iCoast—Did the Coast Change?

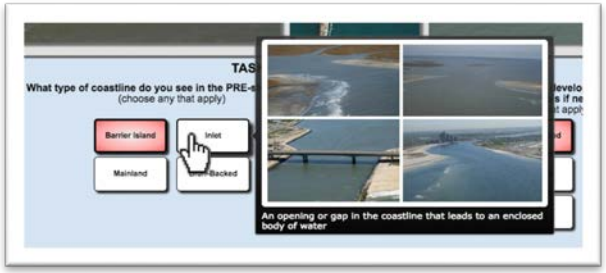
Appendix to Supporting Statement A

Tool Tips in iCoast

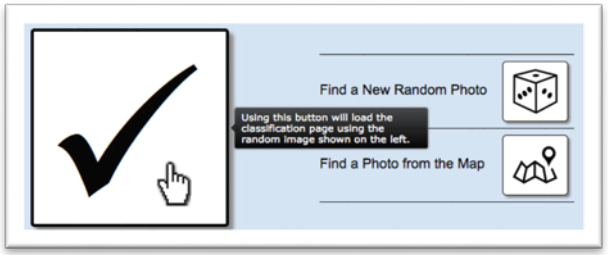
Throughout the iCoast website users can hover their cursor over images, buttons or drop down menus to view explanations and definitions of the iCoast features. Known as “Tool Tips”, these explanations guide the user through iCoast or provide easily viewed definitions and examples of features found along the coast.

Menu

Inlet



Inlet Select image



Progress Bar

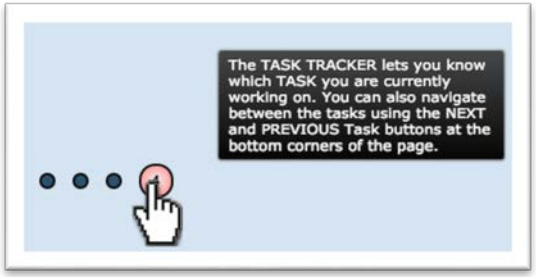


Image Zoom

Additionally, if the user hovers over an image during the tagging tasks, a zoom tool appears allowing the user to zoom into or out of the image using their scroll wheel to inspect details not visible in the presented pair.

