



Land Treatment Digital Library: What have we learned?

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- **Data management is worth every penny**
- **Compilation of disparate data is difficult**
- **Collect all but keep track of data quality**
- **Share widely because information is powerful and desperately needed**



Land Treatment Digital Library

A centralized digital library for federal agencies to store and retrieve data on land treatments in the western U.S.



Land Treatment Digital Library

What is it?

The Land Treatment Digital Library integrates **planning and implementation** information, **seed** information, **monitoring data**, and **gis data** with **original documents** and **photos** associated with a project or treatment

How does the LTDL gets its data?

STEP 1: Paper files are scanned and computer files are copied at field offices and stored as PDFs with project GIS data.



STEP 2: Data are entered into the LTDL, treatment polygons are imported, and links are created to original documents.

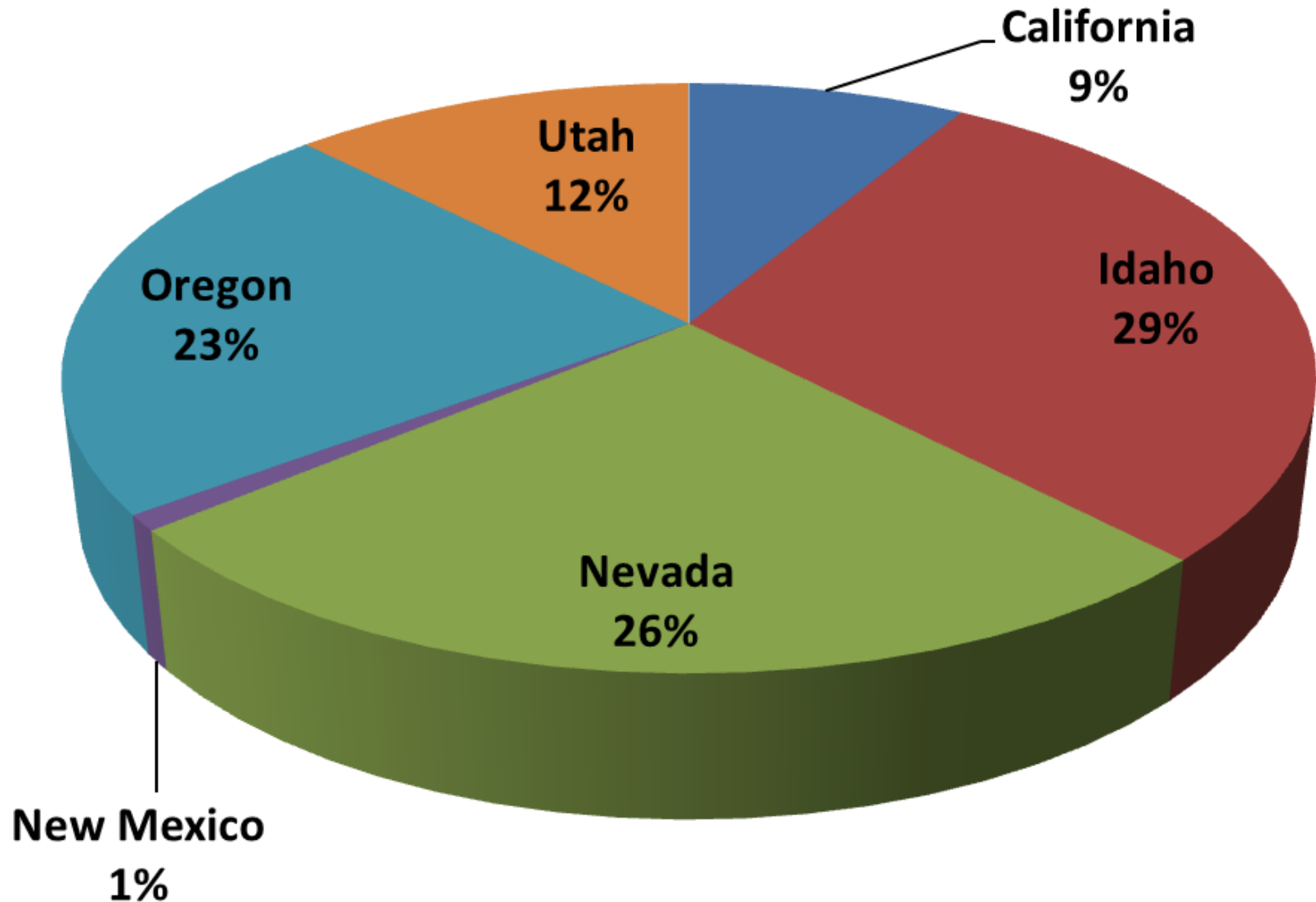


<p>Project Documentation</p> <p>Documentation available</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Plans <input checked="" type="checkbox"/> Reports <input checked="" type="checkbox"/> Monitoring Data <input checked="" type="checkbox"/> Photos <input checked="" type="checkbox"/> Seed Treatment <input checked="" type="checkbox"/> Seed List Exists <input checked="" type="checkbox"/> Project Paper Map <input checked="" type="checkbox"/> Treatment Paper Map(s) <p>Spatial documentation available</p> <ul style="list-style-type: none"> <input type="checkbox"/> No Location Data <input type="checkbox"/> Approximate Point Location <input type="checkbox"/> Project Point Shapefile <input type="checkbox"/> Project Line Shapefile <input