



Foundation Seed/Stock Seed

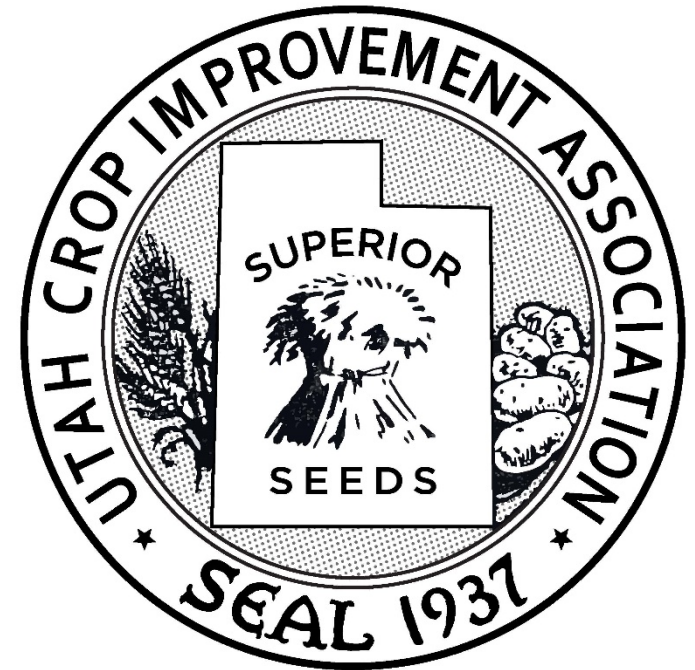
What? Where? Why?

Michael Bouck
Utah Crop Improvement Association
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www.utahcrop.org


Foundation Seed Programs in each state

- Work with the Foundation seed program in your state to find stock seed.
- These programs have contacts in other states.



Varieties and Germplasms

- Where do they come from - Release notice
- Breeder seed
- Foundation seed
- Germplasms
 - G0, G1, G2...
- Stock Seed

KIND: SIBERIAN WHEATGRASS
VARIETY: VAVILOV II
BREEDER SEED LOT #: BLUE CREEK 2010
USDA ARS FORAGE AND RANGE RESEARCH LAB
LOGAN UTAH
USDA  Agricultural Research Service
Signed: _____
Date: _____

FOUNDATION SEED



KIND: WESTERN WHEATGRASS
VARIETY: RECOVERY
CERT #: G-33 LOT #: RWG-4855

UTAH FOUNDATION SEED

SELECTED SEED



Species Name: Elymus elymoides
Common Name: Bottlebrush Squirreltail
Germplasm ID, Gen.: Fish Creek Germplasm, G3 of G5
G3 State, County, Elev.: UT, Cache, 4527 ft
G0 State, County, Elev.: ID, Blaine, 4750 ft

G0 Indigenous? YES Cert. # ARS G-11-16
G0 Natural-Track? YES Lot # EV16

The seed in this container, with label properly affixed thereto, was produced in compliance with the Seed Certification Requirements and Standards established by the Utah Crop Improvement Association for Selected Germplasm certified seed. Compliance (any warranty, express or implied) is based on and limited to representative field inspections and seed sample analysis. This tag must be accompanied by a seed analysis label to comply with state and federal seed laws.

Member of Association of Official Seed Certifying Agencies

Education Requirement and Standards
Compliance (and any warranty, expressed
or implied) is accompanied by a seed analysis

2-4855 Tel: (435)797-2082

Selling Agencies

Variety Release Notice

- Information about Variety

UNITED STATES DEPARTMENT OF AGRICULTURE
Agricultural Research Service
Washington, D.C.

NOTICE OF RELEASE OF BANNOCK II, THICKSPIKE WHEATGRASS

The USDA-Agricultural Research Service (ARS) announces the cultivar release of Bannock II thickspike wheatgrass [*Elymus lanceolatus* (Scribn. & J.G. Sm.) Gould]. Bannock II is the result of hybridization among selected genotypes from thickspike wheatgrass cultivars. Bannock and Schwendimar followed by two cycles of recurrent selection. The USDA Natural Resource Conservation Service released the cultivars Schwendimar and Bannock in 1994 and 2003, respectively. The cultivar Schwendimar originated from a single collection made on the sandy banks of the Columbia River near The Dalles, OR. The cultivar Bannock originated from three collections made near Pocatello, ID, The Dalles, OR, and Quincy, WA. The release of Bannock II thickspike wheatgrass expands native germplasm available to enhance the success of conservation and re-vegetation plantings in the Great Basin, Snake River Plain, and Columbia Plateau regions of the Intermountain US.