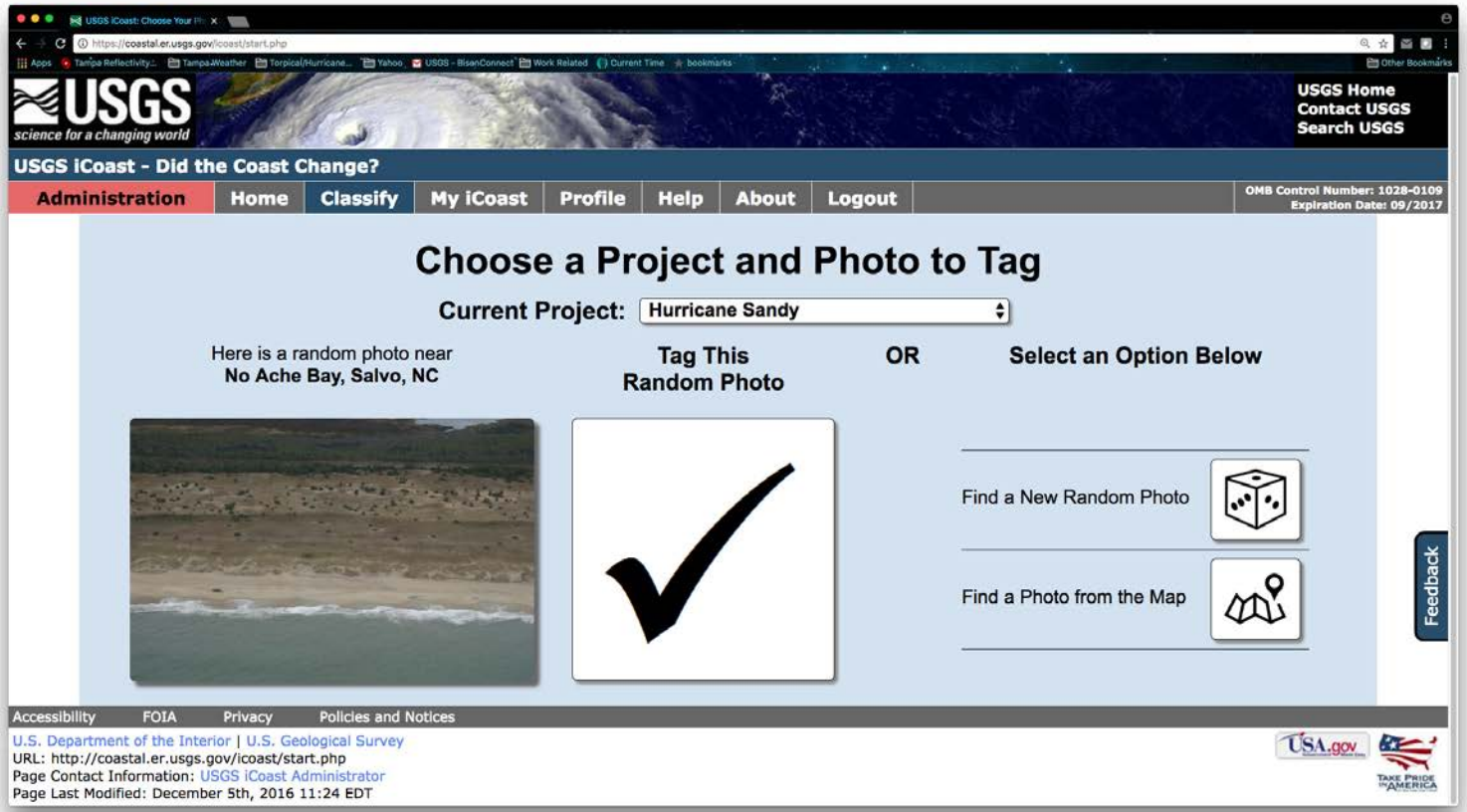


Figure 1. Choose a Project and Photo. Users are presented with an image to classify. By clicking on the "check" symbol users select the image presented. They may alternately select a new random image by clicking on the "die" symbol, or click on the "map" symbol, then navigate to an area of interest and select an image there.

