Interim Core Map Documentation for Napa Bluegrass

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Interim Core Map Developer: U.S. Environmental Protection Agency (EPA), Office of Pesticide Programs

Species Summary

The Napa bluegrass (*Poa napensis*; Entity ID 595) is an endangered perennial bunchgrass in the grass family (*Poaceae*). The U.S. Fish and Wildlife Service (FWS) has not designated a critical habitat for the Napa bluegrass. This species is typically found in alkaline sites near thermal springs between 100 and 120 meters (340 to 400 feet) in elevation and co-occurs with the Calistoga allocarya (*Plagiobothrys strictus*). At the time of listing, Napa bluegrass is found in only two sites all of which are in Napa County, California: one is within private property belonging to Duffy's Napa Valley Rehab (formerly Myrtledale Hot Springs) and one is within property that was formerly the Calistoga glider airport.[1] Additional information on the species is provided in **Appendix 1**.

Description of Core Map

The core map for the Napa bluegrass is based on biological information. The outer extent of this core map is defined by property boundaries belonging to two private properties that FWS identified at the time of listing has having extant populations. The FWS 5-year review refers to these two sites as "Myrtledale Hot Springs" and "Calistoga Glider Airport". However, both private properties have since changed ownership. Myrtledale Hot Springs is now Duffy's Napa Valley Rehab and the Calistoga Glider Airport is owned by the City of Calistoga with no known land use (as of April 2025).

Figure 1 depicts the resulting interim core map for the Napa bluegrass. The size of this core map is approximately 108 acres. Landcover categories within the core map area are included in **Table 1**. Landcover is predominantly grassland/herbaceous.

The core map developed for the Napa bluegrass is considered interim. This core map will be used to develop pesticide use limitation areas (PULAs) that include the Napa bluegrass. This core map incorporates information developed by FWS and made available to the public; however, the core map has not been formally reviewed by FWS. This interim core map may be revised in the future to incorporate species expert feedback from FWS. This interim core map has a "moderate" best professional judgment classification to describe major uncertainties/limitations. The map is based entirely on property descriptions made by FWS where, at the time of listing, this species is known to have extant populations. EPA had to manually create the boundaries based on FWS' outdated property descriptions but was then verified to be consistent with locations of known hot springs. This core map does not replace or revise any range or designated critical habitat developed by FWS for this species.

[1] Duffy's Napa Valley Rehab is located at 3076 Myrtledale Rd, Calistoga, CA 94515. The coordinates for the old Calistoga gliderport is (38°34'48.0"N, 122°34'30.0"W) and the source for this is here: https://www.airfields-freeman.com/CA/Airfields_CA_SantaRosa.htm.