The parental material for Bannock II thickspike wheatgrass was selected from a Nephi, UT spaced-plant evaluation nursery that was transplanted in 2001. This nursery consisted of 1750 plants, including 350 plants each from the thickspike wheatgrass cultivars Bannock, Critana, Elbee, Schwendimar, and Sodar. In 2002, visual plant vigor ratings (1 to 9; 1 = dead and 9 =



Variety Release Notice

- Classes of seed allowed

Bannock (11.9; 83.0 percent), Schwendimar (11.1; 82.1 percent), Sodar (6.8; 52.4 percent), and Critana (4.6; 42.5 percent).

Bannock II is being released because of its improved seed production and stand establishment.

Breeder, foundation, registered, and certified seed classes of Bannock II will be recognized.

Foundation seed of Bannock II will be maintained by the USDA-ARS Forage and Range Research Laboratory, Logan, UT, and will be made available to commercial growers by the Utah Crop Improvement Association for production of certified seed. Small quantities of seed will be provided to researchers upon request. Appropriate recognition should be made if this material contributes to the development of a new breeding line or cultivar.

Signature:

K. Simmons

Deputy Administrator, Crop Production and Protection
Agricultural Research Service, U.S. Department of Agriculture

6/5/15

Date



Fish Creek G-1 seed harvested from this field trial was used to establish a seed-increase block in the spring of 1998 at Evans Farm from which G-2 seed was harvested beginning in 1999. Seed of the G-2 generation will be maintained by the USDA-ARS Forage and Range Research Laboratory, Logan, UT and will be made available to growers for production of G-3 to G-5 seed by the Utah Crop Improvement Association. Seed through the G-5 generation will be eligible for certification.

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G0 State, County, Elev.: ID, Blaine, 4750 ft

G0 Indigenous? YES Cert. # ARS G-11-16
G0 Natural-Track? YES Lot # EV16

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Member of Association of Official Seed Certifying Agencies

Certified Seed Production

- Good seed conditioner – grower relationship
- Contact Seed Certification Agency
- Plant appropriate class

REGISTERED SEED

CERTIFIED SEED


KIND: SLENDER WHEATGRASS
VARIETY: FIRST STRIKE
CERT #: G-33 LOT #: FSW-4855

UTAH CERTIFIED SEED

The seed in this container, with label properly affixed thereto, was produced in accordance (based on and limited to record of seed source and the results of representative field inspections and seed sample analysis) with the Seed Certification Requirements and Standards established by the Utah Crop Improvement Association for the CERTIFIED CLASS of certified seed. Beyond this certification representation, the Association makes no warranty, expressed or implied, as to merchantability or fitness for purpose or performance of the seed. This tag must be accompanied by a seed analysis label to comply with state and federal seed laws.

UTAH CROP IMPROVEMENT ASSOCIATION, Utah Agriculture Experiment Station, Logan, Utah 84322-4855

MEMBER OF ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES

FOUNDATION SEED
KIND: WESTERN WHEATGRASS
TY: RECOVERY
#: G-33 LOT #: RWG-4855

H FOUNDATION SEED
This seed was produced in compliance with the Seed Certification Requirement and Standards for the FOUNDATION CLASS of certified seed. Compliance (and any warranty, expressed or implied, as to merchantability or fitness for purpose or performance of the seed. This tag must be accompanied by a seed analysis label to comply with state and federal seed laws.

