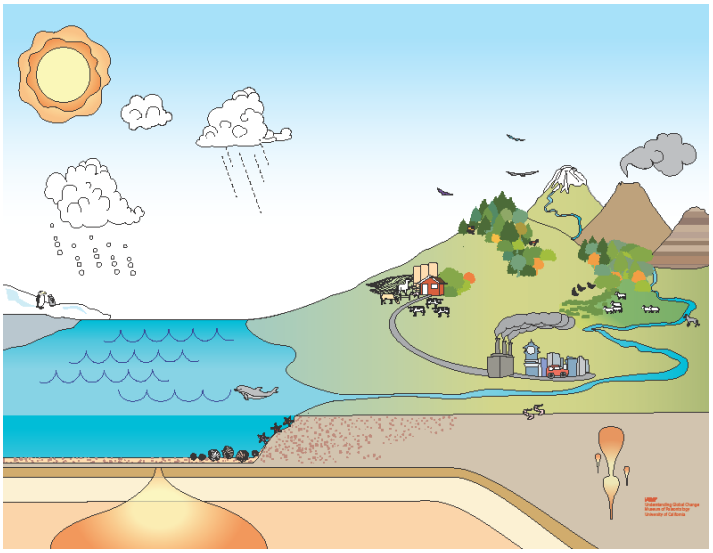
BEFORE 1: Ecosystem Connections

Before your visit to increase student awareness of the science process and understanding of ecological systems, use this activity developed by Berkeley and HHMI.
https://ugc.berkeley.edu/teaching-resources/

VA Standards Addressed: Science (2018) LS.6, LS.8, LS.11

Lesson Preparation:



1. Download the video. https://www.hhmi.org/biointeractive/trophic-cascades-salt-marsh-ecosystems
2. Print (the larger the better) and laminate the "Earth Scene" one for each group.
3. Print, cut, and laminate (optional) the "IconsSets" (best if done in color). NOTE: there are two versions of the cards so the lesson can scaffold to a variety of grades, cognitive levels, English language learners, etc.
4. For an example of how students may lay out the system using the storyboard, refer to slide 9 of Young Ecologist HHMI StoryboardSlides pdf.

Instructional Strategy:

1. Open Young Ecologist HHMI StoryboardSlides pdf and project on your smartboard or other presentation device.
2. On slide 1, watch video with students. https://www.hhmi.org/biointeractive/trophic-cascades-salt-marsh-ecosystems Ask, "What science concepts and research processes are discussed in the video?"
3. Group students in teams of not more than three (ideally pairs).
4. Provide the following directions to your students:
    a. Slides 3, 4, 5- Next, working in pairs, identify 3 or 4 measurable changes (the blue cards) that are most relevant to Brian Silliman's research from your stack (Limit the number of cards presented to 8-10 of the total blue cards). Place the icon cards on the storyboard (slide 4) in an appropriate place, draw arrows to represent relationships, cause & effect, input or outputs. Then label the arrows to explain why you connected them (slide 5).
    b. Slides 7- Identify 3 or 4 Earth systems (yellow cards) most relevant to the research from your stack. Place them on storyboard and draw and label arrows as before

c. Slide 8- Identify 3 or 4 causes of change (red icon cards) from your stack and then place, draw and label as before.
d. Slide 9 shows an example of a completed storyboard.

5. Instruct students to share their storyboards with the other groups and explain their reasoning for the connections they made. How is this a system? What are some differences between?
6. Conclusion- Ask students: How are your storyboards systems? While on our field investigation, make note of system connections you observe and consider how you are engaging in the process of science.