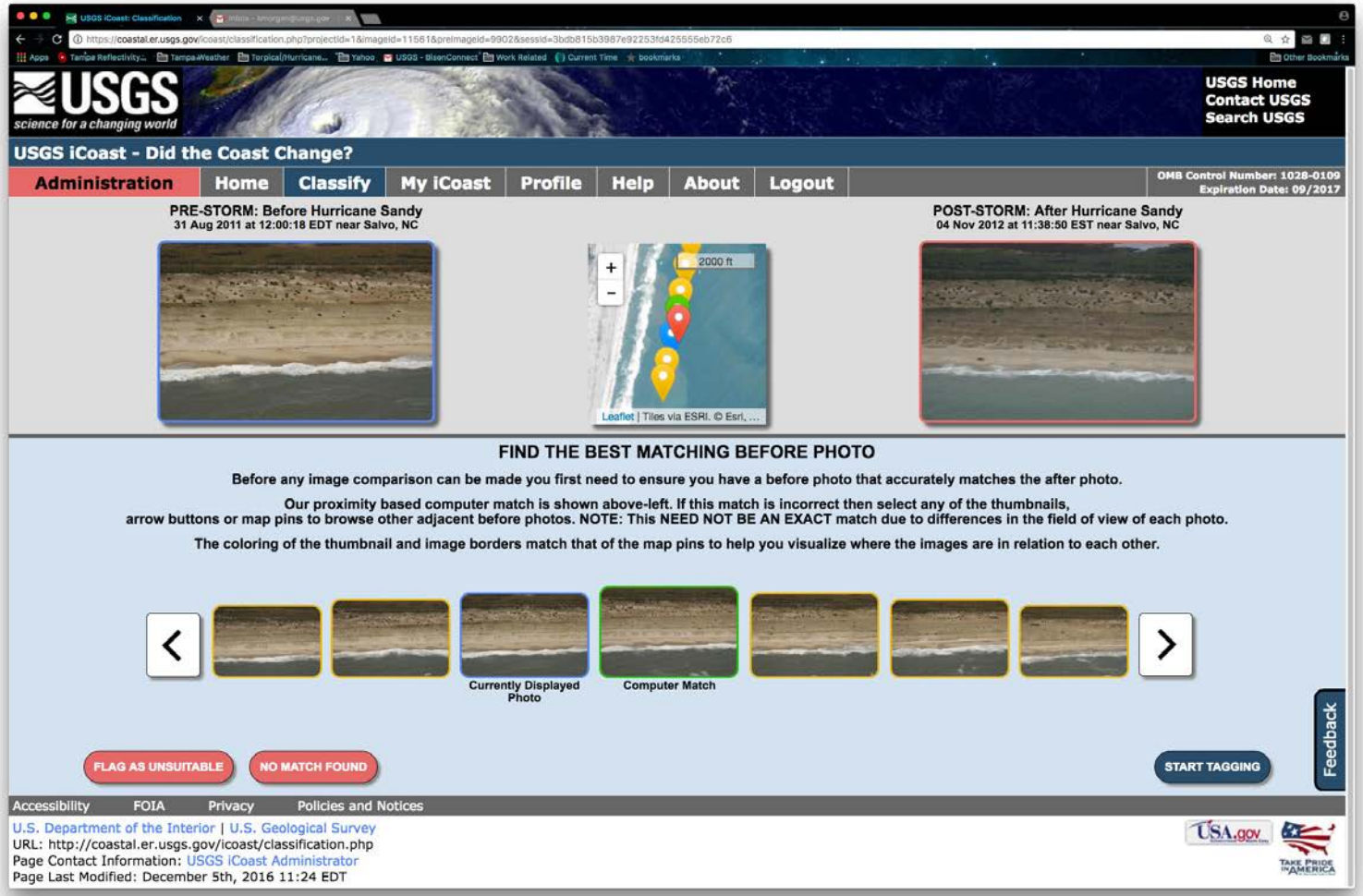


Figure 2. Match Coastal Photos. Once the image is selected, the user is presented with a computer-generated match of a pre-storm image and three alternate pre-storm images to either side of the selected match. The user may accept the computer-generated match or select from the alternate images if a better match is available. The user may also mark the image as “No Match Found” or “Flag as Unsuitable” if no match is available. Selecting either of these two red buttons alerts the iCoast administrators. The image will either be removed from iCoast, or an experienced classifier will complete the tagging.