Utah Crop Improvement Association, 4855 Old Main Hill, Logan, UT 84322-4855 Tel: (435)797-2082

ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES

CERTIFIED SEED



KIND: SNAKE RIVER WHEATGRASS

VARIETY: DISCOVERY

CERT #: G-488

LOT #: DSRWG-4855

UTAH CERTIFIED SEED

The seed in this container, with label properly affixed thereto, was produced in accordance (based on and limited to record of seed source and the results of representative field inspections and seed sample analysis) with the Seed Certification Requirements and Standards established by the Utah Crop Improvement Association for the CERTIFIED CLASS of certified seed. Beyond this certification representation, the Association makes no warranty, expressed or implied, as to merchantability or fitness for purpose or performance of the seed. This tag must be accompanied by a seed analysis label to comply with state and federal seed laws.

UTAH CROP IMPROVEMENT ASSOCIATION, Utah Agriculture Experiment Station, Logan, Utah 84322-4855

MEMBER OF ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES



PVG Categories

- Source ID
- Selected
- Tested

SOURCE IDENTIFIED SEED



Species Name:	Sphaeralcea grossulariifolia
Common Name:	Gooseberryleaf globemallow
Germplasm ID, Gen.:	___, G0/G0
G0 State, County, Elev.:	UT, Kane, 6060 ft.
G0 Indigenous? Yes	Cert. # WC-0048
G0 Natural? Yes	Lot # 4855

The seed in this container, with label properly affixed thereto, was produced in compliance with the Seed Certification Requirements and Standards established by the Utah Crop Improvement Association for the SOURCE IDENTIFIED CATEGORY of certified seed. No warranty is expressed or implied as to the fitness for particular purpose or performance of the seed. This tag must be accompanied by a seed analysis label to comply with state and federal seed laws.

•UTAH CROP IMPROVEMENT ASSOCIATION•

Utah State University, 4855 Old Main Hill, Logan, Utah 84322-4855 (435)797-2082 • www.utahcrop.org

ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES

TESTED SEED



The seed in this container, with label properly affixed thereto, was produced in compliance with the Seed Certification Requirements and Standards established by the Utah Crop Improvement Association for the TESTED CATEGORY of certified seed. No warranty is expressed or implied as to the fitness for particular purpose or performance of the seed. This tag must be accompanied by a seed analysis label to comply with state and federal seed laws.

Member of

SELECTED SEED



Species Name:	<i>Dalea ornata</i>
Common Name:	Western prairie clover
Germplasm ID, Gen.:	Majestic Germplasm, G1 of G5
G1 State, County, Elev.:	NV, Churchill, 3964 ft.
G0 State, County, Elev.:	OR, Sherman, 846 ft
G0 Indigenous? Yes	Cert. # ARS 2014
G0 Natural-Track? YES	Lot # Daor Majestic FALLON-2013 G1

The seed in this container, with label properly affixed thereto, was produced in compliance with the Seed Certification Requirements and Standards established by the Utah Crop Improvement Association for Selected Germplasm certified seed. Compliance (any warranty, express or implied) is based on and limited to representative field inspections and seed sample analysis. This tag must be accompanied by a seed analysis label to comply with state and federal seed laws

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SOURCE IDENTIFIED SEED



Species Name:	Penstemon cyaneus
Common Name:	Blue Penstemon
Germplasm ID, Gen.:	PECY B6-02
G3 State, County, Elev.:	UT, SanPete, 5682ft
G0 State, County, Elev.:	UT, Box Elder, 6574ft
G0 Indigenous? Yes	Cert # WC-33
G0 Natural? Yes	Lot # BP-4855

The seed in this container, with label properly affixed thereto, was produced in compliance with the Seed Certification Requirements and Standards established by the Utah Crop Improvement Association for the SOURCE IDENTIFIED CATEGORY of certified seed. No warranty is expressed or implied as to the fitness for particular purpose or performance of the seed. This tag must be accompanied by a seed analysis label to comply with state and federal seed laws.

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Foundation seed agreements

- Utah Crop has agreements with several agencies
 - USDA ARS Forage and Range Research Lab Logan, Ut
 - UDWR/USFS Shrub lab Provo and Ephraim
 - USDA NRCS Aberdeen Plant Materials Center
 - USFS Great Basin Native Plant Project
 - UAES Small Grains Program



Questions



PVG Categories

- Source ID
- Selected
- Tested

SOURCE IDENTIFIED SEED



Species Name:	Sphaeralcea grossulariifolia
Common Name:	Gooseberryleaf globemallow
Germplasm ID, Gen.:	___, G0/G0
G0 State, County, Elev.:	UT, Kane, 6060 ft.
G0 Indigenous? Yes	Cert. # WC-0048
G0 Natural? Yes	Lot # 4855

The seed in this container, with label properly affixed thereto, was produced in compliance with the Seed Certification Requirements and Standards established by the Utah Crop Improvement Association for the SOURCE IDENTIFIED CATEGORY of certified seed. No warranty is expressed or implied as to the fitness for particular purpose or performance of the seed. This tag must be accompanied by a seed analysis label to comply with state and federal seed laws.

