

DRAFT

San Diego Thornmint Working Group November 10, 2010 Meeting Notes

Compiled by Jessie Vinje (The Center for Natural Lands Management) on November 24, 2010

These meeting notes are a compilation of the presentation and discussions that occurred as part of the second San Diego Thornmint Working Group meeting that was held at the California Department of Fish and Game Office in Kearny Mesa on November 10, 2010. The primary goal of the San Diego Working Group was to connect all San Diego thornmint experts and enthusiasts to discuss monitoring, management and research for San Diego thornmint. The three topics that were discussed during the meeting were: 1) monitoring, 2) management, and 3) future research and funding needs. The meeting notes by topic are presented below.

1) Monitoring Presentations

Frank Landis volunteered to organize a large survey effort for San Diego thornmint using the California Native Plant Society (CNPS) volunteers. He found that using volunteers can be a very positive experience and that volunteer retirees specifically, are readily available and reliable. The more remote San Diego thornmint occurrences were a little more difficult for volunteers to get too. The CNPS volunteer effort was inexpensive with most money being spent on printing information to disseminate to volunteers. He found that it was sometimes difficult to get California Natural Diversity Database (CNDDDB) data sheets back from volunteers. Twenty one element occurrences were surveyed through the CNPS effort, for a total of ~48,000 thornmint counted.

Betsy Miller of the City of San Diego (City) presented monitoring results associated with monitoring conducted in 2010. The City filled out CNDDDB forms and the City Multiple Species Conservation Program (MSCP) monitoring forms for all of their thornmint occurrences. She noted that some occurrences have been inundated with exotic plants and in some cases the percent cover of these exotic species has increased significantly. She mentioned that her monitoring results lead to some sites receiving weed treatments and that those treatments weren't as effective as hoped for, but that perhaps the wrong exotic plant category was targeted during the treatment efforts (i.e, broad-leaf exotics targeted versus exotic grasses). She found a positive correlation between rainfall and thornmint numbers at some occurrences.

Meredith Osborne from the California Department of Fish and Game (CDFG) presented results of monitoring on one CDFG managed thornmint occurrence. The monitoring occurred in occupied habitat that had received one herbicide application of Fusilade II and a controlled area that had not received treatment. She found that the exotic grasses in the occupied habitat that was sprayed with Fusilade II had been controlled and was significantly lower in exotic grass cover than the control. She also found that native and exotic forb cover was higher in the Fusilade II treatment areas when compared to the control. She did not find a difference in thornmint numbers between the Fusilade II treatment plots and control plots. She found it difficult to use the Center for Natural Lands Management (CNLM) monitoring methodology for her study.

Patrick McConnell of CNLM presented monitoring information for CNLM managed thornmint occurrences. He found that five quadrats (1/2 meter x 1 meter: CNLM habitat assessment methodology) placed in occupied San Diego thornmint habitat are enough to gather and analyze specific attribute data, such as percent cover. This method cannot be used to accurately estimate density. Direct counts should occur to determine density in small occurrences. His data may indicate that exotic grasses increase in cover post-drought. He found a positive correlation between rainfall and thornmint counts, much like Betsy Miller. He found that thornmint counts were lower in high rainfall years when preceded by a drought year. This may indicate that a lower amount of seed is produced in drought years which leads to a low population count the following year, even when precipitation amounts are high for that year.

Jessie Vinje of CNLM presented percent cover and thornmint count data for a CNLM-owned thornmint occurrence and a San Diego County-owned (County) thornmint occurrence (located north of Palomar Airport Road, Carlsbad). The County occurrence is of very high quality and the CNLM occurrence is of fair quality. She found large differences in percent cover of native and exotic species between both occurrences and a significant difference in bare ground cover between both occurrences. The high quality occurrence had more bare ground than the fair quality occurrence. She found, that on average, the County occurrence supported more thornmint per quadrat than the CNLM-managed occurrence perhaps indicating that more thornmint can grow in areas with higher bare ground and less exotic plant and thatch cover.

Jessie Vinje presented additional information regarding CNDDB forms that had been filled out as part of the Thornmint Working Group monitoring effort and added that an additional 16 thornmint occurrences had been surveyed as part of the Working Group effort, for a total of 35 occurrences and ~ 50,000 thornmint plants counted.

2) Management Presentations

John Ekhooff of CDFG presented data on occupied thornmint habitat treated with Fusilade II. He found that the thornmint, which had been sprayed with Fusilade II, did not appear to be negatively affected by the herbicide application. The application of Fusilade II did control the exotic grasses in the occupied habitat, but these grasses seem to have several life cycles and even though the initial exotic grass cover was knocked back, a new crop of exotic grasses sprouted later on in the season. He also found that exotic forb cover increased in the treated plots when compared to the control plots.

