

WHERE'S THE SEED?!

Using AIM and other publicly available data to locate adequate seed populations



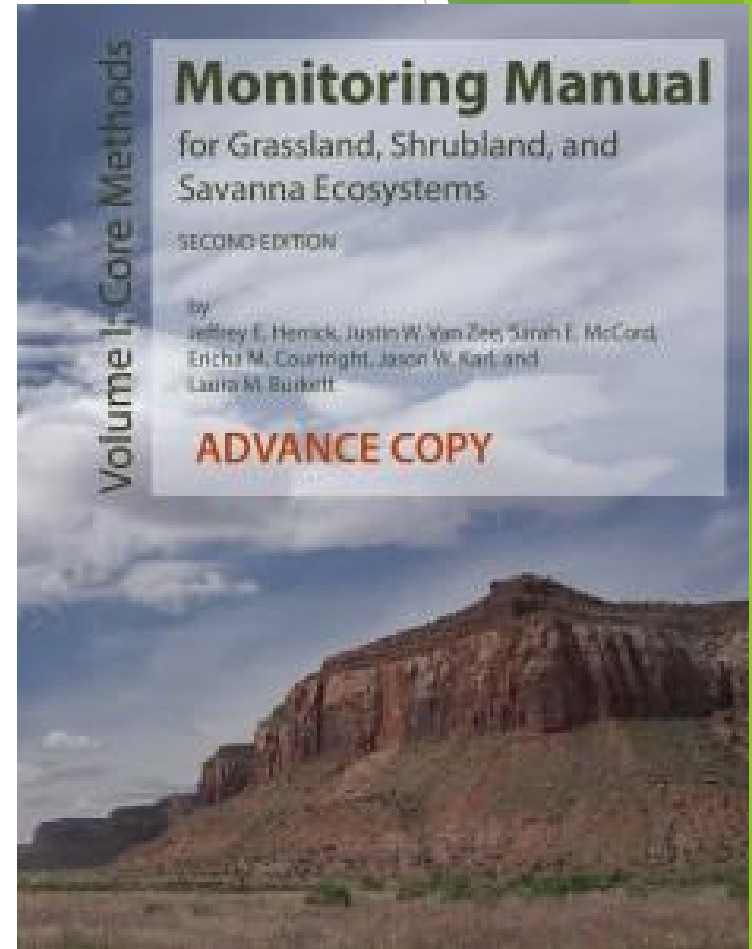
Jessa Davis

Botanist/Ecologist

Bureau of Land Management – Boise District

ASSESSMENT, INVENTORY AND MONITORING (AIM)

- ▶ Herrick, Jeffrey E., et al. "Monitoring manual for grassland, shrubland and savanna ecosystems (2005).
- ▶ <http://www.landscapetoolbox.org/>
- ▶ Stratified, random sample design
- ▶ Provides collection sites across the landscape
 - ▶ Database for Inventory, Monitoring and Assessment (DIMA)
 - ▶ Terrestrial Assessment, Inventory and Monitoring Database (TerrADat)



DIGITAL HERBARIA



ADDITIONAL DATASETS

- ▶ Habitat Assessment Framework (HAF)
- ▶ Trend, Legacy
- ▶ Emergency Stabilization and Rehabilitation (ESR)
- ▶ Landscape Monitoring Framework (LMF) (NRI)
- ▶ LANDFIRE (Biophysical Setting – BPS)



WHAT YOU'LL NEED

- ▶ Target species list (“work horse”, pollinator species, sage grouse preferred forbs) (see SOS protocol)
- ▶ Current collection data (if available)
- ▶ Spatial information of vegetation treatments, and other “no go” areas
- ▶ DIMA reports
- ▶ Herbarium shapefiles

DATABASE FOR INVENTORY, MONITORING AND ASSESSMENT

- ▶ Run a Species Report or Species Richness Report to correlate species with particular sites
- ▶ Run LPI Report for select sites with target species
- ▶ Use pivot tables!
- ▶ Join all these data to a plot shapefile (whether that's from TerrADat or DIMA)

The screenshot shows the 'Report Manager' window with the following sections:

- Report Manager**: Includes 'Report Level: Selected Plot(s)'.
- Select Date Range**: Start Date: Jan 1 2016; End Date: Feb 10 2017.
- Select Method**: A list of report types with 'Species Richness' selected.
- Select Sites/Plots/Lines**: Three columns for selecting data. The 'Select Plot(s)' column is currently selected.
- Buttons**: 'Close', 'Help', 'All', and 'Reset' buttons are present.
- Footer**: 'Top Level...' options for 'By Site' and 'By Plot Tags', and a note: 'shift-click to select continuous range; ctrl-click to select individual items'.