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ASSOCIATION OF OFFICIAL SEED CERTIFYING AGENCIES

TESTED SEED



The seed in this container, with label properly affixed thereto, was produced in compliance with the Seed Certification Requirements and Standards established by the Utah Crop Improvement Association for the TESTED CATEGORY of certified seed. No warranty is expressed or implied as to the fitness for particular purpose or performance of the seed. This tag must be accompanied by a seed analysis label to comply with state and federal seed laws.

Member of

SELECTED SEED



Species Name:	<i>Dalea ornata</i>
Common Name:	Western prairie clover
Germplasm ID, Gen.:	Majestic Germplasm, G1 of G5
G1 State, County, Elev.:	NV, Churchill, 3964 ft.
G0 State, County, Elev.:	OR, Sherman, 846 ft.
G0 Indigenous? Yes	Cert. # ARS 2014
G0 Natural-Track? YES	Lot # Daor Majestic FALLON-2013 G1

The seed in this container, with label properly affixed thereto, was produced in compliance with the Seed Certification Requirements and Standards established by the Utah Crop Improvement Association for Selected Germplasm certified seed. Compliance (any warranty, express or implied) is based on and limited to representative field inspections and seed sample analysis. This tag must be accompanied by a seed analysis label to comply with state and federal seed laws.

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PVG Categories

- SI – Source Identified - Comparisons not known
- Selected – some selection done and shows promise of superior or definable traits.
- Tested – Testing shows heritable traits in progeny
- Variety – Heritable traits are proven

Tracking Wildland Seed



INTRODUCTION

Members of the Association of Official Seed Certifying Agencies (AOSCA; aosca.org) offer third party certification for tracking germplasms and varieties of directly collected native or naturalized wildland plant materials and their respective cultivated



increases. Certification is based on maintaining genetic identity (recognition of distinctive traits as established by geographic source, botanic key and/or formal description) and genetic purity (monitoring the presence of those distinctive traits in cultivated reproductive generations and applying tolerances for limiting off-type, weed, or other species contaminants).

Seed and other plant propagating materials consistent with vegetation objectives for specific geographic areas and having verified genetic identity and purity are needed for wildland restoration, fire mitigation, and other rehabilitation projects. This need is being addressed by the individuals, private companies, public land management agencies, and non-governmental conservation organizations having a stake in the wildland seed industry. Each stakeholder may view aspects of plant germplasm collection, development, production, and usage through very different lenses, but each may benefit from the value-added service provided by AOSCA in tracking genetic integrity in wildland seed commerce.

Upon stakeholder clientele request for certification, AOSCA member agencies having geographic jurisdiction will provide application forms, inspections, and labeling for tracking the collection and production of these plant materials.

Stakeholders often have specific questions regarding AOSCA germplasm designations, generations, labeling, or requirements and standards for seed collection and/or cultivated increase. These questions can be answered by consulting the subjects and definitions in the following **FLOW CHART**, **TOPICAL KEY**, and **GLOSSARY**, which offer easy public access and a stepwise guide to the essentials of AOSCA wildland sourced seed certification.



Arrowleaf balsamroot seed heads collected into seed bag.

The following subjects (A-D) are a brief directory of the FLOWCHART/ TOPICAL KEY:

- A. Commercial wildland collectors/contractors: 0, 3a, 3b, 4
- B. Germplasm originators/developers: 0, 1a, 1b, 2a-2d, 3b, 5, 6a, 6b, 7a-7c, 8, 11
- C. Commercial cultivated seed producers/contractors: 0, 6b, 8, 9, 10a-10e
- D. Seed buyers/project managers: 0, 1a, 1b, 2a-2d, 4, 5, 7a-7c, 8, 10e, 11

To best utilize this guide, find a certification subject of interest in the stepwise FLOW CHART and note the number of the box. The subject is further explained in the statement of the same number in the TOPICAL KEY. See the GLOSSARY for the definition of terms. Terms are underlined and hyperlinked at their first instance in the TOPICAL KEY.

