



# BOUNDLESS SKY

A newsletter of the Sagebrush in Prisons Project

Six states, twelve prisons: Incarcerated crews impact the American West

FALL 2023



The sagebrush program, "has been a soulful learning experience." - Ryan Wood, Northern Nevada Correctional Center

## What is SPP?



The Sagebrush in Prisons Project works with incarcerated adults to provide ecological and horticulturally-based education for producing sagebrush or other native plants used in restoring sagebrush steppe habitat. It is a partnership between the Institute for Applied Ecology (IAE), Bureau of Land Management (BLM), Wyoming Department of Environmental Quality - Abandoned Mine Lands program, and Federal and State Departments of Correction. The program operates in 12 prisons in Idaho, Nevada, Oregon, California, New Mexico, and Wyoming. What is it to you?

In this edition, read about Sagebrush Steppe, some of the animals (including humans), and different types of sagebrush present within. Find out more about what other prisons are doing, where they're located, and see some art from other adults in custody - including poetry.

## FEATURING



# THE SAGEBRUSH STEPPE ECOSYSTEM

By Bella Norton



*It is often a surprise to folks when you say that the sagebrush steppe is an imperiled ecosystem. Not only does it often look like a barren landscape, but you can drive for miles and see nothing but sagebrush. Considering this, you might wonder, how could we possibly need more of this plant?*

Well, as incredible as it is, we have lost almost half of this amazing ecosystem. While the sagebrush steppe once covered over 240,000 square miles spanning over 13 western US states, it is now down to less than 134,000 square miles. This is due to a combination of factors including climate change, increased fire severity, invasive grasses, and habitat fragmentation that comes from activities related to oil, gas, mining, agriculture, overgrazing, and urban expansion.

And despite its name, sagebrush steppe is home to more than just this plant. This seemingly monotonous landscape boasts over 350 obligate species that call it home. This makes sagebrush an ecological **keystone** species. In a masonry arch, the center stone (keystone) is vital to keeping the arch intact. Like a keystone, if sagebrush is removed, the birds, mammals, and reptiles dependent on sagebrush plants to survive - whether this is for food, shelter, or even water - will die. It is especially crucial for migratory species like the pronghorn, mule deer, and elk.

Amongst the sagebrush you will find other shrubs, wildflowers, reptiles, small mammals, many types of songbirds, and birds of prey. If you're lucky, you might even find a few Greater Sage-Grouse camouflaged within. These birds are an iconic species of the ecosystem, and it is estimated that since the 1960s, its population has declined by over 80%.

## HUMANS & SAGEBRUSH

Historically and today, many humans call the sagebrush steppe ecosystem home and depend on it for their livelihoods. Conservation of this land does not mean preventing humans from having access to it; it means figuring out how we can be positive stewards of this land and manage the impact of our actions.

The Sagebrush in Prisons Project is one way that humans can heal the landscape and have positive impact on the plants and animals that depend on them. Incarcerated men and women spend a whole season growing sagebrush from seed to plug, all while learning horticulture, greenhouse management, and ecology. Their work is incredibly appreciated and important for the restoration of the sagebrush steppe ecosystem on which we all depend. This is a positive way that humans can be stewards of this great landscape, all the partners hope that the work is also positive *FOR* incarcerated crews.





# ANIMALS IN THE SAGEBRUSH HABITAT

By Shannon Campbell

3



## HIBERNATE, MIGRATE, OR ADAPT?

What are animals up to this winter in the sagebrush steppe habitat? As humans, we each have our own ways to 'adapt' to the colder weather each winter season. We put on more layers of clothing or turn up the heat in our indoor environments. Have you ever wondered what the animals are doing to keep themselves warm and safe in these winter months?

**Animals in the sagebrush steppe will either hibernate, migrate, or adapt to cold and snowy conditions.** Mammals like bighorn sheep and coyotes will adapt to the cold each winter season by growing an extra layer of fur to keep warm. Small mammals like mice and jackrabbits build insulated nests or burrows with a reserve of food underground to hibernate for most of the winter. Reptiles can hibernate for most of the winter months, too. Hibernating animals still come out to feed, but less often than they do in warmer seasons when food is abundant. Predators like mountain lions hunt in a smaller area to decrease the amount of calories they burn, compared to the larger territory they cover in warm months when food is plentiful. Some prey species will change morphologically to adapt for winter months by growing a layer of light-colored fur to blend in with the snow on the ground. Birds, bats, and many other animals migrate by flying or walking to warmer areas with better food resources. After reading about these animals and how they manage in the winter, which strategy would you rather use: hibernate, migrate, or adapt?



