

Final Synthesis Assignment Description

In this assignment you will synthesize current knowledge about the evolutionary/ecological processes that influence the evolution of traits in an organism or group of organisms. You have three options:

- 1). Pick a single trait (e.g. environment dependent sex determination) and explore how multiple evolutionary/ecological processes influence the evolution of that trait in multiple organisms
- 2). Pick an single evolutionary/ ecological process (i.e. Sexual selection, size at reproduction, mutualism) and explore how that process works in multiple organisms and influences multiple traits
- 3). Pick a single organism (probably needs to be a evolutionary model like Daphnia or Guppies) and explore how multiple traits are influenced by multiple evolutionary and ecological processes

Goals of this assignment:

- Describe how evolutionary processes shape ecology and how ecological process shape evolution
- Practice synthesizing disparate pieces of information into a coherent story and improve writing and researching skills
- Critically evaluate the validity of theoretical and experimental conclusions in the primary literature
- Augment knowledge of organismal diversity across the tree of life
- Learn to place previous work in the larger context of the field of evolutionary ecology and propose new and interesting questions to be addressed
- Improve ability to critically and constructively evaluate the work of others

Requirements:

- There are no limitations on what sort of organisms to use, but I encourage you to be creative about exploring organisms across the tree of life.
- The expectation is that these will be 6 pages long, single spaced. This does not include your conceptual figures or references cited which must be provided and formatted in an expanded citation style such as Harvard (*ie* no numbered citation formats or extremely compressed author lists).
- You must cite at least 15 primary sources. Primary sources outline original experiments or novel modeling studies. Websites, review articles, and books are great to cite and will provide you with the bigger picture, but they do not count towards your 15 sources.
- There must be enough information on this organism for you to write a paper that addresses both eco→evo and evo→eco dynamics in some way. In the least you must put forward experiments that would test eco→evo processes. If you are worried you don't have enough come talk to me.
- Must include at least two figures to support your text. They must provide an overview of the systems and processes you are exploring and summarize empirical data or hypotheses about the system. Place these at the end of your document and cite them in the text.

Products

1) Project proposals (Two)--- one paragraph long topic proposals that lists your proposed, organism(s), traits(s), and ecological/evolutionary processes and the evidence you have found so far to support that proposal.

2) Outline/Annotated Bibliography/ Concept Map (You pick 2): Checkmark. 2.5%

2) First Draft (Text + Conceptual Figures + Bibliography): Checkmark. 2.5%

3) Peer Reviews (1): Graded 4%

4) Second Draft (Text + Conceptual Figures + Bibliography): Checkmark. 2.5%

5) 7-minute in class presentation: (Graded 10%)

6) Final Draft (Text + Conceptual Figures+ Bibliography): Graded 20%

Synthesis Assignment Rubric:

Criteria	
1) Compelling Intro and adequate background on the system (5%)	/5
2) Addressed Eco → Evo processes (10%)	/10
3) Addressed Evo → Eco processes (10%)	/10
4) Outlined Larger Implications and Further Questions (15%)	/15
5) Used appropriate evidence to backup statements (15%)	/15
6) Clarity and conciseness of writing (25%)	/25
7) Conceptual Figures (15%)	/15
Total score:	

Presentation Rubric:

Name:	
A) Organization and Flow	/30
<p>[30pts] Speaker provides an accurate and complete explanation of key concepts and theories, drawing upon relevant literature. Provides at least two empirical data sources with clear explanations. Level of presentation appropriate for audience. Organization easy to follow. Take home messages clear.</p> <p>[20pts] For the most part, explanations of concepts and theories are accurate and complete. Describes at least one empirical source of data. Level of presentation is mostly appropriate for audience. Organization is mostly easy to follow and Take home messages are mostly clear</p> <p>[10pts] Explanations of concepts and/or theories are inaccurate or incomplete. Provides no empirical source data. Level of presentation inappropriate for audience. Organization hard to follow and take home messages not stated.</p>	
B) Visual aids	/30
<p>[30pts] Graphics are designed to reinforce presentation thesis and maximize audience understanding; use of media is varied and appropriate with media not being added simply for the sake of use. Visual aids and fonts were large enough to be seen by all. Details are minimized so that main points stand out.</p> <p>[20pts] While graphics relate and aid presentation thesis, these media are not as varied and not as well connected to presentation thesis. Font size is appropriate for reading. Some material is not supported by visual aids.</p> <p>[10pts] Occasional use of graphics that rarely support presentation thesis; visual aids were not clear. Choppy, time wasting use of multimedia; lacks smooth transition from one medium to another. Font is too small to be easily seen. Too much information is included. Unimportant material is highlighted.</p>	
C) Presentation style	/15
<p>[15pts] Extremely poised, clear articulation, loud enough, good eye contact, accurate precise terminology</p> <p>[10pts] Reasonably comfortable, good articulation and mostly loud enough, faces audience mostly, decent eye contact, mostly correct terminology</p> <p>[5pts] Lack of preparation, lack of articulation, speaks with back to audience, hard to understand, avoids eye contact, incorrect terminology</p>	
D) Audience Interaction/ Questions and Answer Period	/15
<p>[15pts] Encourages audience interaction and demonstrates extensive knowledge of the topic</p> <p>[12pts] Encourages audience interaction and knowledgeable about the topic</p> <p>[8pts] Reluctantly interacts with audience and demonstrates rudimentary knowledge of topic</p> <p>[4pts] Discourages audience interaction and demonstrates incomplete knowledge of the topic</p>	
E) Length of presentation	/10
<p>[10pts] Within 1 minute of the allotted time (7 min)</p> <p>[5pts] Within 2 minutes of the allotted time (7 min)</p> <p>[0pts] Way too short or long!</p>	
Total score:	