Mike Kelly presented information on a research project that he is currently conducting that will look at the effects of Fusilade II and Transline (broad-leaf specific herbicide, but most effective on Asteraceae) on thornmint. This is a greenhouse study and he should have results in late 2010 or early 2011. If there are no effects to thornmint, the application of both herbicides in occupied thornmint habitat would help to not only control the exotic grasses, but also control the aster-specific broad-leaf exotics that fill in the niche left when the exotic grasses are removed. Mike Kelly found that Fusilade II had little to no effect on *Nassella* spp., chocolate lily, and mariposa lily when sprayed over the tops of these species.

CNLM found it safe to spray Fusilade II over the top of vegetative thread-leaf brodiaea and common goldenstar without negatively affecting either species.

Ron Rempel stated that San Diego State University (SDSU) is testing the effects of Fusilade II on butterfly larvae. This is related to a Quino checkerspot butterfly project.

Michael Klein also expressed concern about the impacts from herbicides like Fusilade II on ground nesting pollinators.

The possible use of other herbicides was discussed as well, but concern was expressed because thornmint emerges early in the season, almost at the same time as the exotic grasses and could be impacted with herbicide application.

Purple false brome (*Brachypodium distachyon*) is a highly problematic species in occupied thornmint habitat and may be responsible for complete eradication of thornmint in some occurrences.

3) Future Research and Funding Sources

Jonathan Snapp-Cook of the United States Fish and Wildlife Service (FWS) presented the recommendations from the San Diego thornmint 5-year review document.

Patricia Gordon-Reedy of the Conservation Biology Institute (CBI) presented information on purple false-brome in occupied thornmint habitat at the Crestridge Ecological Reserve. The biology of this exotic grass was looked at and she found that multiple generations per year are produced. She found that there are approximately 25,000 seeds per square meter and that the seed bank is likely viable for between 1 and 3 years. She stated that one of two thornmint occurrences at Crestridge that had not been re-located after the 2003 Cedar Fire was re-located in 2010 by CBI. Site differences pre and post fire included a heavy infestation of purple false-brome and other exotic grass and forb species. More specifically, the occurrence that was re-located supported low levels of purple false brome, while the occurrence where no thornmint plants were found was completely dominated by purple false brome. The same observation was made by Jessie Vinje of CNLM in other thornmint occurrences where no plants were found. Patricia Gordon-Reedy also suggested forming a smaller group that would work specifically on the purple false brome issue.

Patricia Gordon-Reedy also discussed the National Plant Conservation Initiative Grant (through the National Fish and Wildlife Foundation) for which CBI applied. If awarded, they would be collecting thornmint seed. She also mentioned that this grant occurs annually and that perhaps the Thornmint Working Group would be interested in applying next year.

Zack Principe of the Nature Conservancy (TNC) informed the group about a thornmint occurrence (San Vicente Element Occurrence 78) that was extant when grazing occurred within the occurrence, but since grazing was stopped (in 2005), the occurrence has not been re-located. He is interested in conducting a research experiment that would simulate grazing (dethatching project) to see if thornmint will re-occur in the occurrence. John Ekhoft of CDFG is going to work with Zack on this project as the occurrence is on CDFG owned lands.

Some individuals did think that cattle grazing should occur again in the vicinity of the occurrence as the thornmint occurrence was better off with the grazing.

Ron Rempel gave a presentation on the Transnet Environmental Mitigation Funds (EMP) that are going to be made available for 2011. San Diego thornmint (species driven management/adaptive management) is a target species for 2011 EMP funding. If applying, partnerships should be considered and post-docs from SDSU could design the studies. A Request for Proposals will come out in January and the grant project could be a 5-year long project, if desired. Ron Rempel and Yvonne Moore would be happy to meet with anyone considering applying for thornmint adaptive management research under the EMP grant opportunity.

CNLM is considering applying for EMP funding to study the genetic differences within and among thornmint occurrences and is looking for partners in this effort. The City of San Diego, TNC, and the FWS Reserve System all said they would like to partner on the proposal or a more expanded version of the proposal to cover San Diego thornmint issues raised by the working group.

Mike Kelly indicated that increased nitrogen deposition may be responsible for the exotic grass increase. Perhaps we should consider testing the soil for nitrogen levels in occupied thornmint habitat.

Miscellaneous Other Notes

Jonathan Snapp-Cook envisions a flow chart to identify high quality thornmint occurrences so that we can keep them high quality by managing the habitat.

CNLM is preparing a thornmint abstract paper that will be disseminated to the working group once it's finished. This paper will provide a useful summary of thornmint information that would be a central reference (as opposed to consulting numerous documents) and that would provide a variety of information, going from the most basic and factual (distribution, taxonomy, etc.) to the more subjective (e.g., management concerns and actions).

CNLM will send out an email for those that are interested in remaining part of the working group. From this point on, all correspondence would occur through the email list serve. Another meeting would only be held in one year from now (November 2011) if there is sufficient interest.

Summary of Action Items

- 1) Smaller working group for the Transnet EMP Grant
- 2) Mike Kelly herbicide study results
- 3) Jonathan Snapp-Cook flow chart to identify high quality occurrences
- 4) CNLM abstract paper
- 5) San Diego Thornmint Working Group email list serve