Hoary bat



Bighorn sheep are well adapted to climbing steep terrain and live in areas where sagebrush is prevalent. They rely on sagebrush for food, especially in the winter. The horns of this animal can weigh up to 30 lbs!

Greater Sage-Grouse forage on the ground, mainly eating sagebrush. They occur throughout the range of big sagebrush and are sensitive to disturbance.



# WHERE IS SAGEBRUSH GROWN?

**Location:** Ontario, Oregon

**Facility:** Snake River Correctional Institution (**SRCI**)

**Plants Grown:** 51,280 *Artemisia tridentata subsp. wyomingensis* and 8,904 *Artemisia tridentata subsp. xericensis* (Xeric Big Sagebrush)

**Planted Where?** Vale, OR (Willowcreek Fire) and Weiser, ID (Mann Creek)

**Location:** Lakeview, Oregon

**Facility:** Warner Creek Correctional Facility (**WCCF**)

**Plants Grown:** 39,600 *Artemisia tridentata subsp. vaseyana* and 5,567 *Purshia tridentata* (Antelope Bitterbrush)

**Planted Where?** Owyhee County, ID and Bly, OR

**Location:** Wilsonville, Oregon

**Facility:** Coffee Creek Correctional Facility (**CCCF**)

**Plants Grown:** 10,000 *Artemisia tridentata subsp. vaseyana*

**Planted Where?** Klamath Falls, OR

**Location:** Herlong, California

**Facility:** Federal Correctional Institution of Herlong (**FCIH**)

**Plants Grown:** 2,000 *Purshia tridentata* and 12,000 *Artemisia tridentata subsp. wyomingensis*

**Planted Where?** Susanville, CA, Hallelujah Junction, CA, and Winnemucca, NV

**Location:** Kuna, Idaho

**Facility:** Idaho State Correctional Center (**ISCC**)

**Plants Grown:** 50,000 *Artemisia tridentata subsp. wyomingensis*

**Planted Where?** Eastern Idaho: King Hill Creek in Elmore County, ID and S/SE of Craters of the Moon National Monument, ID

**Location:** Kuna, Idaho

**Facility:** South Boise Women's Correctional Center (**SBWCC**)

**Plants Grown:** 17,088 *Artemisia tridentata subsp. tridentata*

**Planted Where?** Boise, ID and Owyhee County, ID

**Location:** Riverton, Wyoming

**Facility:** Wyoming Honor Farm (**WHF**)

**Plants Grown:** 27,734 total plants - *Artemisia tridentata subsp. vaseyana*, *Artemisia tridentata subsp. wyomingensis*, and *Artemisia cana* (Silver Sagebrush)

**Planted Where?** Abandoned Mine Lands Restoration in Fremont County and Lander, WY, Buffalo, WY, and Cody, WY

“I felt that for the first time, my work while being incarcerated actually mattered.”

-Incarcerated crew member at LCC



“I invested my energy and emotional support to these plants as the days moved along. I was not ‘killing time’ as many do to keep their mind off of the fact of incarceration.

I truly felt a commitment to the plants and cared for them.”

-Incarcerated crew member at FCIH



**Location:** Lovelock, Nevada  
**Facility:** Lovelock Correctional Center (LCC)  
**Plants Grown:** 50,000 *Artemisia tridentata subsp. wyomingensis*  
**Planted Where?** Winnemucca, NV

**Location:** Carson City, Nevada  
**Facility:** Northern Nevada Correctional Center (NNCC)  
**Plants Grown:** 41,000 *Artemisia tridentata subsp. wyomingensis*  
**Planted Where?** Winnemucca, NV



LCC Sagebrush crew after boxing



A healthy sagebrush plug at LCC

## A SPACE TO GROW

As staff for the Sagebrush in Prisons projects, we are often asked what good we provide to incarcerated Sagebrush crews - are we just taking advantage of their labor? *No one* is in this work to do that, although there is much we don't have control over. *We are* in this work to benefit natural environments. However, restoration is possible without working in prisons. Instead, we choose *this* path for its opportunity to more meaningfully connect you to the environment in ways that you might not have known before. We believe it can provide space for you to heal, learn, experience, and live under a boundless sky - one with possibility for a more hopeful, connected, and impactful life - *no matter where that life is located*. In this way, a small bit of ecological and social justice can be served up in the world.