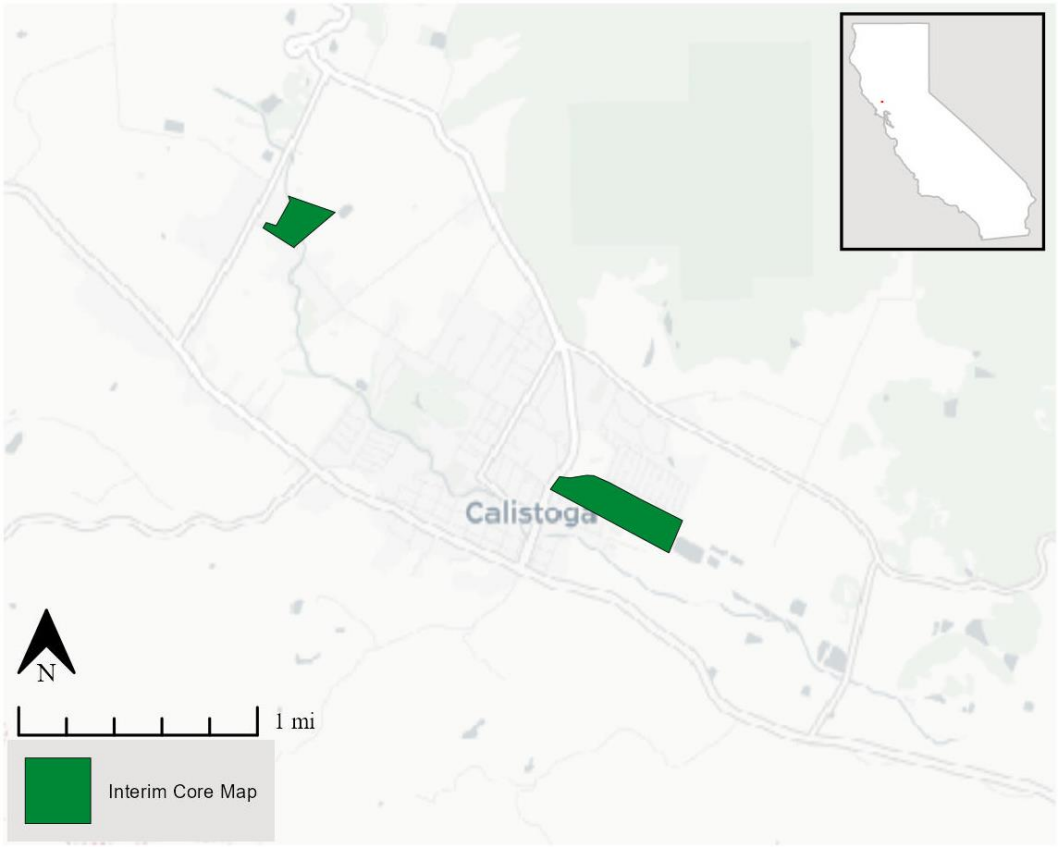

Figure 1. Interim core map for the Napa bluegrass.

Table 1. Percentage of Interim Core Map Represented by NLCD[2] Land Covers and Associated Example Pesticide Use Sites/Types.

Example pesticide use sites/types	NLCD Landcover (Value)	% of core map represented by landcover	% of core map represented by example pesticide use
Forestry	Deciduous Forest (41)	0	0
Forestry	Evergreen Forest (42)	0	0
Forestry	Mixed Forest (43)	0	0
Agriculture	Pasture/Hay (81)	0	1
Agriculture	Cultivated Crops (82)	1	1
Mosquito adulticide, residential	Open space, developed (21)	4	18
Mosquito adulticide, residential	Developed, Low intensity (22)	4	18
Mosquito adulticide, residential	Developed, Medium intensity (23)	4	18
Mosquito adulticide, residential	Developed, High intensity (24)	6	18
Invasive species control	Woody Wetlands (90)	0	81
Invasive species control	Emergent Herbaceous Wetlands (95)	0	81
Invasive species control	Open water (11)	0	81
Invasive species control	Grassland/herbaceous (71)	81	81
Invasive species control	Scrub/shrub (52)	0	81
Invasive species control	Barren land (rock/sand/clay; 31)	0	81
Total Acres	**Interim Core Map Acres**	**~108**	

Evaluation of Known Location Information

There are four datasets with known location information:

- Descriptions of locations provided by FWS;
- Occurrence locations in iNaturalist;
    - https://www.inaturalist.org/taxa/78648-Poa-napensis
- Occurrence locations in NatureServe; and

[2] Dewitz, J., 2023, National Land Cover Database (NLCD) 2021 Products: U.S. Geological Survey data release, https://doi.org/10.5066/P9JZ7AO3

    - https://explorer.natureserve.org/pro/Map/?taxonUniqueId=ELEMENT_GLOBAL.2.161644
- Occurrence locations in the Global Biodiversity Information Facility (GBIF).
    - N/A

EPA evaluated these four sets of data before selecting the type of and developing the core map. FWS appeared to have the most robust location information, providing property descriptions of where known extant sites were at the time of listing – these two sites form the entirety of the interim core map. Of the remaining sources of known locations, only iNaturalist contained research grade observations of which there were only three observations between 2018 to 2024. Even though these observations are reported to have occurred outside event the species range (**Figure A1-1**), they do not support expanding the core map outside of two listed properties because the precise locations are intentionally obscured. **Appendix 1** includes more information on the available known location information.

Approach Used to Create Core Map

The core map was developed using the "Process EPA Uses to Develop Core Maps for Draft Pesticide Use Limitation Areas for Species Listed by the U.S. Fish & Wildlife Service (FWS) and their Designated Critical Habitats"[3] (referred to as "the process"). EPA developed the core map using the 4 steps described in the process document:

1. Compile available information for a species;
2. Identify core map type;
3. Develop the core map for the species; and
4. Document the core map.

For step 1, EPA compiled available information for the Napa bluegrass from FWS, as well as observation information available from various publicly available sources (including FWS, iNaturalist, NatureServe, and GBIF). The information compiled for Napa bluegrass is included in **Appendix 1**. Influential information that impacted the development of the core map included:

- Occurrences and known locations of the Napa bluegrass are consistent with the sites listed by FWS as containing all known extant populations.
- This species inhabits alkaline meadows fed by hot springs.
- Occurrences and known locations of the Napa bluegrass are consistent with location of known hot springs.

