td>
<td>Location: Southern Rockies (Omernik)</td>
<td>State: Colorado</td>
<td>Year: 2013</td>
</tr>
</tbody>
</table>

Map Results

[Image of Seed of Success Field Data Form]

[Image of Search Results]

[Image of Export Data and Close buttons]
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  (record copy, field copy)
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- What else can BG-BASE do?
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- In field

Location:
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Date identified:

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- Additional mapping options
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- What else can BG-BASE do?
Where to from here?

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- Enhance data entry efficiency
  (record copy, field copy)
- Additional mapping options
- Continued data integrity checks
- Greater coordination / synchronization with other cooperators (PLANTS, GRIN, ???)
- What else can BG-BASE do?
What else can *BG-BASE* do?

**Inventory Management**

*(Where is that Philadelphus seed collected in 2000?)*

<table>
<thead>
<tr>
<th>Code</th>
<th>Location</th>
<th>Grid</th>
<th>X</th>
<th>Y</th>
<th>Z</th>
<th>Change type</th>
<th>Plant date</th>
<th>#Plts</th>
</tr>
</thead>
<tbody>
<tr>
<td>EN</td>
<td>East Nursery, Dana Greenl 28-08</td>
<td>SW</td>
<td>756</td>
<td>293</td>
<td></td>
<td>M moved</td>
<td>Sep 2008</td>
<td>1</td>
</tr>
<tr>
<td>EN</td>
<td>East Nursery, Dana Greenl 28-16</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M moved</td>
<td>Jun 2007</td>
<td>1</td>
</tr>
<tr>
<td>SH</td>
<td>Shade House, Dana Greer 18-09-01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M moved</td>
<td>Jul 2006</td>
<td>1</td>
</tr>
<tr>
<td>SH</td>
<td>Shade House, Dana Greer 19-20-01</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>M moved</td>
<td>Jun 2004</td>
<td>1</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Code</th>
<th>Condition</th>
<th>Q</th>
<th>Check dt</th>
<th>Rep</th>
<th>Veg</th>
<th>S</th>
<th>C</th>
<th>Check note</th>
<th>Check by</th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>G</td>
<td>good</td>
<td>D</td>
<td>21 May 2015</td>
<td>O</td>
<td></td>
<td></td>
<td></td>
<td>Moderate insect damage (chewed leaves); Port, K., Wood, J</td>
<td>Priest, M</td>
<td></td>
</tr>
<tr>
<td>E</td>
<td>excellent</td>
<td>D</td>
<td>23 Sep 2013</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>2-4&quot; inches annual growth; vigorous; singl</td>
<td>Port, K., Damery</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>good</td>
<td>D</td>
<td>19 Nov 2010</td>
<td>DA</td>
<td></td>
<td></td>
<td></td>
<td>Developing a new leader at about 1 m. Port, K., Damery</td>
<td>Kadis, I</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>good</td>
<td>D</td>
<td>22 Sep 2008</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.6 M</td>
<td>Kadis, I</td>
<td></td>
</tr>
<tr>
<td>G</td>
<td>good</td>
<td>D</td>
<td>9 Aug 2007</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>1.1 M</td>
<td>Kadis, I</td>
<td></td>
</tr>
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What else can *BG-BASE* do?

Seed Bank Management
What else can *BG-BASE* do?

Germination and Viability Testing Data
What else can BG-BASE do?

Desiderata / Requests for Material
Selected projects and collaborators

• Seeds of Success
• RBG Edinburgh Multisite Search
• BLM Recovery Plan Database

• Flora Conservanda
• RHS Plantfinder
• Seed Herbarium Image Project - Harvard (SHIP)
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The preceding presentation was delivered at the

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This and additional presentations available at http://nativeseed.info