checked="" type="checkbox"/> Project Polygon Shapefile <input checked="" type="checkbox"/> Treatment Shapefiles(s) <input type="checkbox"/> Treatment Approximate Points 	<p>Project Completion Status</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Project Complete <input type="checkbox"/> Project Status Unknown (Plans Only) <input type="checkbox"/> Project In Progress <p>Data Status</p> <ul style="list-style-type: none"> <input checked="" type="checkbox"/> Data Entry Complete <input type="checkbox"/> Data Entry In Progress <input type="checkbox"/> Data Entry Incomplete (Placeholder)
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<table border="1"> <thead> <tr> <th>Project Identifier Type</th> <th>Identifier Value</th> </tr> </thead> <tbody> <tr> <td>Wildfire Code</td> <td>CQ4W</td> </tr> <tr> <td></td> <td></td> </tr> </tbody> </table>	Project Identifier Type	Identifier Value	Wildfire Code	CQ4W			<p>Wildfire name Adaven</p> <p>Wildfire code Fire IDs CQ4W</p> <p>Wildfire Complex Name _____</p> <p>Wildfire cause Under Investigation</p> <p>Wildfire containment date Month: 0 Day: 0 Year: 2006</p>
Project Identifier Type	Identifier Value						
Wildfire Code	CQ4W						
<p>Project Title Adaven Fire (CQ3W)</p> <p>Major project agency Bureau of Land Manag</p> <p>State: Nevada</p> <p>Reason for Project Fire</p> <p>Project start calendar year: 2006</p> <p>Project finish calendar year: 2009</p> <p>Project Complex Name: _____</p> <p>Major ground treatments: Ground Seeding, Livestock Closure, Monitoring</p> <p>Major treatment objectives: Perennial Establishment, Significantly (p=0.05) higher seeded species density within plots compared to controls, Significantly (p=0.05) lower invasive species density within</p>	<p>Office State All</p>						

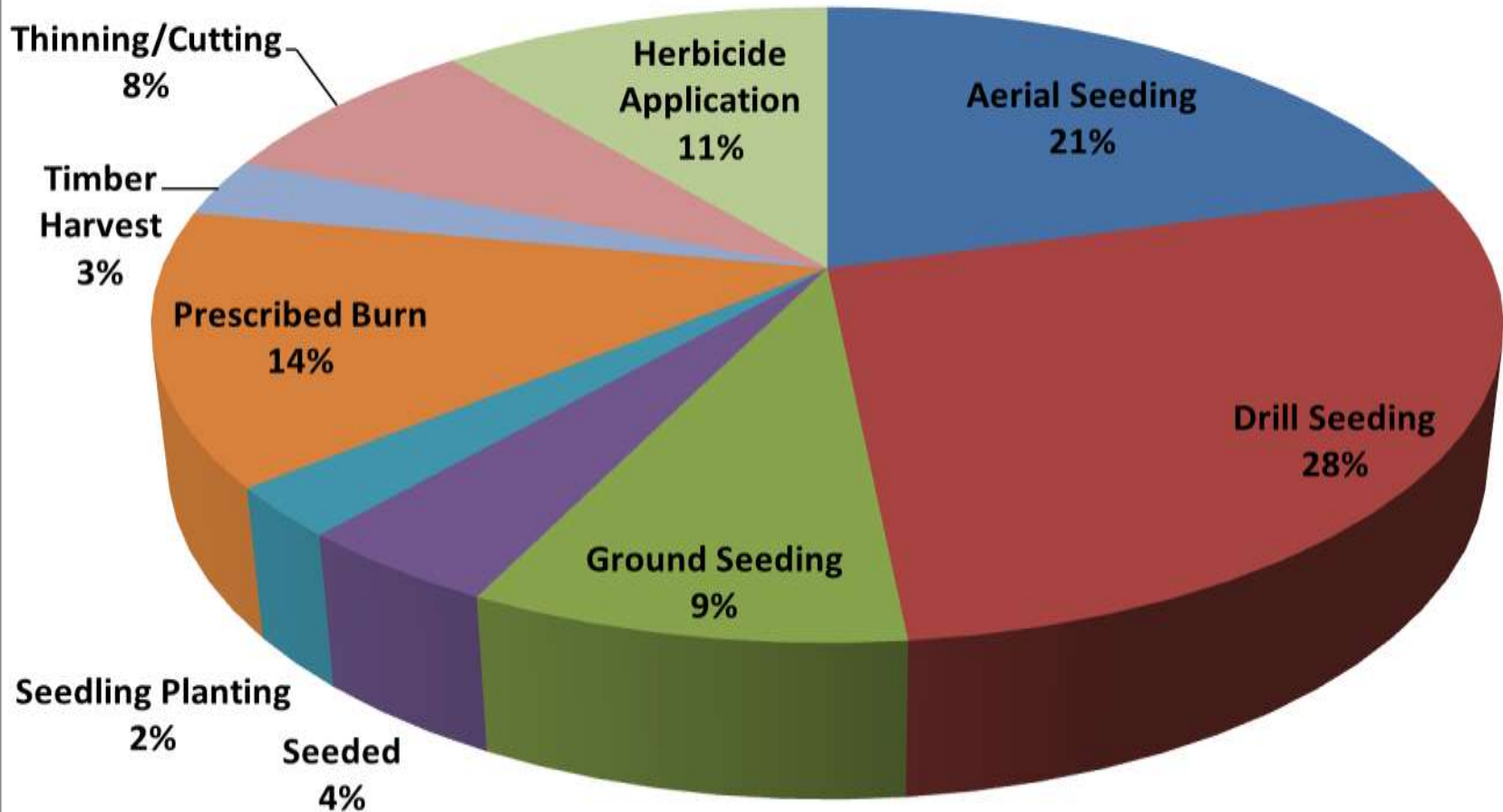
All "Treatments"