For step 2, EPA used the compiled information to identify the core map type including species range, known location information, and habitat requirements. The extant populations are located in Calistoga, CA, within the species' range (**Figure A1-1**). All known extant populations (at time of listing) occur on two properties: Duffy's Napa Valley Rehab (previously the Myrtledale Hot Springs) and the (now abandoned) Calistoga Gliderport. Therefore, EPA based the core map entirely on the boundaries of the two properties. The entire range of the species was not used as the core map because the range contains areas where the species does not occur.

[3] Dated 2024, available online at: https://www.epa.gov/endangered-species/process-epa-uses-develop-core-maps-pesticide-use-limitation-areas

For step 3, EPA used the best available data sources to generate the core map. Data sources are discussed in the process document. For this core map, EPA used the website https://app.regrid.com/us# to find boundaries for each of the two properties. The agency then manually drew those boundaries using https://geojson.io/. **Appendix 2** provides more details on the GIS analysis and data used to generate the core map.

Discussion of Approaches and Data that were Considered but not Included in Core Map

EPA explored using the range for the core map, however the range from FWS included areas where the species was not known to exist. Furthermore, FWS identified two locations where there were known extant occurrences of the species.

Appendix 1. Information Compiled for the Napa bluegrass During Step 1

1. **Recent FWS documents/links and other data sources**
   - Five Year Review (2023) (https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/species_nonpublish/5589.pdf)
   - Five Year Review (2010) (https://ecosphere-documents-production-public.s3.amazonaws.com/sams/public_docs/species_nonpublish/1548.pdf)

2. **Background information**
   - **Status**: Federally listed as endangered in 1997
   - **Resiliency, redundancy, and representation** (the 3Rs)
     - NA
   - **Habitat**
     - This species "is typically found in alkaline meadows and grasslands, mesic areas including vernal pools, next to and fed by hot springs and small geysers." – 2010 5-year review.
     - The species occurs "between 100 and 120 meters (340 to 400 feet) in elevation" – California Department of Fish and Game 2005b.
   - **Pollinator/reproduction**
     - No information provided in FWS 5-Year Reviews
   - **Taxonomy**
     - Terrestrial Plant
     - This species "is an erect, tufted perennial bunch grass in the Poaceae (grass family)" – 2010 5-year review.
   - **Relevant Pesticide Use Sites**
     - No information provided in FWS 5Year Reviews
   - **Recovery Criteria/Objectives (2006 recovery plan)**
     - There is currently no recovery plan for Calistoga allocarya or Napa bluegrass.
   - **Recovery Actions (recommendations from 2013 5-year review)**
     - "Partner with private landowners, the California Department of Fish and Wildlife, the City of Calistoga, and the California Native Plant Society to ensure protection of all known populations of Calistoga allocarya and Napa bluegrass."
     - "Work with the California Department of Fish and Wildlife, the City of Calistoga, and the California Native Plant Society to ameliorate or eliminate any threats to Calistoga allocarya and Napa bluegrass from hydrological changes and competition from invasive plants."
     - "Collect seeds from both populations of both species and store them in Center for Plant Conservation certified botanic gardens to guard against extirpation from chance catastrophic events."
     - "Follow policy CON-17 and associated conservation measures as stated in the Napa County General Plan to "Preserve and protect native grasslands, serpentine grasslands, mixed serpentine chaparral, and other sensitive biotic

communities and habitats of limited distribution" (Napa County Department of Conservation, Development, and Planning 2009, p. CON-28)."

- "Follow policies P1.1-3 and P1.1-4 and associated actions as stated in the Open Space and Conservation Element (Updated 2012) of the City of Calistoga General Plan to continue "efforts to identify and map biological resources on the gliderport property [airport property], which provides an important and unique habitat area within the city limits" and "explore the possibility of designating parcels as Natural Resource Preservation Areas in areas of the city known to contain sensitive and unique species, in order to protect these resources" (City of Calistoga 2012, p. OSC-23)."
- "Conduct a population assessment for each species and continue monitoring annually."

3. **Description of Species Range**
   - **Figure A1-1** depicts the FWS range, FWS' extant population locations, and iNaturalist occurrence data. The range was last updated on June 10, 2021. The total acreage of the range is around 6,020 acres.

