Modoc Plateau Vegetation Mapping Project

Sensitive Natural Communities powerpoint transcript

Slide 1 (1:00): Introduction and Acknowledgements

This presentation is about Sensitive Natural Communities. First, I'd like to thank my co-producer, Julie Evens, and Todd Keeler-Wolf, who provided all the photographs you'll see, including this one of the Idaho fescue – bluebunch wheatgrass – pine bluegrass Alliance, which is considered a sensitive natural community. We use the term "sensitive" for rare vegetation types to avoid the legal term "rare," which is used in California state law for some plants. It also aligns with wording in CEQA, and "natural communities" is the term that historically has been used by natural heritage programs such as the California Natural Diversity Database.

Slide 2 (2:00): Purpose of Presentation

In this presentation we'll answer these three questions – How are natural communities ranked for rarity to determine if they are sensitive, what are the implications of ranking, and where can you find ranking information? – We can't dive into much detail in this short presentation, but we are planning to give a more detailed webinar on this topic later, if you are interested.

Slide 3 (2:26): How natural communities are ranked – Natureserve methodology

The first question is how are communities ranked? We previously ranked them based on expert opinion as to the extent of the community and number of occurrences. As we have mapped more of the state, we have increasing information on the distribution of and threats to communities, so in the last several years we have been using NatureServe's ranking methodology. This provides standardization of the process for ranking species and communities globally (that is, over the entire range) and subnationally (in the U.S., by state). This methodology is the same that is used by CNDDB to rank plants and animals. It has been vetted across different taxa and ecosystems to provide accurate and consistent rankings. Here you see the factors considered in ranking: the range and area occupied, the number of occurrences, the number of viable occurrences, and how specific the taxon is to a certain environment. It also considers threats, and short and long-term trends, if known.

Factors are organized into three categories (**Rarity, Threats, Trends**)

Slide 4 (3:52):Natureserve Rank Calculator.

NatureServe has incorporated their ranking methodology into a rank calculator in the form of an excel spreadsheet. Here is the summary page of the for the calculator, using the *Little white navarretia – Cusick's popcornflower* Vernal pool Alliance. I won't spend time on going through this but I want to show you that it IS a calculator that takes your inputs, weights them, and spits out a rarity rank from 1 to

This sheet records the range, number, and viability of occurrences of the community, which account for 70% of the ranking weight. It also summarizes threats, which account for 30% of the ranking weight. Ranks range from 1 to 5, where 1 means the community is at very high risk of extirpation due to a very restricted range, very few populations or occurrences, very steep declines, severe threats, or other factors. Rank 5 is at very low or no risk of extirpation due to a very extensive range, abundant or invasive

populations or occurrences, and little or no threats. We consider ranks 1 through 3 to be sensitive, while ranks 4 and 5 are not.

Slide 5 (5:11): Example of map for ranking.

Here is an example of the background work necessary for the range, areal extent, and number of occurrences. This map shows the 9 occurrences of the alliance in the mapping area, which total 107 acres. The occurrences are in pink and are widely-buffered so that you can see where they are, though they would not show at this scale if drawn at actual size. The range, which extends from south of Lake Tahoe to the Oregon border (and no further, because this is for the state rank) has been drawn to include all known and suspected occurrences of the type based on literature review, other sampling, and potentially on observations of the dominant species from sources such as Calfora.

Slide 6 (6:09): Calculator page for threats.

The calculator has a page to document threats in 11 major categories, such as

Residential & commercial development, Agriculture & aquaculture, Transportation & service corridors, Biological resource use, and Climate change & severe weather. An overall threat is calculated based on the number, scope, and severity of threats. This is then combined with the rarity and range information to estimate the overall rank. Each rarity rank is discussed and agreed to by both VegCAMP and the CNPS Vegetation Program ecologists, and we archive the rank calculators and spatial data so that they can be reviewed by others. The comments fields are helpful for providing more detail or references. We have started to get outside peer review of the rarity ranks, for example, Kyle Merriam helped review the ranking factors for this vernal pool type.

Slide 7 (7:19): Example, New and Updated Rankings.

The top section of this slide lists the New alliances from this project and their ranks. The bottom section lists previously known alliances that have updated ranks . Note here that new information from this project resulted in rankings of less rare for the first and third previously known alliances, and more rare for the second. Appendix A in the report lists types found in the mapping area. These include 4 new alliances, 2 of which are sensitive, and 28 new Associations, 22 of which are sensitive. We haven't yet completed ranking of all of the types in the Modoc project.

