Lesson- Marine Debris in Sea Birds, A Virtual Bolus Dissection

Grade: 6 - 12
Time: 45 - 60 minutes

NYSSLS Connection
MS. Human Impacts
HS. Human Sustainability

Lesson Background
The Laysan Albatross is a seabird that spends its life soaring over the pacific ocean feeding on squid and flying fish. The albatross returns to land once a year for one purpose, to roost and to raise one single chick. Once the chick regurgitates a bolus (similar to a hairball or owl pellet) it fleges the nest, only to return to have a chick of its own in the future.

Required Materials
A computer with internet access, chart paper to create a data table and something to write with

5E Lesson Plan

Engage:

Provide students with the lesson background information noted at the top of this document and then ask them to predict what they would find within an albatross bolus if they dissected one.

Explore:

Before students can delve into a virtual bolus dissection, they need to learn about the organism that produces the bolus in the first place. Ask students to read the National Geographic article linked below. This article provides key background information on the Laysan Albatross and will provide necessary context for the virtual bolus dissection.

National Geographic Article:
https://www.nationalgeographic.org/activity/laysan-albatross-virtual-bolus-dissection/#the-laysan-albatross

Explain:

Now it's time for students to conduct virtual bolus dissections. Below, you will find a link to images of dissected boluses and a link to an identification guide of materials commonly found in albatross boluses. All of these wonderful resources are provided from Winged Ambassadors (http://www.downloadwingedambassadors.org/) and are free of charge to the public.

Virtual Albatross Bolus Images:
http://www.oikonos.org/ftp/outgoing/wingedambassadors/lesson_4/L4_Handout_Bolus_PRINT_version.pdf

Bolus Material Identification Guide:
http://www.oikonos.org/ftp/outgoing/wingedambassadors/lesson_4/L4_SupplementalHandout_WhatDoYouRecognize%20with%20interactive%20links.pdf

Once getting started, ask students to select a bird (1-4) and use the bolus images associated with that bird. For example, if I'm a student and I choose bird 1, I will look at bolus images on pages 2 through 5 to conduct my virtual bolus dissection. Students can use the ID guide linked above to identify the objects found in their bolus.

Students should create a data sheet that tracks the type of material found in their bolus (natural and unnatural), the amount of each material and the size of that material (length).

Elaborate

Once students complete their virtual bolus dissection, they should watch the CNN video linked below, "Midway, a Plastic Island". Some of the images in the video can be graphic, so you should watch before showing students. This video shows Midway Island, an albatross nesting colony and the effects marine debris are having on those seabirds.

CNN Video "Midway, a plastic island": https://www.youtube.com/watch?v=IsJqMmuFWO4

Evaluate

Students oral responses and data tables can be assessed for understanding.

Closure

After the video is complete, there should be a class discussion about the effect plastic pollution is having on sealife. The discussion should include solutions to the problem.