

Assignments

Rare Species Webpage Guidelines

The Rare Species Webpage assignment will require you to use higher-order skills as well as to engage the course material as you write about specific species. Each student will prepare a Rare Species Webpage during the course of the semester. Students may choose a species from a list provided at the start of the semester. In order to focus on rare Alabama species, please select species listed with a State Rank of S1 or S2 only, meaning that they are either Critically Imperiled or Imperiled in the state of Alabama according to the Alabama State Natural Heritage Program (2017). This assignment will enable you to learn specific biological details regarding a rare Alabama species and will help you learn skills used by conservation biologists to find, summarize, analyze, and communicate useful information on rare species. It also will allow you to put concepts and principles covered in class to potential use for conservation of a particular rare species. This exercise also has a possible use beyond the course: Your webpage may be useful if you are building a portfolio of your university coursework to show to prospective employers (especially if you want to work in conservation).

This webpage assignment is similar to writing a research paper regarding a particular rare species. It should be written so that the scientifically savvy reader can understand it, using citations for the information presented so that your source of all information is clearly evident to the reader. Each webpage will contain photos and a summary of all information available on a particular species, emphasizing Alabama but making use of information from other areas if its range is outside the state. It will include a summary of taxonomic, ecological, and distribution information for that species. You should also be alert for information on related species that might indicate something about the rare species. We often know very little about rare species,

and any information may be helpful. However, be sure you make clear that a particular item of information was actually collected for another species and is being suggested as appropriate for the rare species. In general, you should always tell the reader where the information you present was found, so they can look it up themselves.

A detailed description of the information for each section of the webpage is provided below:

1. **Status of the species:** In this section, provide information on rarity. Give S and G ranks (note that these ranks are NOT state or federal government rankings: they have no official legal significance). When giving a rank, also include a complete definition of the rank (include information on number of occurrences in the definition). This will help us to educate others as to how the ranking systems work. Also give the status of your species on federal and state lists of rare and endangered species: if your species is not listed (maybe because our state does not have an official list for that type of organism?), then be sure to say so! If your species is federally listed, you'll want to include the citation of the listing for your species in the Federal Register (this is very important info for a listed species!). If your species is state-listed in Alabama, explain the conservation meaning of that listing (for example, what does State Protected mean for a species here in Alabama? See information at the front of the Alabama Tracking List for some help with this section).
2. **Taxonomic information:** Give complete classification below the phylum level. You may find your species has multiple classifications or taxonomic levels not included in the template. In these cases, do what is reasonable to fill out this section as best you can.
3. **General description:** Provide an overview of the species, including some information on its genus. Give some general information on it and then details for the species. For

example, if your species is a duck, do not assume that we all know the general features of ducks. Start general and then move to the specifics. Include specific measurements (length, weight, etc.) for features you describe. Be sure to explain unusual technical words so that a generalist can get an idea of what you are talking about. Try to be as comprehensive as possible, including not only the features of adults but juveniles, eggs, nests, seedlings, seeds, etc. Provide specific differences between this species and others similar to it (including other subspecies if present). Also include ways to tell this species from similar members of other genera, families, etc. This is very helpful information, as it can help someone tell if they have seen a rare species (or have a particular species on their land).

Also include the reference for where the scientific description of the species was first published. In addition, provide any information regarding classification changes that have occurred since the species was first named. The latter information can be very helpful for people interested in learning about a species' taxonomic history. The former can give helpful information on the species' key characteristics, range, etc.

4. **Reproduction:** This section contains a description of reproduction in the species. Be as specific and complete as possible. Include timing of reproduction (seasonality, age of sexual maturity, length of mating season, courtship and mating behaviors, etc.), need for special habitat locations for reproductive activities (mating, nesting, etc.), and any other pertinent points. If your organism has a larval stage, describe it and give information on its habitat needs, food, etc. For plants: information on pollination mode, pollinator type, seed dispersal mode, seed germination, and asexual reproduction should be included here.

5. Ecological Information: This section should include what is known about the ecological relationships of the species. Describe its niche in its community. Note tolerance of the species to disturbance (natural or human-caused), its dependence on other species or ecological value to other species, food habits, etc. We should get a good picture of how your species fits into food webs and if it is affected by any diseases, parasites, etc. Provide ecological information for both adult (mature) forms and larval or seedling forms.
6. Habitat information: Information on the habitat of the species should go in this section. This will include elevation range (maximum and minimum), description of the general type of habitat, and any specific information on soils, geologic substrate, moisture requirements, etc. Important associated species (plants, animals, etc.) should be mentioned again here, even if also noted in the section on ecological information. If available, habitat information should be separated into descriptions of nesting/breeding habitat, mating habitat, hibernation habitat, etc.
7. Management information: Based on ecological requirements, what needs to be done to manage existing populations? For example, note importance of maintaining snags as nesting sites, burning periodically to remove competing vegetation, etc. Are there any activities that can protect populations from disturbance or that can foster a species' recovery? This information may not be available for your species, but general management information for other species in the same habitat is suitable and should be mentioned.
8. Distribution: Tell the reader if your species is found outside of the United States. If not, say so. If so, list the countries or general regions (if it is that widespread). Within the

United States, list other states in which the species is found. Provide any available information on commonness or rarity in those states: the Heritage Program state rankings in each of those states would be excellent information, as would information on the status of the species on state lists of threatened or endangered species. Finally, list the counties in Alabama in which the species is known to occur. Counties with historical but extirpated or uncertain status should be noted separately from those in which the species is currently known to occur. Create an Alabama county map showing the counties in which your species occurs. Access the blank map from the course materials, follow directions for downloading the map, and then color in the counties in which your species has been reported.

