

Beardtongue Future Condition Report – December 2020 Draft

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December 7, 2020

In a separate document address the following:

1. Is our description and analysis of the species' needs, biology, habitat, population trends, and historic and current distribution of the species accurate?

Yes. The report accurately describes the species' currently known distributions and population status and trends.

2. Does the Future Condition Report provide accurate and adequate review and analysis of the future condition of the species?

Yes. The future conditions projections are consistent with my understanding of existing and potential future oil shale, oil and gas, and tar sands exploration and development across the species' ranges.

3. Are our assumptions and definitions of suitable habitat logical and adequate?

Yes.

4. Are there any significant oversights, omissions, or inconsistencies in our Future Condition Report?

No. The report is thorough and in depth. I have a few suggested changes to specific items detailed in the following page.

5. Are the conclusions we reach logical and supported by the evidence we provide?

Yes. The conclusions are logical and follow with my understanding and experience with the species.

6. Did we include all the necessary and pertinent literature to support our assumptions/ arguments/ conclusions?

Yes. I have a citation recommendation in the following page.

p.5 bullet#1: I don't think you mean loss of 72,455 acres of pollinator habitat? The statements that follow this bullet all refer to acres remaining, not acres lost.

p. 6-7 bullets #2 and #5: remaining large populations are 10 or 11? Says 11 in bullet 2 and 10 in bullet 5.

p. 42 paragraph 7: Please note that the iButton monitors were removed from the monitoring sites in 2019 and will not be redeployed for two reasons: 1) the population and threats monitoring methods and study site locations are actively being revised (2020-2021) to better address monitoring objectives stated in the CA and the associated livestock grazing and weed management plans; and 2) the Team does not believe that the iButton metrics (temperature, relative humidity) were useful surrogates for soil moisture or precipitation. The Team will rely on spatially explicit modeled climate data (PRISM) to assess climate trends across the species' ranges and between years. The modeled climate data can be used in the same way to correlate population trend data to evaluate species-specific responses to climate patterns.

p. 45 paragraph 2: should also cite the Uintah County zoning ordinance revision in 2018 (Penstemon Conservation Team 2019 [2018 Annual Report p. 5 + Appendix A]).