| Select Site(s) | Select Plot(s) | Select Line(s): |
|-------------------------|-------------------------|--------------------------------------|
| Basin Sagebrush Cool M | Low Sagebrush LowWD-276 | Basin Sagebrush Cool M BasinCM-003 1 |
| Big Sagebrush Cool Mois | Low Sagebrush LowWD-277 | Basin Sagebrush Cool M BasinCM-003 2 |
| Big Sagebrush Warm Dry | Low Sagebrush LowWD-307 | Basin Sagebrush Cool M BasinCM-003 3 |
| Forest | Other UA-326 | Basin Sagebrush Cool M BasinCM-004 1 |
| Low Sagebrush Cool Mois | Other UA-328 | Basin Sagebrush Cool M BasinCM-004 2 |
| Low Sagebrush Warm D | Other UA-346 | Basin Sagebrush Cool M BasinCM-004 3 |
| Other | Salt Desert Mix SD-366 | Basin Sagebrush Cool M BasinCM-021 1 |
| Salt Desert Mix | Salt Desert Mix SD-367 | Basin Sagebrush Cool M BasinCM-021 2 |
| | Salt Desert Mix SD-368 | Basin Sagebrush Cool M BasinCM-021 3 |
| | Salt Desert Mix SD-369 | Big Sagebrush Cool Mois BigCM-041 1 |
| | Salt Desert Mix SD-370 | Big Sagebrush Cool Mois BigCM-041 2 |

File Home Insert Page Layout Formulas Data Review View Acrobat

Paste Cut Copy Format Painter Clipboard

Calibri 11 A A Bold Italic Underline Font

Wrap Text Merge & Center Alignment

General Number

Conditional Formatting Styles

A1 Basin Sagebrush Cool Moist/BasinCM-003

| | A | B | C | D | E | F |
|----|---|------------------------|---|---|------------------------|---|
| 1 | Basin Sagebrush Cool Moist/BasinCM-003 | | | Basin Sagebrush Cool Moist/BasinCM-004 | | |
| 2 | Plot Species | Density Species | | Plot Species | Density Species | |
| 3 | ACMI2 (Achillea millefolium) | | | POSE (Poa secunda) | | |
| 4 | FEID (Festuca idahoensis) | | | COLI2 (Collomia linearis) | | |
| 5 | ARART (Artemisia arbuscula ssp. thermopola) | | | ALAC4 (Allium acuminatum) | | |
| 6 | ARTRV (Artemisia tridentata ssp. vaseyana) | | | COGR2 (Collinsia grandiflora) | | |
| 7 | ALAC4 (Allium acuminatum) | | | HOUM (Holosteum umbellatum) | | |
| 8 | POBU (Poa bulbosa) | | | MIGR (Microsteris gracilis) | | |
| 9 | POSE (Poa secunda) | | | LUPINPF (Lupinus) | | |
| 10 | PUTR2 (Purshia tridentata) | | | PSSP6 (Pseudoroegneria spicata) | | |
| 11 | CHVI8 (Chrysothamnus viscidiflorus) | | | LOMATPF (Lomatium) | | |
| 12 | JUSC2 (Juniperus scopulorum) | | | ELEL5 (Elymus elymoides) | | |
| 13 | ACTH7 (Achnatherum thurberianum) | | | PUTR2 (Purshia tridentata) | | |
| 14 | PSSP6 (Pseudoroegneria spicata) | | | ARTRV (Artemisia tridentata ssp. vaseyana) | | |
| 15 | DRVE2 (Draba verna) | | | PF58 | | |
| 16 | HOUM (Holosteum umbellatum) | | | ARHO2 (Arabis holboellii) | | |
| 17 | PHLO2 (Phlox longifolia) | | | PF59 | | |
| 18 | PPSH | | | AF95 | | |
| 19 | AMAL2 (Amelanchier alnifolia) | | | FEID (Festuca idahoensis) | | |
| 20 | COGR2 (Collinsia grandiflora) | | | PPSH | | |
| 21 | LUPINPF (Lupinus) | | | JUSC2 (Juniperus scopulorum) | | |
| 22 | AG03 | | | PG16 | | |
| 23 | AF84 | | | ARAR8 (Artemisia arbuscula) | | |
| 24 | DEPI (Descurainia pinnata) | | | CREPIPF (Crepis) | | |
| 25 | AF85 | | | AF147 | | |
| 26 | CAMAM9 (Calochortus macrocarpus var. macrocarpus) | | | DELPHAF (Delphinium (annual forb)) | | |
| 27 | CRAC2 (Crepis acuminata) | | | GALIUF (Galium (annual forb)) | | |
| 28 | FRAP (Erigeron aphanactis) | | | LASE (Lactuca serriola) | | |