That said, we are practical too, and are constantly asking ourselves what knowledge, skills, and abilities might you need post incarceration, too? We envision this part of our re-vamped newsletter as space to grow, providing you with ideas about the workforce expectations, educational opportunities, and positions that might be of interest and build on what you have learned during your time with the sage. **Let us know what you'd like to see more of here.**

## Employment skill sets

We mention Knowledge, Skills and Abilities above (shorthand KSA) - this is one way that hiring managers can easily assess job competency. As we fine tune our curriculum, we are working toward building that into the content - so that YOU know how your KSA's fit with a specific job. Stay tuned for more on that.

Employers today are looking at soft skills, work-readiness skills, or foundational skills that improve performance. They want to know that your communication skills are good; can you work with a team; are you a self-starter? Education, yes - that may be required - but it can sometimes be replaced with experience.

What if post incarceration is not likely? These skills can also help you live a life of integrity in an environment not designed to make that easy.



SRCI sagebrush crew boxing up



WHF crew planting sagebrush at Gas Hills

# TYPES OF SAGEBRUSH

By Morgan Lake



Sagebrush, specifically Big Sagebrush, occupies more area than any other shrub on the face of the earth! There are over 20 different species of sagebrush in the western United States, which are further broken up into an abundance of subspecies. The most widespread and commonly seen is *Artemisia tridentata*, known as Big Sagebrush. There are four main subspecies noted from particular geographic areas and also genetically distinct, though they can interbreed where they overlap. Three subspecies that incarcerated crews grew this year are Basin Big Sagebrush, Mountain Big Sagebrush, and Wyoming Big Sagebrush.

**Each subspecies has specific habitat preferences and phenotypic (observable characteristics) differences:**

**Basin Big Sagebrush** (*Artemisia tridentata subsp. tridentata*) is the tallest of these three at roughly 5-7 feet tall with long, slim leaves. It grows in well-draining soils within cool-aired valleys. Historically this species has been heavily plowed, as it is viewed as an indication for good agricultural soil.

**Mountain Big Sagebrush** (*Artemisia tridentata subsp. vaseyana*) grows 2-4 feet tall, is flat topped, and has shorter, wedge-shaped leaves with shallow lobes. It is found at mid to high elevations on mountain slopes, and is the most abundant and palatable of the subspecies. Although all Big Sagebrush are aromatic, this subspecies has a higher phenolic content in its leaves. The phenolic compound is coumarin, which gives it a sweeter aroma compared to the others.

**Wyoming Big Sagebrush** (*Artemisia tridentata subsp. wyomingensis*) also grows 2-4 feet tall and has leaves that are similar to Mountain Big Sagebrush. The leaves can either be narrow or broadly wedge-shaped, and can have either shallow or deep lobes. The distinguishing factor in these leaves is that the middle lobe will be slightly longer than the lateral lobes. It will also keep its short flowering stalks for years, which gives it an interesting appearance of having dry, bare twigs growing from the plant. This subspecies is found on more harsh, dry lands at low and mid elevations.

Subspecies Common Name	Basin Big Sagebrush	Mountain Big Sagebrush	Wyoming Big Sagebrush
Subspecies Scientific Name	<i>Artemisia tridentata subsp. tridentata</i>	<i>Artemisia tridentata subsp. vaseyana</i>	<i>Artemisia tridentata subsp. wyomingensis</i>
Leaf Shape			
Shrub Shape			
Regions Found			

From: L. Schultz. 2012. Pocket Guide to Sagebrush. PRBO Conservation Science.