Current Holdings: About 20,000 Treatments



Types of Vegetation Treatments

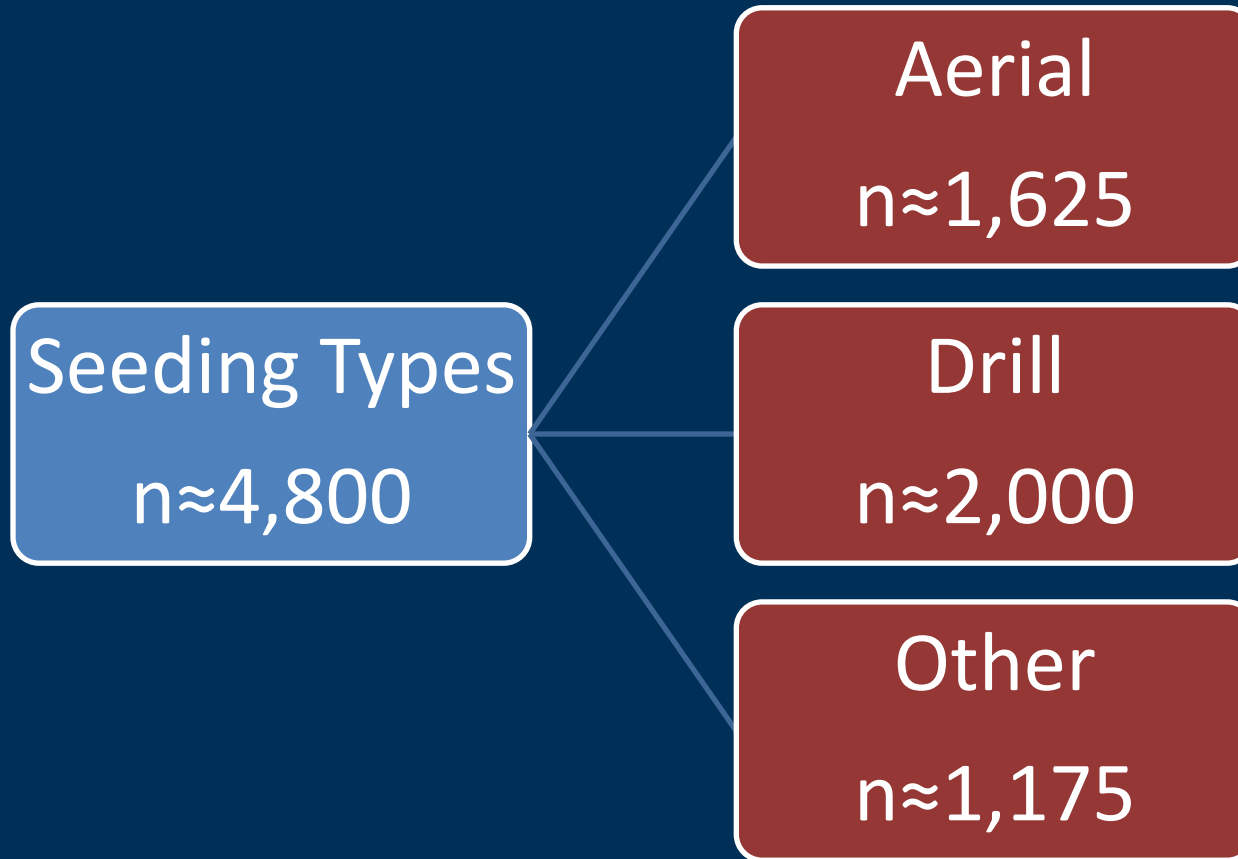
Current Holdings: About 8,000 Treatments