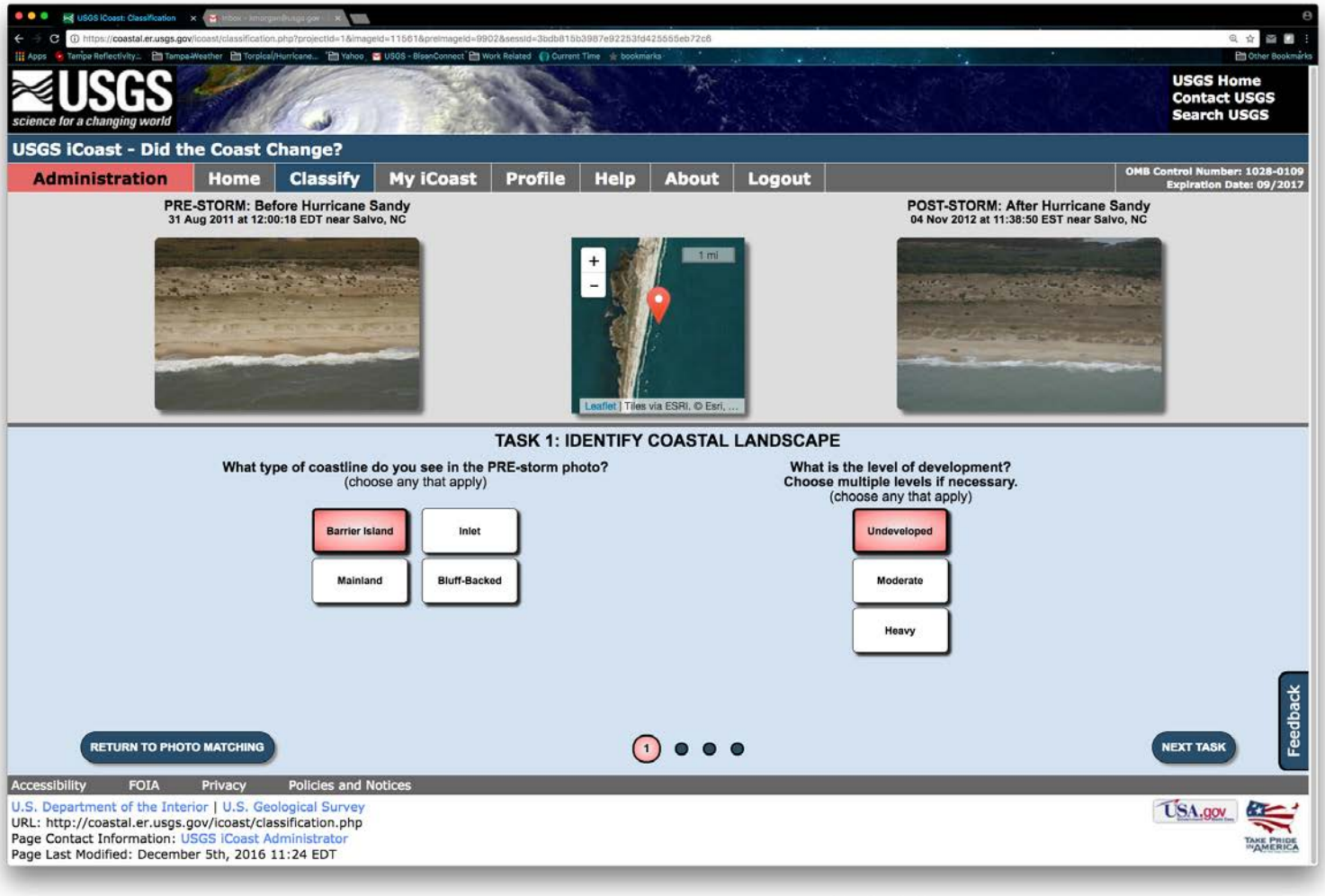


Figure 3. Task 1: Identify Coastal Landscape. Users can select a type of coastline and the level of development.

Tool Tips for Task 1: Identify Coastal Landscape

What type of coastline do you see in the PRE-storm photo?

(choose any that apply)

- **Barrier Island**: Elongated narrow islands with sandy beaches that run parallel to the mainland separated by a body of water like a marsh, bay or lagoon (use map above to look for water behind the coast).
- **Mainland:** Sandy beaches connected to the mainland and often backed by dunes, marshes, or human infrastructure.
- **Bluff-Backed**: A beach backed by steep cliffs or bluffs often made up of loose sediment.
- **Inlet:** An opening or gap in the coastline that leads to an enclosed body of water.

What is the level of development?
Choose multiple levels if necessary.

(choose any that apply)

- **Undeveloped**: Natural coastal ecosystems like dunes, coastal vegetation, and marshes are more prominent with little or no human infrastructure visible.
- **Moderate**: Moderately developed coast with sparse concentration of houses, residential complexes, and/or hotels; some commercial development and tourism infrastructure may be visible.
- **Heavy**: Heavily developed area with a dense concentration of houses, residential complexes, and/or hotels; extensive commercial development; substantial tourism infrastructure.