Slide 8 (8:33): Examples of sensitive natural communities from the Modoc Plateau area.

So here are some photos of sensitive types in the Modoc project area: the first is the Mountain mahogany - Mountain big sagebrush Association. This one is interesting because we also have an association of Mountain mahogany with another *subspecies* of sagebrush, Artemisia tridenta ssp. TRIDENTATA, which is described from desert ecosystems and has a different suite of species associated with it. This is a newly described association for California and can be found at higher elevations within the study area and is typically found adjacent to white fir and/or yellow pine stands.

Slide 9 (9:17): Examples of sensitive natural communities from the Modoc Plateau area

Here is an example of Low sagebrush / pine bluegrass association. This association is found at lower elevations in the study area on smectite clay soils that crack and swell throughout the year depending on precipitation. It can have a very diverse herbaceous layer, but these stands are susceptible to invasive annual grasses with disturbance by grazing and fire.

Slide 10 (10:21): Examples of sensitive natural communities from the Modoc Plateau area

Black sagebrush/ pine bluegrass Association. Stands of the *Artemisia nova* alliance are the driest habitats of all the *Artemisia*-dominated alliances. The alliance is sensitive, which makes this association, the only association documented in this project area so far, also sensitive.

Slide 11 (10:45). Examples of sensitive natural communities from the Modoc Plateau area

This is oceanspray (or ironwood) Association. This association tends to form small stands, typically in rock outcrops and on steep talus slopes.

Slide 12 (11:00). Examples of sensitive natural communities from the Modoc Plateau area

Tansyleaf evening primrose-Poverty weed Provisional Association, in the *Navarretia leucocephala ssp. minima- Plagiobothrys cusickii* Alliance. This is called provisional because it hasn't been sampled at least ten times. We expect there are more stands of this in the project area, but it is likely still very restricted in range and thus is considered sensitive. The two native species, Tansyleaf evening primrose and Poverty weed, tend occur in areas disturbed by livestock or from tilling seasonally saturated soils, but these stands do contain vernal pool endemic species that are restricted to this region, such as Bacigalupi's downingia.

Slide 13 (12:01): Example map.

Here is a sample of the map south of Pine Creek on the Likely Tableland, showing some of the sensitive natural communities. Later, Rosie will be showing you how to use BIOS or ArcGIS to show rare communities in your area of interest.

Slide 14 (12:23): Laws, regulations and programs addressing sensitive natural communities

The second question we want to answer is what are the implications of the rarity ranks? CDFW's protocols for assessing impacts to plant species and natural communities call for disclosing project impacts to sensitive natural communities, which are those listed as S1, S2, or S3, similar to sensitive plant species as determined by CNDDB. Here are some of the laws and regulations that apply to sensitive communities, which we will go over in more detail in our future webinar. In general, however, there is no equivalent to the state or federal endangered species act for natural communities, but there is some requirement to disclose impacts to them, and depending on the lead agency, mitigate impacts to them. CEQA is probably the most widely used, but even some County General Plans have ordinances requiring avoidance of some sensitive communities.

Slide 15 (13:40): Where to find information.

Our third question was: Where can you find ranking information for natural communities? VegCAMP's website has pdf and excel versions of the entire list, a list that includes only sensitive types, and a list of recent changes and additions, all ordered alphabetically by scientific name within life form. The G and S ranks are provided when we have them for Alliances and some associations. This excerpt and the photo show the Eriogonum spp. / Poa secunda Alliance. The "GNR" means the global distribution has not been ranked, as this alliance extends into neighboring states. Note that because the Alliance has a state rank of 3, all of its associations are marked "yes" for sensitive, even though they may not have been ranked yet. This is because all of the occurrences of all of the associations within an alliance are considered when determining the ranking for the Alliance. As Rosie will show, the ranks are also an attribute in the

vegetation layer. Descriptions of all alliances are in the project report, and Alliance descriptions and ranks are also found in the Manual of California Vegetation Online.

Slide 16 (15:05): Extent of classification and mapping in California and wrap-up.

Here's the current state of classification and mapping in California. You can see that both the classification and rarity rankings will likely change as we learn more and complete the state.

Slide 17 (15:23): Questions.

And that's a short intro to sensitive natural communities. As I said, we will be working on a more detailed webinar if you are interested.