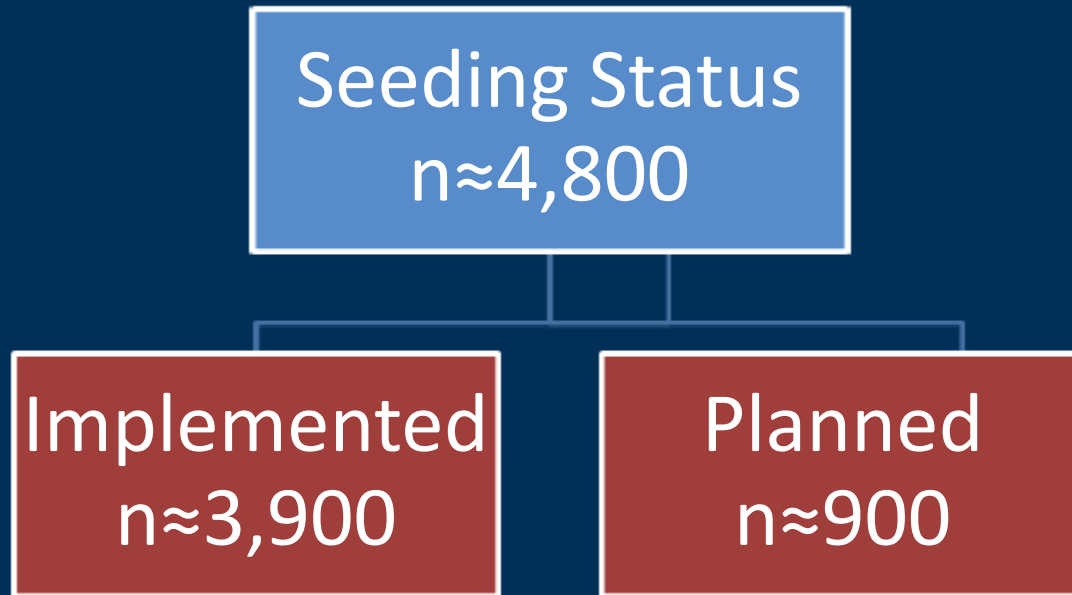
Vegetation Treatments Over Time

	Decade							
Treatment Type	1940s	1950s	1960s	1970s	1980s	1990s	2000s	Total
Aerial Seeding	2	24	89	62	134	473	907	1691
Drill Seeding	30	211	449	214	395	478	490	2267
Ground Seeding	11	84	78	57	102	165	228	725
Seeded	6	62	95	35	59	36	51	344
Seedling Planting	.	.	4	11	17	53	125	210
Prescribed Burn	2	36	19	25	190	355	484	1111
Timber Harvest	.	10	50	14	49	64	54	241
Thinning/Cutting	2	9	22	44	46	78	437	638
Herbicide	3	47	254	42	130	149	280	905
Total	56	483	1060	504	1122	1851	3056	8132