# CREW MEMBERS SHARE THEIR 'BOUNDLESS SKIES'

The Sagebrush Seed  
Awake in this cell  
Loveless cold bricks  
A place some call hell  
Gazing aimlessly  
into the sun,  
Praying for forgiveness  
From the things that we've done.  
Frail eyes of our broken past  
Mistakes we've made  
Dear prices we've paid  
& faces we've masked.  
Immersing deeply  
One book at a time  
Vastly soul searching  
This vast soul of mine  
& the words of growing sage  
To encompass this rhyme.  
Thank God, nothing is ever  
Quite as bad as it seems  
Blessed to be on a crew  
That provides a great means.  
The reasons are many  
So I'll give just a few  
Planting and nursing young sagebrush  
With laughter and love as they grow.  
For the grouse  
A hearty new meal  
From each little seed that we sow.  
Doing our part for the great ebb & flow.  
Replenishing the land  
From what the fire season took  
Healthy new brush



Painting by: Charles Trumble, ISCC



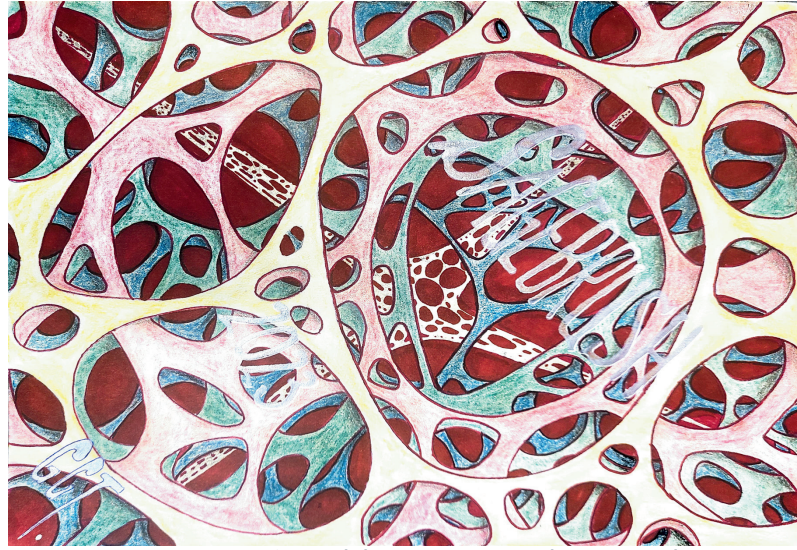
Provides a great cozy nook,  
Amongst a cold hard place  
That freedom seems so out of range.  
Each day we're given a chance  
For our spirits being freed  
Being part of a bigger change.  
A little key hidden  
In each new sagebrush seed.

-Robby Jorgenson, NNCC

# “BOUNDLESS SKIES” CONTINUED...

“I’ve learned that there is a lot more to sagebrush than meets the eye, to say the least. I had no idea how many things it impacts (ecosystem to economy). The whole program in itself has taught me so many general green-thumb tips (identifying diseases, pathogens, plant families, remedies, root systems, soil tips). Just being around plants most of the year has been my happy place and has given me purpose.”

-Incarcerated crew member at WHF



Artwork by an incarcerated crew member at LCC

## "The Work"

Pick em pluck em  
Hours in the sun

Water drips by the ton  
Muddy shoes, never fun  
Moving trays, never run  
Empty cones, separation  
Crowded rows, navigation

Sunny days, radiation  
Windy days, dehydration  
Cold nights, insulation

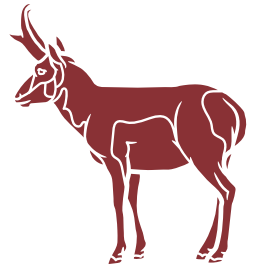
Grouse habitat, preservation  
Every day, dedication

