Project Topic Proposed Workflow

egb

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I. Literature review

We expect the literature review will be around 5 well-cited paragraphs that do the following:

1. Introduce the problem and explain why

Pollinator populations are experiencing significant declines due to habitat loss and land-use changes such as deforestation and agricultural expansion, as well as wider "threats to global food supply and the stability of wider pollination systems in non-crop vegetation. . . .[and] disruptions of numerous plant-pollinator systems" (Mader et al., 2011). This hypothesis tests how different land-use types–mixed forests and grasslands–impact pollinator diversity. Understanding which land-use types most support pollinator diversity is critical to understanding how habitat changes affect pollinator populations because it provides greater insight into which habitats pollinators rely most heavily on. Identifying which habitat types best support pollinator diversity can inform land management strategies to protect these populations because it can provide insight into which land-use types are most critical for pollinator diversity.

2. Past work and data available

Similar questions have been raised and answered in different regions around North America. In Vermont, USA, it was found that greater species diversity was correlated with grasslands and lower was correlated with deciduous and mixed forest cover (Richardson et al., 2019). In Southeastern United States, pine forests and extensive wetlands correlated negatively with bee richness, while open canopies correlated positively (Ulyshen et al., 2024). Our project looks to answer similar questions, specifically exploring Oregon. In addition to the dataset from OBA, we will be using the National Land Cover Database (NLCB), which is a dataset that provides land cover information across the country.

3. Purpose of the study

- Further refine your approach (e.g., what data will you combine, how will you address the question)
- Justify why this is needed now (e.g., visualization to test a new dimension of the question or better convey an old one)

4. Hypotheses/questions ** How does pollinator diversity change between grassland versus forested areas within specific elevational bands in Oregon? ** We predict that Grassland areas have greater bee species diversity and heterogeneity compared to forested areas within the same elevational band.
** The null hypothesis is that there is no variation in pollinator species diversity between grassland and forested areas in Oregon.

This is a great reference on scientific writing: Turbek, Sheela P., Taylor M. Chock, Kyle Donahue, Caroline A. Havrilla, Angela M. Oliverio, Stephanie K. Polutchko, Lauren G. Shoemaker, and Lara Vimercati. "Scientific Writing Made Easy: A Step-by-Step Guide to Undergraduate Writing in the Biological Sciences." The Bulletin of the Ecological Society of America 97, no. 4 (October 2016): 417–26. https://doi.org/10.1002/bes2.1258 Links to an external site..

When you click the **Knit** button a document will be generated that includes both content as well as the output of any embedded R code chunks within the document. You can embed an R code chunk like this:

II. Dataset identification

III. Workflow plan

IV. Partner contributions