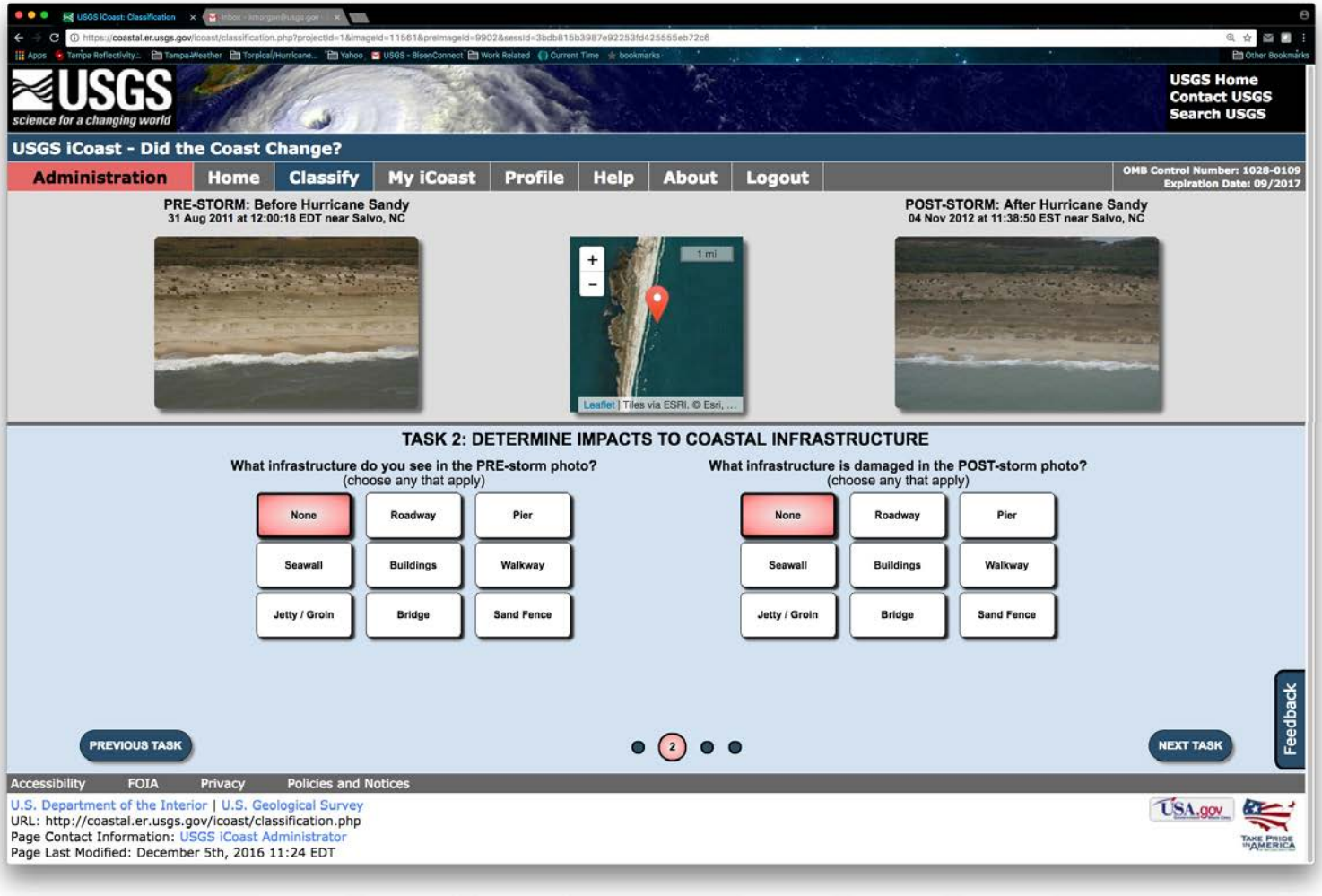


Figure 4. Task 2: Determine Impacts to Coastal Infrastructure. Users first select the infrastructure seen in the pre-storm image. Users then select infrastructure they see damaged in the post-storm image.

Tool Tips for Task 2: Determine Impacts to Coastal Infrastructure

What infrastructure do you see in the PRE-storm photo?
(choose any that apply)

- **None**
- **Seawall:** An artificial wall or protective structure built parallel to the shoreline to prevent the sea from eroding the coast
- **Jetty / Groin:** Coastal engineering structures built perpendicular to the coast to interrupt water flow or trap migrating sand
- **Roadway:** Paved roads and parking lots
- **Buildings:** Houses, residential complexes, tourism and commercial infrastructure
- **Bridge**: A transportation infrastructure built to create a passageway over a body of water
- **Pier:** A raised platform supported by pilings or stilts built perpendicular to the coast
- **Walkway:** A boardwalk built parallel to the beach, or a walkover with a raised path for walking over dunes to access the beach
- **Sand Fence:** A fence used to force windblown sand to accumulate in a certain area and stabilize dunes