Lime, soil, vermiculite, integration  
End result; conservation

-Incarcerated crew member at LCC

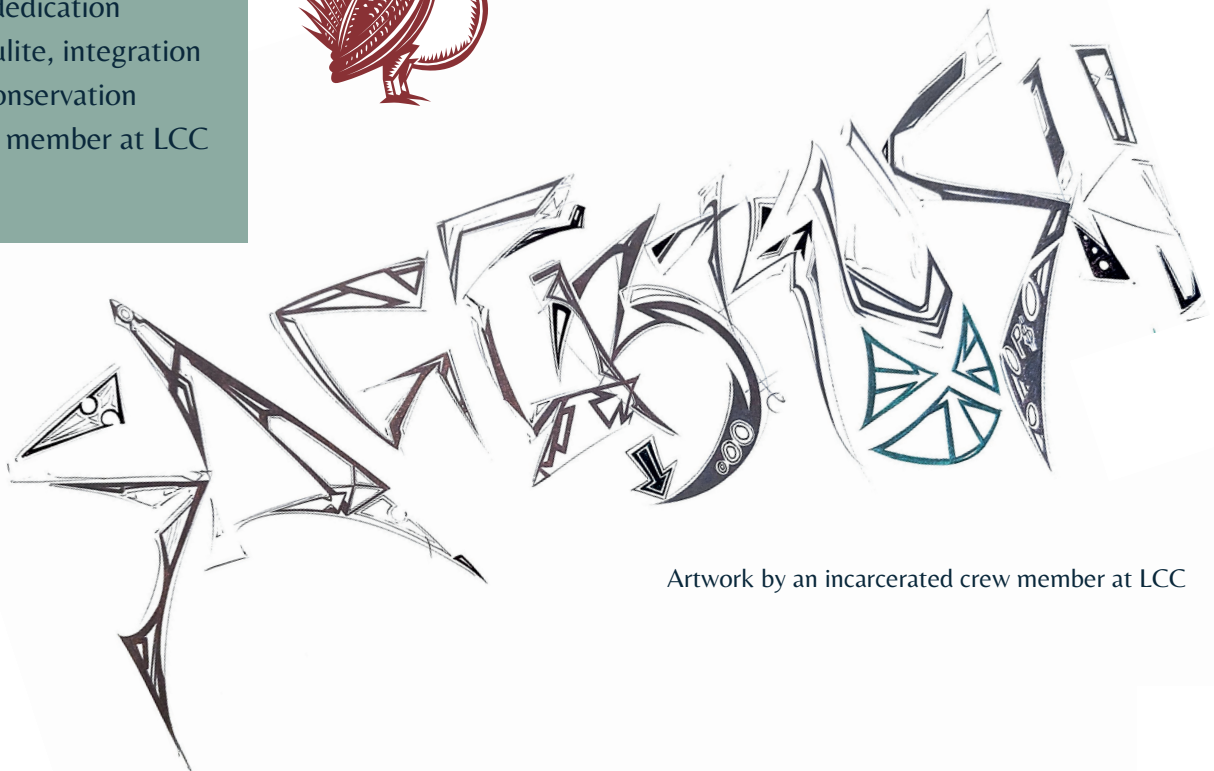
“I’ve been doing the sage program 2 years, have learned a lot about all kinds of things, not just growing plants, growing as a person.”

-Incarcerated crew member at WCCF



“I am grateful for the opportunity this program allows us to have to effect change inside ourselves and [have a] ‘Positive impact’ on our community.”