Retrieving Herbarium Data

- ▶ Download data as kmz or kml files
- ▶ Join to AIM data layer

Home Specimen Data Online resources Member Herbaria External Links Documentation News About Contact Us

« Browse
« Search

143 matching records found. 84 records displayed on map.
 Label Query 1: (Genus = "Oenothera" AND including synonyms, State = "ID" AND County = "Owyhee" AN) Sort By: Year. Options: exclu

Group by: (not grouped) then sort by: Collection Year

View as: Table Label & images Images only

0 - 49

1. *Oenothera cespitosa* Nutt. ssp. *marginata* (Nutt. Hook. & Arn.) Munz, orth. var. Onagraceae

U.S.A., Idaho, Owyhee County: West side of Hwy 95 intersection of Hwy 95 and Hwy 55 west of Marsing, ID. 43.39962° N, -116.88056° W
Datum: NAD 83. Coordinate Source: GPS.

SE Aspect, Volcanic Ash and rocky soil, dominant plants include cheat grass, *Artemisia tridentata*, and rabbit brush. Purple petals, 7-12 inches tall, sparsely populated, hairy leaflets.

Katie Williams 30 May 21, 2015 CIC: 49367

With Miles Ranck

2. *Oenothera deltoides* Torr. & Frém. Onagraceae

U.S.A., Idaho, Owyhee County: 440 meters west of HWY 51 on Sugar Valley Road. Elev. 2760
42.80758° N, -115.90584° W
Datum: NAD 83. Coordinate Source: Specimen Label.

Hillside, rabbit brush, salt brush, grease wood dominant, western aspect, sandy soil, hilly.

Miles Ranck 35 May 26, 2015 CIC: 49374

With Katie Williams

3. *Oenothera cespitosa* Nutt. ssp. *marginata* (Nutt. ex Hook. & Arn.) Munz, orth. var. Onagraceae

U.S.A., Idaho, Owyhee County: On top of barren lacustrine/ash outcrop north of the dirt road (to Snake River Birds of Prey Conservation Area) that leaves Hwy 78 0.8 miles southeast of Sinker Ck. Ash beds are about 4 miles east of Hwy 78. Plants located west of lat long cited. Elev. 2900 ft. 43.12941° N, 116.39468° W
Datum: NAD 83. Coordinate Source: Specimen Label.

On barren lacustrine deposits with little plant cover. Nearby dominants include *Elymus elymoides*, *Poa secunda* (sandbergii), *Tetradymia canescens*, and *Chrysothamnus viscidiflorus* var. *puberulus*. Reproductive state: Flowers.

D. Mansfield 15-022 May 23, 2015 CIC: 50316

4. *Oenothera caespitosa* Nutt. Onagraceae

= *Oenothera cespitosa* Nutt.

U.S.A., Idaho, Owyhee County: east side of Upper Reynolds Creek Rd, at

Help

ArcToolbox

ArcToolbox

- + 3D Analyst Tools
- + Analysis Tools
- + Cartography Tools
- + Conversion Tools
- + Excel
- + From GPS
- + From KML
- + KML To Layer

WORK SMARTER, NOT HARDER

- ▶ **Choose parameters that are important to you**
 - **>25% foliar cover for shrubs**
 - **>15% foliar cover for grasses**
 - **>5% foliar cover for forbs**
- ▶ **~ 1 mile or less from herbarium vouchers**
- ▶ **Sites with identified target forbs**



This is all good, but...

What about forbs?

COMMUNICATE!

- ▶ Familiarize crews with SOS protocol
 - ▶ Incidental collections based on hikes TO plots
 - ▶ Populations adjacent to plots
- ▶ Send SOS crews out with AIM crews
- ▶ **MOTIVATE!**



Benefits

- ▶ Provides greater spatial distribution of collections
- ▶ Greater genetic diversity
- ▶ Unique collections
- ▶ Long term collection strategies





Questions?

Photo Credits:
Allie Heller
Lauren Price
Jessa Davis



The preceding presentation was delivered at the

2017 National Native Seed Conference

Washington, D.C. February 13-16, 2017

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

