## Teaching Notes By *Valerie Greene*

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**Course Information**

Department: Environmental Science

Level: **Lower Undergraduate** (select one)

Course type: **Lab**

Students: **Non-majors**

Number of Students: 32

**Module Information**

Original Module Name: "The Effect of Climate Change on Butterfly Phenology"

Link to Original: <https://tiee.esa.org/vol/v13/issues/data_sets/ellwood/abstract.html>

Modified Module Name: "The Effect of Climate Change on Butterfly Phenology" Link: Greene, V. (2019). [The Effect of Climate Change on Butterfly Phenology](http://dx.doi.org/10.25334/Q4JF2J" \t "_blank). [ESA Data Explorers FMN (2019)](https://qubeshub.org/groups/dataexplorers_2019), QUBES Educational Resources. [doi:10.25334/Q4JF2J](http://dx.doi.org/10.25334/Q4JF2J" \t "_blank)

Files associated: Pre-work student worksheet and Background info Lecture Powerpoint

Modification Learning Goals:

* **Graphing and Intro to peer reviewed literature, use of collections as a data source, what is phenology and how does it relate to climate change**

**Teaching Notes**

* What did you change and why? I added background on how to read scientific literature and made this module the 2nd part of this. Non-major GE students really needed this in my course in order to feel confident working with the material in the Module. In addition, I think it also help my ESL students feel not so lost.
* How did the activity go?
  + What went well and why? They really liked making the posters and then presenting to each other.
* What was the prep like?
  + How much time went into prep? Not too much. Mostly it was just to curate the peer review papers and organize the powerpoint
* Would you do this activity again? yes
  + What would you change in the future? I would incorporate more butterfly ecology