-Incarcerated crew member at LCC

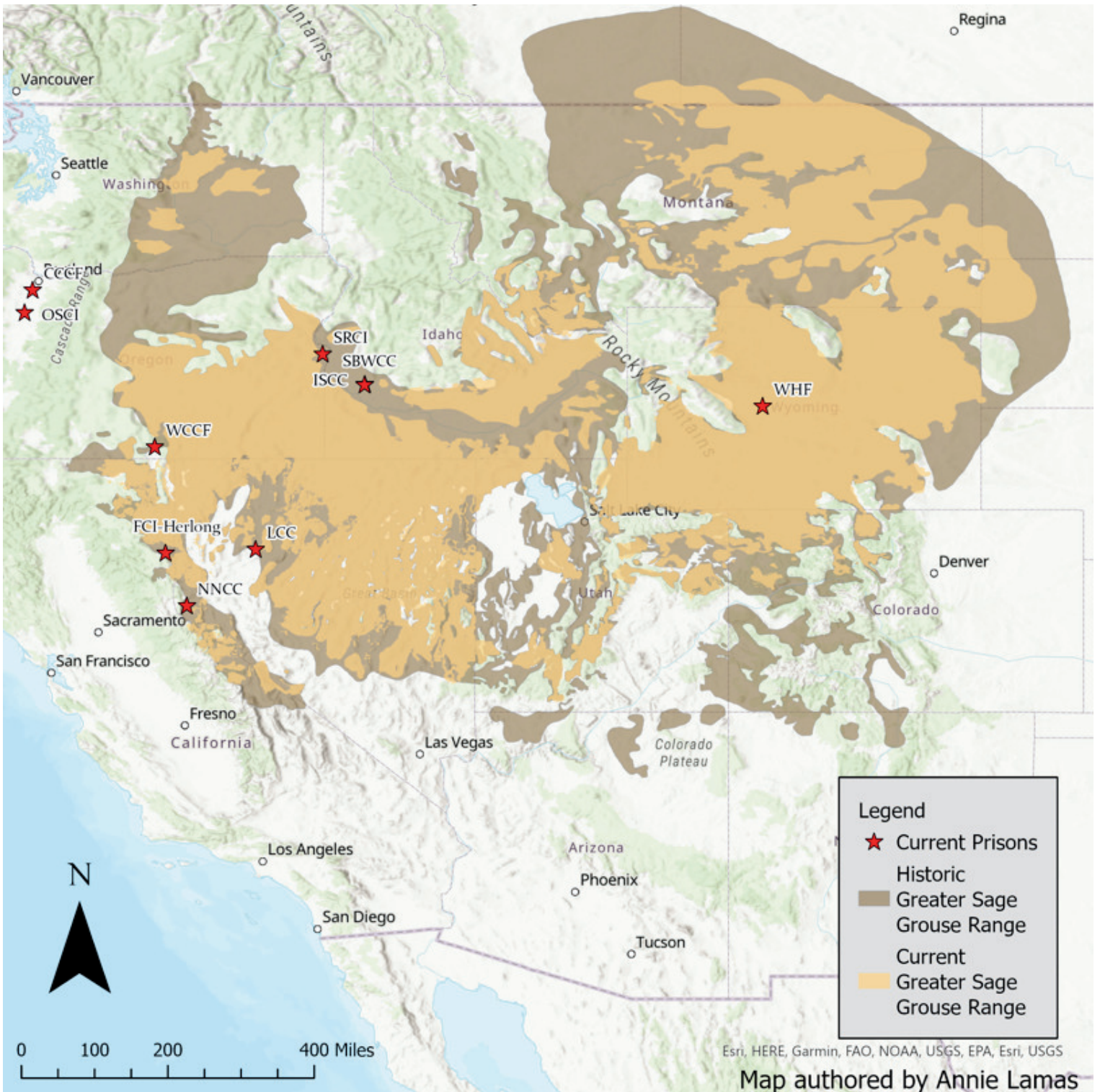


Artwork by an incarcerated crew member at LCC



# WHERE AM I?

## GREATER SAGE-GROUSE HABITAT!



### References and attributions:

Bat image by Paul Cryan

New York Natural Heritage Program. 2023. Online Conservation Guide for *Lasiurus cinereus*. Available from: <https://guides.nynhp.org/hoary-bat/>. Accessed November 13, 2023.

Bighorn Sheep image by Arizona Fish and Game Dept.

Arizona Fish and Game Department. 2023. Arizona's Wildlife. Available from: <https://www.azgfd.com/species/bighorn-sheep/>. Accessed November 13, 2023.

Greater Sage-Grouse image by Bob Wick

Bureau of Land Management via Courthouse News. 2023. California Fish & Wildlife moves to protect greater sage grouse. Available from: <https://www.courthousenews.com/california-fish-wildlife-moves-to-protect-greater-sage-grouse/>. Accessed November 13, 2023.

In this space, we hope to encourage you to reflect on your experiences in this project and get creative! Feel free to write, draw, muse, or just play. Use these prompts as guides, or create your own:

-If you could be any animal within the Sagebrush Sea, what would you be and why?

-You are a lone sagebrush plant. How do you reach out and communicate to others about...?

-The moon rose over the distant hill - as the light changed, I suddenly felt...

-You are a newly planted sagebrush, grown by \_\_\_\_\_. What is your life like now that you are outside the container and among other sagebrush friends? What do you hope to see, feel, be?

-You are a plant that loves to dance - and yet, you have no feet. Describe or draw yourself dancing and what it feels like.

-Imagine the inside structure of roots or shoots of the sagebrush plant - draw them - where are the highways for water and nutrients located?