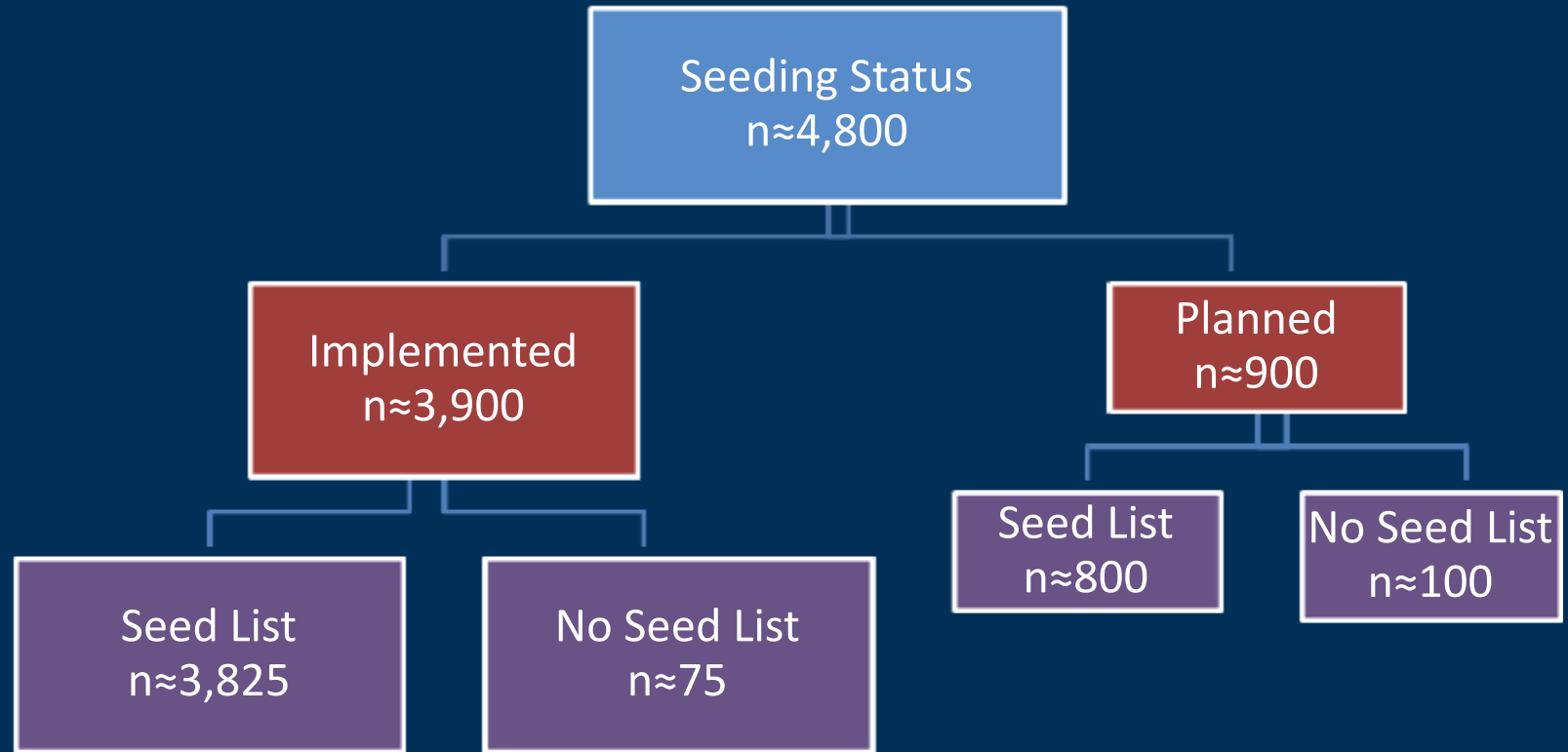
Seeding Treatments



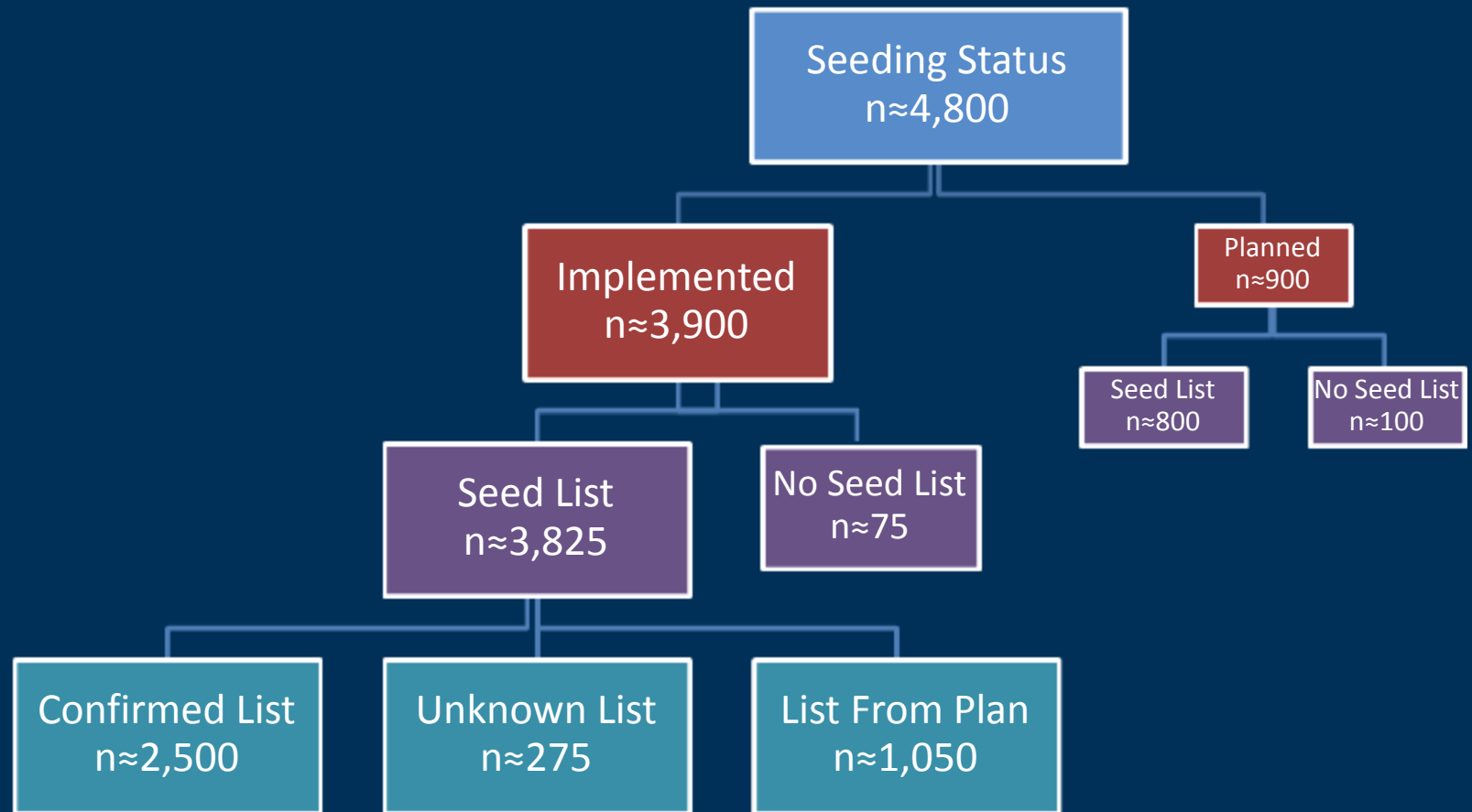
Seeding Treatments



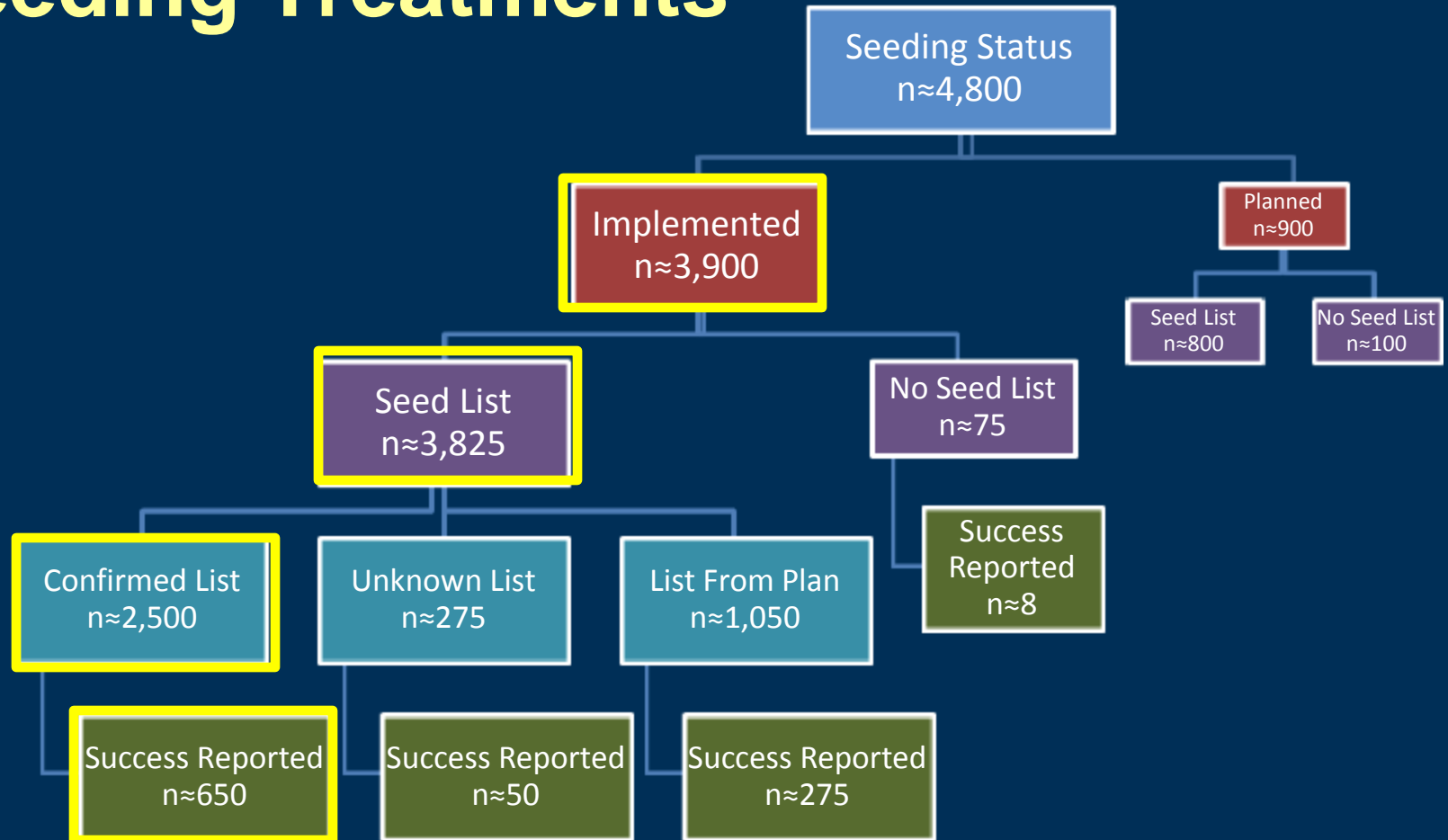
Seeding Treatments



