

# **Document of collaboration**

## **HerbVar: A collaborative, global study of variability in herbivory**

Welcome to HerbVar! We are a collaborative network of researchers interested in understanding how plant–herbivore interactions vary across plant species around the globe. Most of the field’s current understanding of large-scale patterns in herbivory and plant–herbivore interactions come from studies focused on average levels of herbivory. We aim to advance our fundamental understanding of plant–herbivore interactions by quantifying variation in intraspecific patterns of plant–herbivore interactions within sites.

### **1. Project Purpose**

1.1. To gather standardized data on the distribution of herbivory and herbivores among plant individuals within populations for species and sites across the globe.

1.2. To examine how intraspecific patterns in plant–herbivore interactions vary with plant phylogeny, plant functional traits, environmental conditions, latitude, and other potential factors.

1.3. To generate testable hypotheses for future collaborative studies, observational or experimental.

### **2. HerbVar Structure**

2.1. We are a collaborative and inclusive group of researchers who are working together to advance our understanding of plant–herbivore interactions.

2.2. HerbVar is led by Will Wetzal and Moria Robinson at Michigan State University.

2.2. We have a Planning Group, which will guide the development of all materials related to HerbVar with input from all HerbVar collaborators. This includes the organization of the project, participation guidelines, and authorship guidelines.

2.3. We have multiple Subgroups, which focus on developing specific areas of the greater project. These include the Damage Estimation Subgroup, the Reproductive Damage Subgroup, the Insect Sampling Subgroup, the Rare Plants Subgroup, the Succulent Subgroup, the Tree Subgroup, and more. All HerbVar collaborators willing to invest significant time into the development of HerbVar are welcome on a Subgroup. Additionally, collaborators may propose new Subgroups for covering new areas. Proposals will be considered by the Planning Group.

### 3. Guidelines for Participation

Potential Site PIs should:

- 3.1. Be professional researchers with expertise in plant-herbivore interactions.
- 3.2. Be inclusive, collegial, and collaborative in their interactions with other members of HerbVar.
- 3.3. Have or obtain supplies necessary for conducting surveys at their own sites. As a distributed network, HerbVar does not have funding for individual sites.
- 3.4. Contribute data gathered using the HerbVar protocol or a modified protocol approved by the Planning Group (see HerbVar Protocol document).
- 3.5. Contribute species-level data on each species they survey (species-level traits).
- 3.6 We value participation from all individuals involved in collecting HerbVar data. For example, students who work for a Site PI to help conduct surveys deserve recognition, even if it does not result in co-authorship. We urge collaborators to provide names, positions, and institutional affiliations of individuals who collect data with them (“additional participants” columns in [HerbVar Coordination](#) and [Completed Surveys](#) documents). These additional participants will be recognized via the HerbVar website and via a link in the acknowledgments of HerbVar publications. We encourage Site PIs to keep track of all participants for their own recognition and to allow HerbVar to document its broader reach.

### 4. Authorship Guidelines

Site PIs will be included as co-authors on HerbVar manuscripts if they do the following:

- 4.1. Contribute data from 5 or more surveys per collaborator. Ideally, contributed surveys will include one survey of a focal species (*Taraxacum officinale*, *Plantago lanceolata*, and *Plantago major*), one species from a focal family (Apocynaceae, Asteraceae, Fabaceae, Rubiaceae, Solanaceae), and one new family that is not currently in the database. Additional surveys would be the collaborator’s choice and could include re-sampling the same species through time or across a gradient. While this stratified sampling approach is preferred, all plant populations are of interest and collaborators are welcome to select plants based on criteria that make sense to them (familiarity with taxa, location & feasibility, etc). We will be flexible on the minimum number of surveys, particularly if substantial additional intellectual contributions are made to project development (e.g. creation of documents and protocols, recruitment of collaborators able to work in under-sampled regions or with under-sampled taxa, or other network organization). We will review instances that do not meet the minimum criteria on a case by case basis.

4.2. In addition to contributing data, co-authors must also contribute intellectually to at least one of the following:

- 4.2.1. Development of questions and overall study design.
- 4.2.2. Data analysis.
- 4.2.3. Writing.
- 4.2.4. Editing.

4.3. While initial manuscript(s) will use all collaborator data, future papers may not use the entire dataset (ie. analyses of a specific plant family or papers using only the focal species). For these manuscripts, collaborators will be allowed to “opt-in” based on the data being used in the manuscript. Collaborators whose data are used in the paper can opt-in to help with other tasks. The recommended number of surveys to be included as an opt-in coauthor will vary by paper. Authors whose data are not used can opt-in as long as they contribute to at least two additional tasks (see 4.2).

4.4. In cases where Site PIs contribute data but do not meet the criteria for co-authorship (either by submitting too few surveys or not contributing to additional tasks in 4.3), these individuals will be recognized via the HerbVar consortium list. The HerbVar consortium list will serve to recognize Site PIs as additional authors, and will be associated with each manuscript. The HerbVar consortium list will also be used to give credit when long lists of authors is not feasible (ie. on oral presentation abstracts).

## **6. Manuscripts**

6.1. For a first manuscript, we plan to publish a manuscript describing the overall pattern of intraspecific variation in plant–herbivore interactions (feeding damage and herbivore density). We will address two questions: How variable are plant–herbivore interactions within populations on average? How does the level of variability vary among species and with other biotic and abiotic covariates?

6.2. Future manuscripts can be proposed by any HerbVar participant and will be evaluated by the HerbVar Planning Group.