Letters correlate to Topical Key and Flowchart

0. Wildland Plant Species Populations

AOSCA Seed Certification Flow Chart

1a. Natural Track (N-T) Germplasm

Unrestricted Genetic Accessions

2a. SOURCE IDENTIFIED:
N-T
Germplasm
Generations &
Labeling

2b. SELECTED:
Promising
Traits; N-T
Germplasm
Generations &
Labeling

2c. TESTED:
Proven Traits;
N-T
Germplasm
Generations &
Labeling

**2d. VARIETY/
CULTIVAR:**
Traits Uniform,
Stable; N-T
Classes &
Labeling

**3a. Wildland Collection for
Project Out-Planting**

**3b. Wildland Collection for
Cultivated Increase**

**4. Procedures for Collection &
Labeling of Wildland Seed
for Direct Marketing**

**5. Procedures for Collection &
Designation of Stock Seed
Eligible for Cultivation**

**6a. Cultivated Stock Increase
under Direct Supervision of
Collector/Developer**

**6b. Stock Seed Labeled for
Distribution to
Commercial Growers**

**10b. Seedling
Inspection:**
Planting Design,
Stand
Establishment,
Volunteers

**10c. Field
Inspection:**
Genetic Purity &
Integrity, Isolation,
Weed Control

**10d. Seed
Harvest,
Transporting,
Cleaning,
Sampling,
Storage**

**10e. Seed Lots,
Seed Analysis,
Certification
Tags, Analysis
Tags**

**11. Practical
Application of
Pre-Variety
Germplasm in
Revegetation
Projects**

0. Wildland Plant Species Populations

AOSCA Seed Certification Flow Chart

1b. Manipulated Track (M-T) Germplasm

Restricted Genetic Selections

7a. SELECTED:
Promising Traits;
M-T Germplasm
Generations &
Labeling

7b. TESTED:
Proven Traits;
M-T Germplasm
Generations &
Labeling

**7c. VARIETY/
CULTIVAR:**
Traits Uniform,
Stable; M-T Classes
& Labeling

**8. N-T and M-T Germplasm Identification and
Variety Naming**

Advancement Optional: SI to S to T to V/C

9. Certified Cultivated Production:
SI, S, T, or V/C

**10a. Stock Seed Identity and Generation;
Land History; Isolation Distance**



Rocky Mountain Beeplant commonly collected for seed.

TOPICAL KEY

- #0. A wildland plant species population may be native or naturalized, indigenous or non-indigenous. A wildland sourced germplasm representation of this population may consist of directly collected propagating material or its cultivated increase. See #1
- #1a. The germplasm is an unrestricted genetic accession (see collection methods) of a natural plant population growing on a wildland site and can be used directly in revegetation projects or under cultivation in a manner to ensure maintenance and genetic purity: Natural Track (N-T). See #2, ...
- #1b. The germplasm is a restricted genetic selection resulting from purposeful genetic manipulation, such as selecting specific individuals from within natural populations or cultivated fields of known genetic identity, or from within a bulk population. Seed of a genetic selection can be increased under cultivation in a manner to ensure main-

tenance of genetic identity and genetic purity: Manipulated Track (M-T). See #7, #9