Seeding Treatments



Seeding Treatments



4,800 Seeding Treatments



650 Seeding Treatments with

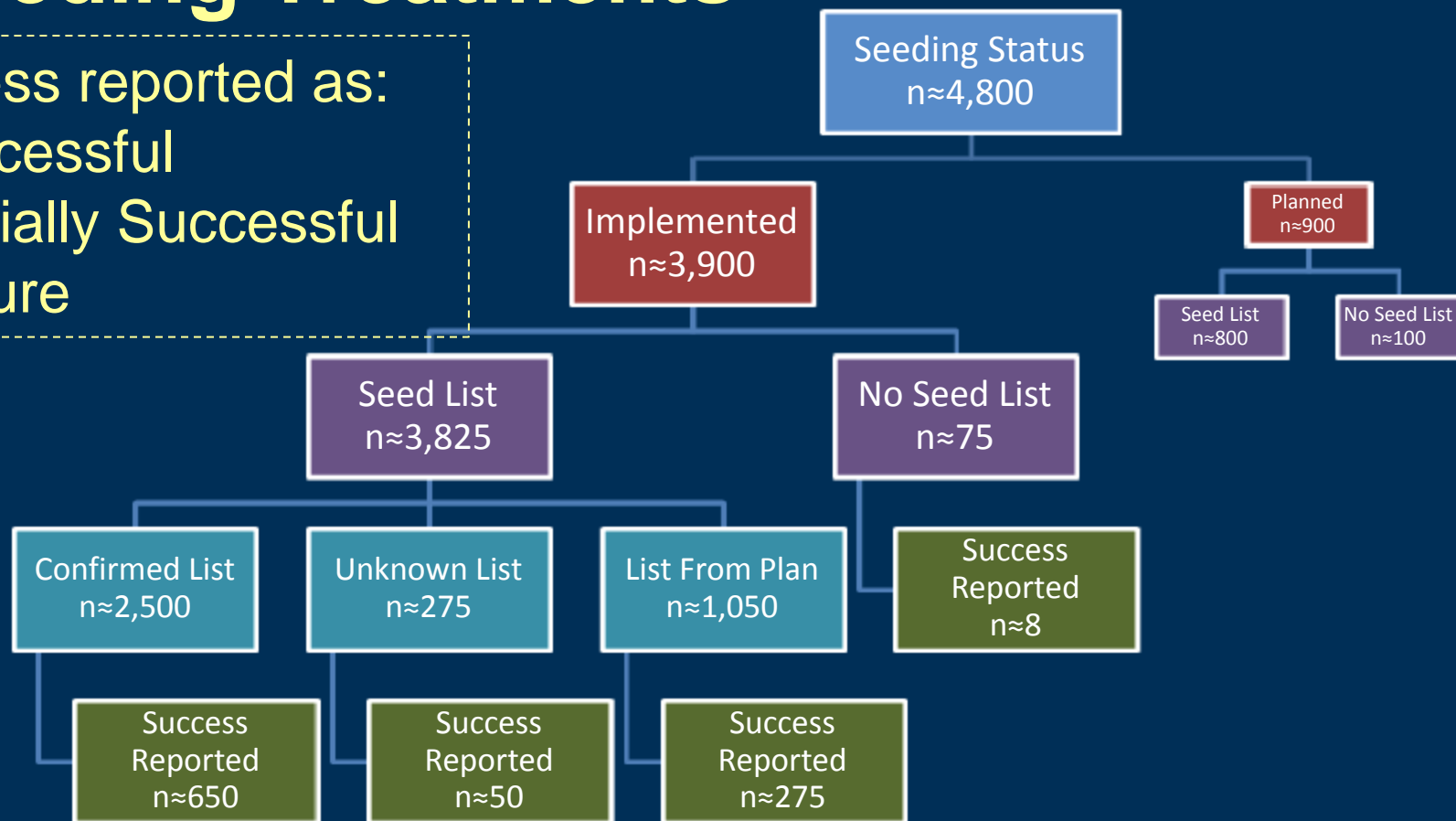
- ✓ Implement Record
- ✓ Confirm Seed List
- ✓ Success Reported