9. Threats: Here you should note what is actually or potentially threatening survival of the species. If the information is available, this is best done on a population-by-population basis, but general statements of threats are acceptable. Be as specific as you can in discussing these threats, providing enough background information so the reader can understand the nature of these threats. For example, do not just say lack of fire is a problem, describe why it is a problem for your species.
10. Value of species: Does the species have positive or negative effects on humans? You should define all the different kinds of value that we have discussed in class and describe how your species can be an example of each kind.
11. Cited References: You should have a list of cited references that includes all those you have used to identify specific items of information. This is the most important part of the section, and the sources must be alphabetized so a reader can find a particular reference you have used in your writing. You should prioritize scientific papers published in

journals as the references for your information. Books are acceptable as well but should not completely take the place of scientific papers. Websites and popular articles also are acceptable sources, but these should be less than half of your reference citations. Citation styles may vary. So, for consistency, the following citation style for various types of literature **is required** for our course. For a journal article, provide the following information: Author(s), last name first, with first and middle name initials. Year. Title. Journal name. Volume number of journal: pages of article. Note that an article with more than 2 authors, which should be listed as "Whoever 1 et al. (year)" in the text, now has all authors included when listed in the Cited References section of your webpage. In other words, do not use the expression "et al." in your Cited References section.

Here is an example: Goertzen, L.R., J.L. Trusty and R.S. Boyd. 2011. Clonal diversity and structure in the endangered Alabama leather flower *Clematis socialis* Kral (Ranunculaceae). *Journal of the Torrey Botanical Society* 138:41-51.

Books are listed as: Author(s). Year. Title. Publisher and location. Here is an example for an edited book: Boyd, R.S., A.J.M. Baker and J. Proctor. 2004. Ultramafic rocks: their soils, vegetation and fauna. Science Reviews 2000 Ltd, St. Albans, Herts, UK.

A paper published in an edited volume is listed as shown below: Boyd, R.S. 2014. Ecology and evolution of metal-hyperaccumulating plants. In: Rajakaruna, N., R.S. Boyd and T.B. Harris (eds.), pp. 227-241. *Plant ecology and evolution in harsh environments*. Nova Science Publishers, New York.

A thesis or dissertation should be listed as shown below: Moffett, J.M. 2008. *Xyris tennesseensis*: Status survey, habitat restoration/management concerns, and relation to a new Xyrid, *Xyris spathifolia*. Ph.D. dissertation, Auburn University.

To reference a website, give it a title and use the year you accessed it (for example 2018) for the year in the text (ex, Natureserve 2018). Then, in the references section, list this reference as: Natureserve 2018. <http://www.natureserve.org/etc> and then provide the date on which you accessed the information (e.g., Accessed September 17, 2018).

EOA Entry

This portion of the assignment asks you to use the extensive and detailed information you have gathered for your webpage (which is written for a scientific audience) and REPACKAGE that information to make it more accessible to non-experts. So the “appropriate audience” is not the same one as it was for your webpage! In writing for this new audience, you will need to make decisions about what information is important to include, decide how to write it in non-technical language, and reduce your entry to about 1,000 words in total length (not counting the Additional Resources section).

The Encyclopedia of Alabama (EOA; <http://www.encyclopediaofalabama.org/>), with three full-time staff, is housed here at Auburn University at AU Libraries. The EOA is designed as an educational resource for non-experts and the education community. Because it is intended to be accessible to a non-expert audience, articles must be written so that they are intelligible to citizens that lack specialized scientific training and language.

The following text describes the required elements for your entry.

1. Species common name and your name.
2. Text of entry. You will need to decide how to repackage and reorganize the information in your webpage, as the text of your entry should be roughly 1,000 words. An important writing challenge will be to compose this section so it is accessible to readers with no science background. Technical terms should either be excluded or, if you MUST use them, included with a simplified definition understandable by a non-technical audience. Note that in EOA entries common names (e.g., piping plover) are not capitalized unless they contain a proper noun (e.g., Morefield's leather flower). Also, remember that EOA is Alabama-focused. If your organism is found outside the state, make an effort to emphasize Alabama information in your writing.
3. Additional Resources (5 required). Choose five additional resources that you think will be most valuable to someone wanting to learn more about your species. List them alphabetically and by most recent date if more than one by the same author. These resources must not be webpages (unless they give the address of a pdf that can be downloaded). Sources from technical or non-technical journals are preferred (see example EOA entries). Note that the citation style required for EOA differs from that used for your original webpage: follow EOA style as shown in example entries. Also note that EOA does not include in-text citations in its entries.
4. Figures (up to three to obtain maximum points in Content Category: see rubric). In this section of your EOA document, insert each figure into the document (using "Insert Photo" in MS Word). Below each one, write a brief figure legend using the simple style seen in the example entries provided for this assignment. Attempt to find images that are fair use or copyright free, where possible.

5. **Explanation of Information Repackaging.** As you design your EOA entry, you will need to make decisions about what information to include. This last section of the entry asks you to REFLECT on your decisions and explain how you decided what information was important enough to include in the EOA entry. As you think about this section, consider the purpose of the EOA entry, its non-technical audience, and the goal of helping Alabamians learn about conservation of organisms in our state.
6. **Example of Information Repackaging.** In this section, I ask you to illustrate your repackaging process by including a block of original information, the repackaged version, and a narrative describing why you made the choices that you did in the repackaging process.