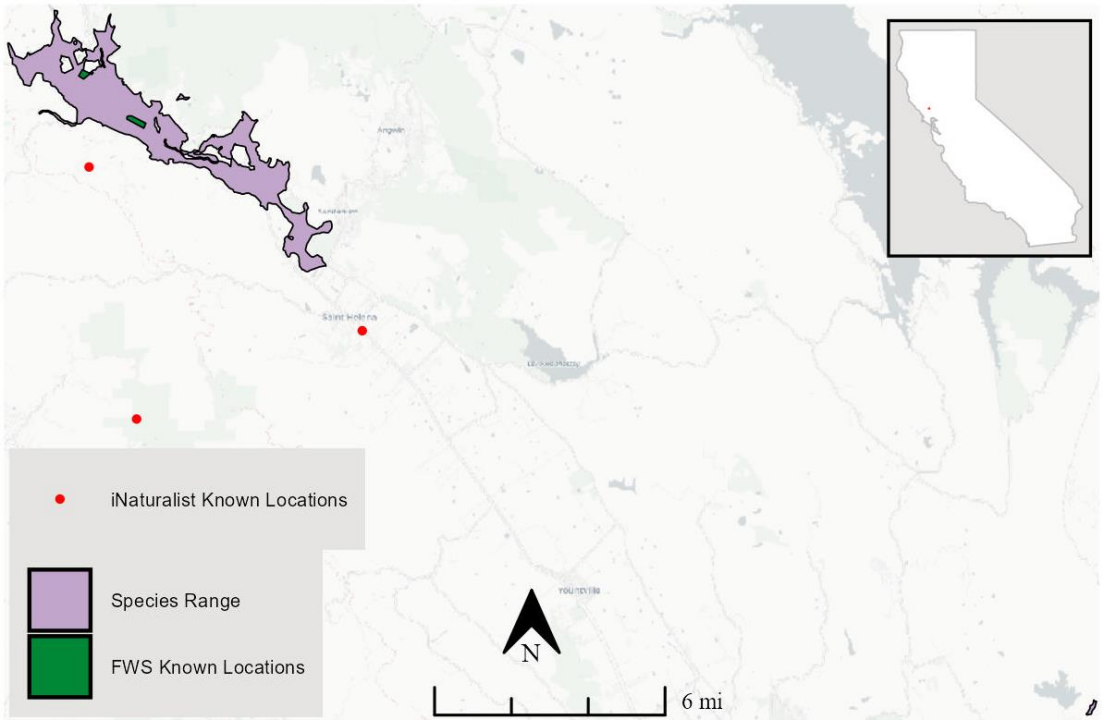

Figure A1-1. FWS range for the Napa bluegrass. The total acreage of range is around 6,020 acres.

4. **Critical Habitat**
   - FWS has not designated a critical habitat for this species (https://ecos.fws.gov/ecp/species/2266)

5. **Known Locations**
   - Known Locations Described in FWS Recovery Documents

- Currently found in only two locations in Calistoga, CA (Duffy's Napa Valley Rehab and the former Calistoga glider airport location)
- **Figure A1-2** depicts the currently known locations from FWS.

- **Occurrences Included in Public Databases**
  EPA queried iNaturalist, GBIF, and NatureServe. Occurrences in NatureServe were also consistent with other occurrence data (linked here). Collectively, the occurrence data are consistent with the two extant population sites.

  iNaturalist (available here) had 3 research grade observations for this species, all of which appear to fall outside 2 listed sites with extant populations and outside of the species range (**Figure A1-1**); however, the positional accuracy of the points do not allow EPA to determine if these occurrences were truly inside or outside of the sites or range.

  GBIF had no information.

  Collectively, the occurrence data are consistent with the three occupied watersheds included in the core map.

Appendix 2. GIS Data Review and Method to Develop Core Map (Step 3)

This core map was created based on biological information, including known extant locations.

1. **Dataset References and Software**
   i. NLCD 2019
   ii. Software used: R
   iii. FWS Species Range – last updated on January 27, 2018
   iv. https://app.regrid.com/us/ca#t=property
   v. https://www.yelp.com/biz/myrtledale-hot-springs-calistoga
   vi. https://experience.arcgis.com/experience/b4e8785f0f75464b9e08547ccf0b18d7
   vii. https://www.airfields-freeman.com/CA/Airfields_CA_SantaRosa.htm

2. **Datasets Used in Core Map Development**
   Datasets i. through iii. are described in EPA's process document. The "regrid" website (iv.) was used to verify property boundaries. The "yelp" website (v.) was used to verify address of the old Myrtledale Hot Springs. The "experience.arcgis" website (vi.) was used to verify that there is a known hotspring in the area. The "airfields-freeman" website (vii.) was used to verify the coordinates of the old Calistoga Gliderport.

3. **Core Map Development**
   - EPA started with the range identified by FWS.

This species only has two known extant populations, both located in Calistoga, CA (Myrtledale Hot Springs and the former Calistoga glider airport location). EPA searched for these locations and then crossed referenced the identified locations with the county property lines (https://app.regrid.com/us/ca#t=property) to create the interim core map.