- #2a. The natural population accession is unevaluated in relation to other populations of the species; thus, the geographic source of a representative genetic accession is the only data known: Source Identified Germplasm (SI), N-T, yellow certification tags. Generations are designated as Generation Zero (G0) for wildland accessions, and G1, G2, G3, etc. for successive cultivated generations. The tag lists the G0 collection location (or locations of a bulked population), and the cultivation location of any successive cultivated generation. See #3, #8, #9, #11
- #2b. In addition to source information (#2a), the accession representing a natural population is chosen for indication, but not proof, of having distinct traits exhibited by the population as a whole compared with other natural wildland populations of the same species located in different geographic areas or designated seed zones; traits are identified from field observation, representative accessions grown in common gardens, or by genetic analysis: Selected Germplasm (S), N-T, green certification tags; generations and locations listed on the tag as in #2a. See #3, #8, #9, #11
- #2c. The distinct traits of the natural population accession (#2b) are proven heritable by genetic analysis or progeny testing: Tested Germplasm (T), N-T, blue certification tags; generations and locations listed on the tag as in #2a. See #3, #8, #9, #11
- #2d. The distinct natural population traits proven heritable (#2c) are shown to be uniform and stable as supported by data from multiple location/year trials under cultivation or in wildland plantings: Variety/Cultivar (V/C), N-T variety generation (class) designations of Breeder (tag color not specified), Foundation (white tag), Registered (purple tag), and Tested (blue tag) are analogous to the N-T germplasm designations of G0, G1, G2, and G3. The collection and cultivation locations are not specified on an N-T variety tag; the official variety release notice provides source and germplasm development information. NOTE: A Natural Track variety when wildland collected is fully representative of the genetic diversity of its natural wildland population, and when increased in the field according to AOSCA cultivation protocols is a legitimate representative of that

Terms hyperlinked to Glossary

Wild Collected Seed

- Numerous Species
- Readily available
- Collectors regularly scout areas and know what's out there.
- Ask for specific species and collectors will get it.
- UCIA site inspections find many associated species



Wildland Seed Collection process

- Pre collection application
- Proper permits
- Site inspection
- Seed Sampling
- Tagging

SEED CERTIFICATION AGENCY (SCA)
UTAH CROP IMPROVEMENT ASSOCIATION
4855 OLD MAIN HILL
UTAH STATE UNIVERSITY
LOGAN UT 84322-4855
Phone: (435) 797-2233 or 2082; Fax: (435) 797-3376
Email: keren.williams@usu.edu

Certified Seed
PRE-COLLECTION APPLICATION¹
and **SITE INSPECTION REPORT¹**
for Wildland Collected Seed

Seed Company Cassidy Seed

Applicant Name Robert Leroy Parker Phone 435 245 9543 Fax _____

Address Max N Ann's lane, Beaver Utah Cell _____ Email wildbunch@gmail.com

Species Name Artemesia Tridentata Wyomingensis Common Name Wyoming Sagebrush

State Where Collected Utah Possible Collection Sites to be Inspected:² _____ Fees³ _____

Site Name⁴ Pinkerton Draw Ownership/Size⁴ State trust
Est. Harvest Date(s) November Lat. 38.223410 Long. -112.801692
Comments: Large patch east of reservoir
Date Inspected: _____ Approved: ☐ Yes ☐ No UCIA Signature _____
Comments: _____
UCIA Cert #: _____ Inspection Fee: _____ Late Fee³: _____ Call before site inspection⁵ ☐ Yes ☐ No

Site Name⁴

Ownership/Size⁴



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4855 OLD MAIN HILL
UTAH STATE UNIVERSITY
LOGAN UT 84322-4855
Phone: (435) 797-2233 or 2082; Fax: (435) 797-3376
Email: keren.williams@usu.edu

**Certified Seed
PRE-COLLECTION APPLICATION¹
and SITE INSPECTION REPORT¹
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Seed Company **Cassidy Seed**

Applicant Name **Robert Leroy Parker** Phone **435 245 9543** Fax _____

Address **Max N Ann's lane, Beaver Utah** Cell _____ Email **wildbunch@gmail.com**

Species Name **Artemesia Tridentata Wyomingensis** Common Name **Wyoming Sagebrush**

State Where Collected **Utah** Possible Collection Sites to be Inspected:² Fees³

Site Name⁴ **Pinkerton Draw** Ownership/Size⁴ **State trust**

Est. Harvest Date(s) **November** Lat. **38.223410** Long. **-112.801692**

Comments: **Large patch east of reserrior**

Date Inspected: _____ Approved: ☐ Yes ☐ No UCIA Signature _____

Comments: _____

UCIA Cert #: _____ Inspection Fee: _____ Late Fee³: _____ Call before site inspection⁵ ☐ Yes ☐ No

Site Name⁴

Ownership/Size⁴