What infrastructure is damaged in the POST-storm photo?
(choose any that apply)

- **None**
- **Seawall:** The wall is damaged or exposed
- **Jetty / Groin:** Coastal engineering structures are more exposed or eroding
- **Roadway:** Inaccessible roads or parking lots covered by sand or damaged by storm surge waters
- **Buildings:** Damaged or missing houses, residential complexes, tourism and commercial infrastructures; they may be buried by sand or pilings might be exposed
- **Bridge:** Damaged or impassable bridge that may affect transportation
- **Pier:** Damaged or missing platform exposing the pilings or stilts of the pier
- **Walkway:** Damaged, missing, or shorter boardwalks or walkovers covered by sand
- **Sand Fence:** Missing or destroyed fence where posts from fence are more exposed

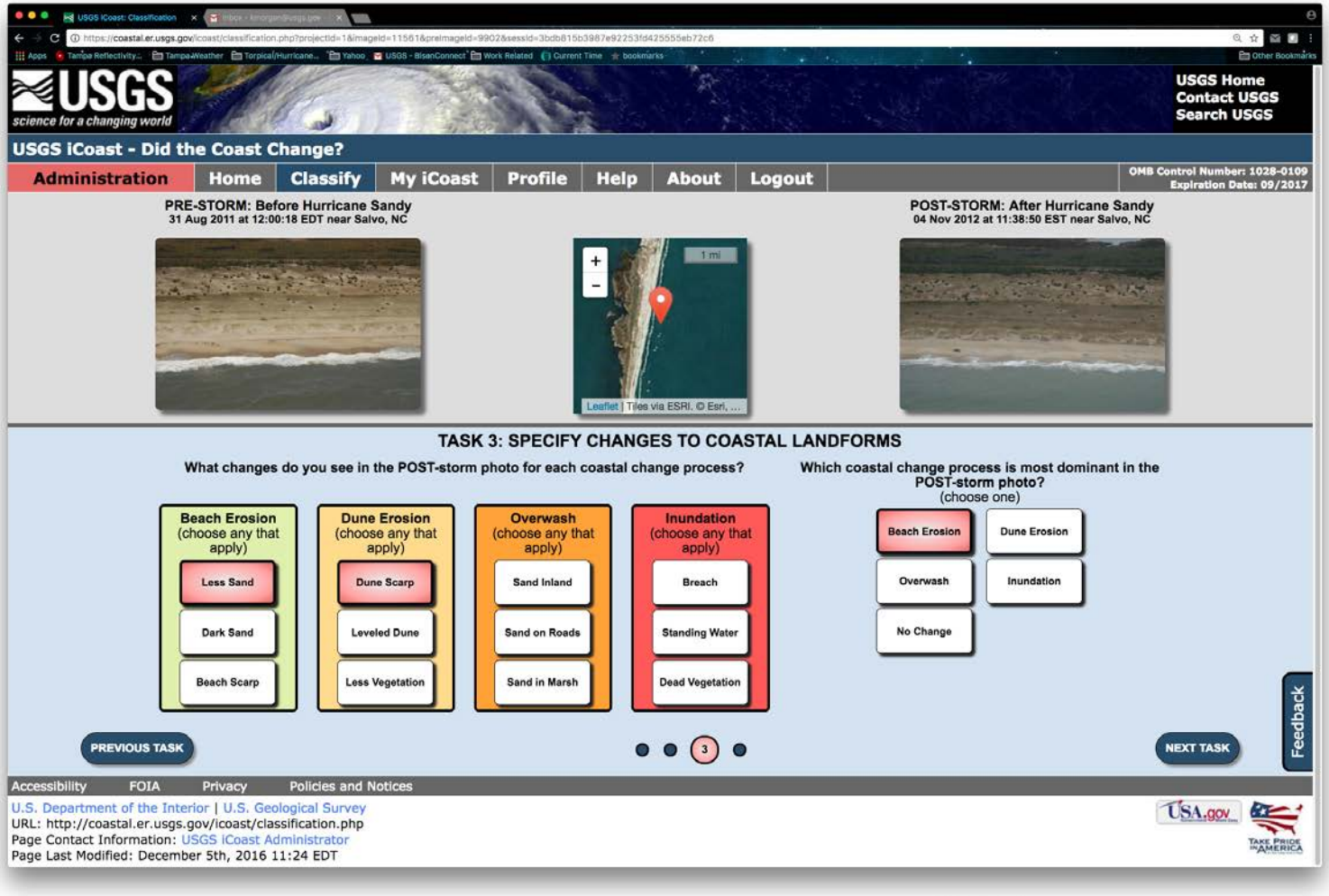


Figure 5: Task 3: Specify Changes to Coastal Landforms. For each coastal change regime category (right side), the tags are grouped by color to aid the user in understanding the relationship between the tags and the coastal change regime categories. The user is then asked to identify the most dominant coastal change that explains the changes observed in the post-storm photo.

Tool Tips for Task 3: Specify Changes to Coastal Landforms

What storm-driven changes do you see for each coastal change process?
(choose any that apply)

- **Beach Erosion**
  - **Less Sand:** Less sand creating a narrower beach
  - **Dark Sand:** Darker sand made up of coarser, heavier, or wet sediment on the beach
  - **Beach Scarp**: A steep perpendicular slope of sand on beach

- **Dune Erosion**
  - **Dune Scarp**: A steep perpendicular slope of sand along the base of dunes
  - **Leveled Dune**: Flattened dunes or mounds of sand wiped out