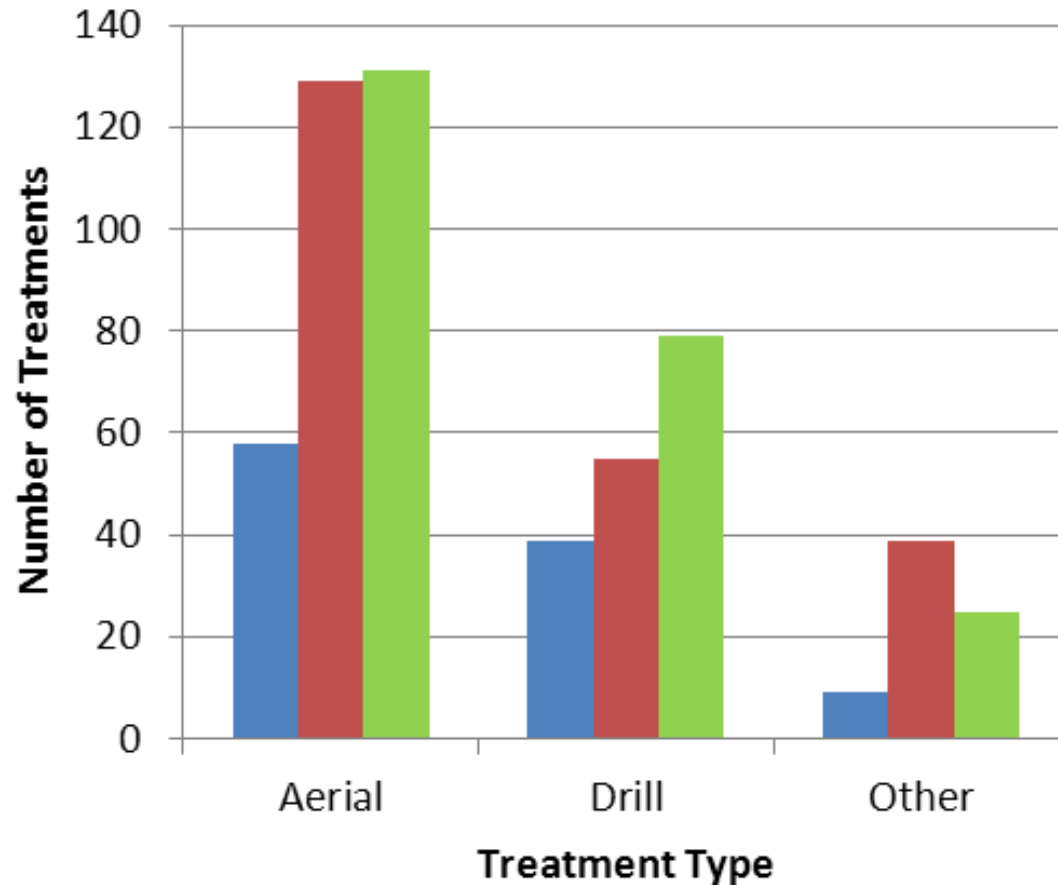
Seeding Treatments

Success reported as:

- Successful
- Partially Successful
- Failure



Success of Seeding Treatments



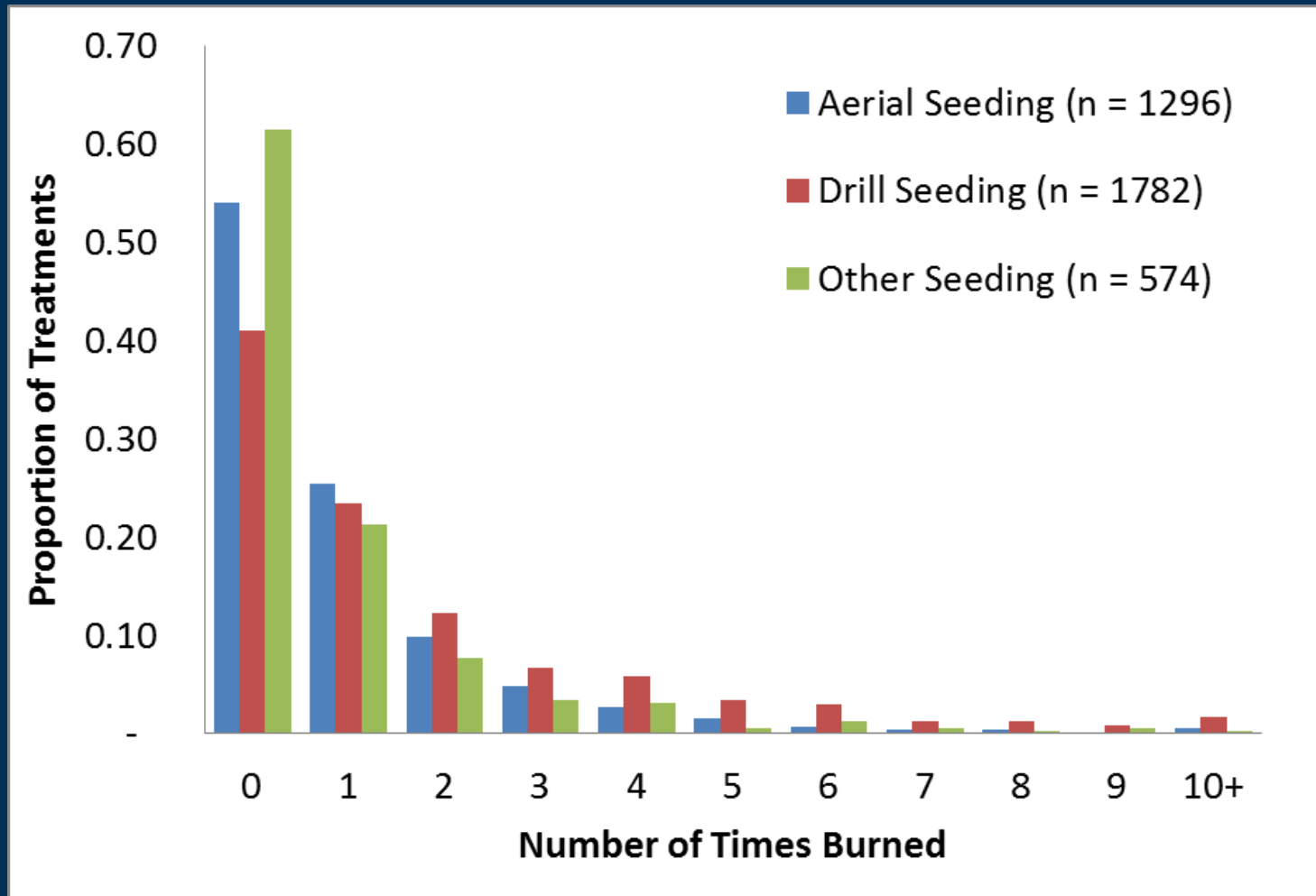
Important Factors:
Higher Elevation
Precipitation >10”
Loamy soil

■ Failure
■ Partially Successful
■ Successful

Species Seeded in 'Successful' Treatments

Rank	Species	Common	# times in Top Ten	Ave Rate lbs/acre
1	Artemisia sp.	Sagebrush sp.	107	0.8
2	Agropyron desertorum	Crested Wheatgrass	84	3.7
3	Poa secunda	Sandbergs Bluegrass	83	0.8
4	Elymus wawawaiensis	Snake River Wheatgrass	54	2.6
5	Pseudoroegneria spicata	Bluebunch Wheatgrass	54	3
6	Achillea millefolium	Western Yarrow	50	3
7	Agropyron fragile	Siberian Wheatgrass	42	2
8	Medicago sativae	Alfalfa	42	0.7
9	Leymus cinereus	Great Basin Wildrye	39	2.7
10	Achnatherum hymenoides	Indian Ricegrass	34	1.8

40-60% of post-fire seedings re-burned



Assisting Managers and Researchers...

- **Examples of LTDL Data Calls**
 - All land treatments in sage-grouse habitats
 - Wildfire aerial seedings in Boise, Twin, and Elko BLM District Offices
 - Northern Great Basin crested wheatgrass seedings
 - Herbicide sprayings in southern Idaho



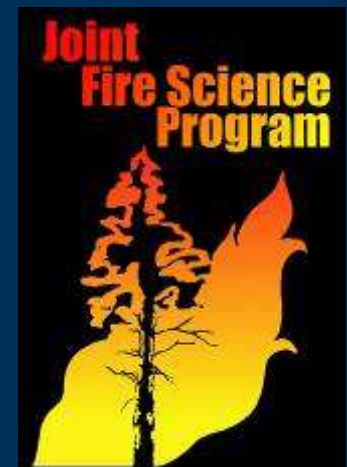
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Acknowledgements

Thanks to all on the USGS LTDL crew, Justin Welty (database design), Linda Schueck (web design), Gordon Toevs (BLM POC), BLM Advisory Team

Funding provided by:



For more information:

<http://greatbasin.wr.usgs.gov/ltdl/Default.aspx>

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