  - **Less Vegetation**: Vegetation on dunes is missing or buried, but vegetation change may be seasonal

- **Overwash**
  - **Sand Deposit Inland**: Sand deposited onshore landward overtopping dunes or in low lying areas
  - **Sand on Roads**: Sand covering roadways and parking lots
  - **Sand in Marsh**: Sand deposited in marsh or back bay behind barrier island

- **Inundation**
  - **Breach:** A new channel of water creating an inlet or gap in the barrier island
  - **Standing Water**: A pool of water inland in areas that are typically dry or new pools of water in marshes
  - **Dead Vegetation:** Brown, damaged, or stripped vegetation from high winds or storm surge, but vegetation change may be seasonal

Tool Tips for Task 3: Specify Changes to Coastal Landforms

(Continued)

Which coastal change process is most dominant in the POST-storm photo?

(choose one)

- **No Change:** No significant change is visible. PRE-storm photo may show more storm-driven changes than POST-storm photo.
- **Beach Erosion**: Beach erosion is a process that occurs when there are scarps along the beach, dark or heavier sediment on the beach, or less sand creating narrower beaches.
- **Dune Erosion**: Dune erosion is a process that occurs when waves and storm surge flow higher than the base of dunes along the coast erode resulting in smaller dunes, scarps along the base of the dune, or less vegetation.
- **Overwash**: Overwash is a process that occurs when waves and storm surge overtop or go around dunes or low lying areas depositing sand inland from beaches onto roads or in marshes.
- **Inundation**: Inundation is a process that occurs when storm water floods the beach and areas that are normally dry causing breaches, standing water inland, and brown vegetation

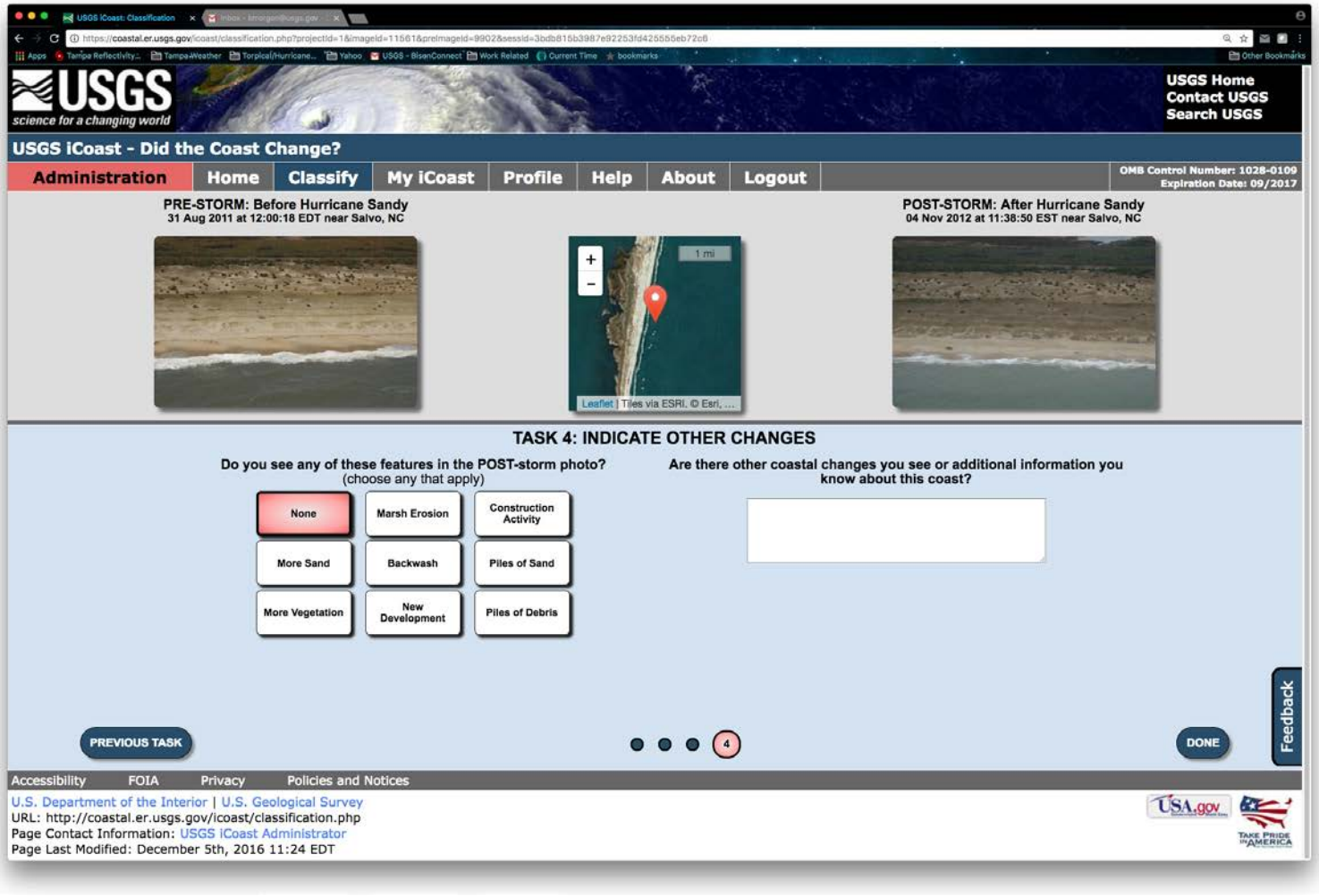


Figure 6. Task 4: Indicate Other Changes. Users can select features that may have been seen in the photographs, but have not had the opportunity to tag during previous tasks. Additionally, there is space to enter comment.

Tool Tips for Task 4: Indicate Other Changes

Do you see any of these features in the POST-storm photo?

(choose any that apply)

- **None**
- **More Sand**: More sand, wider beaches, or higher dunes in POST-storm photo. Sand eroded during the storm may also return and attach itself along the beach after storms creating tidal pools on the beach.
- **More Vegetation**: Vegetation appears to be more dense in the POST-storm photo
- **Marsh Erosion**: Typically occurs on wetland coastlines exposed to an open body of water causing erosion of wetland soil and standing water in marsh
- **Backwash**: Storm surge water receded from backside of narrow barrier islands depositing sand and water seaward or widening channels in marshes
- **More Development**: New infrastructure in POST-storm photo that is not in PRE-storm photo
- **Construction Activity**: Tractors or bulldozers on the beach and near roads moving sand and debris
- **Piles of Sand**: Piles of sand removed from roadways or for replenishing beaches
- **Piles of Debris**: Cleanup efforts are visible through organized piles of rubble

Are there other coastal changes you see or additional information you know about this coast? [Comment Box]