Name _____ Date _____

Exploring Ecosystems: Human-Environment Interactions in the Barataria Preserve Answer Key

Part 1. Explore the Barataria Preserve
Using FieldScope (http://lafitte.fieldscope.org), follow the steps below. Answer each question as you explore how humans and nature are connected in and around the Barataria Preserve.

1. Turn on the **Housing Density** layer.

   a. Where are the most densely populated areas? Along the Mississippi River; more so on the east bank between the river and Lake Pontchartrain

   b. Where has density changed the most between 1970 and 2000? *(Hint: See this change by dragging the timeline dividing bar back and forth across the screen.)* To the west of the city along the river, to the south of the city, and north of Lake Pontchartrain

   c. What are some possible reasons for these changes? Answers will vary; possible answers include water barriers such as the lake and ocean; people like living near the river and lake.

2. Turn off **Housing Density** and turn on the **Levees** layer.

   a. What are the two different kinds of levees? *(Hint: Use the **Query Tool.**)* federal and local

   b. Describe any trends in where levees are located. They were built around the river and to the south of Lake Pontchartrain.

   c. Are there any levees near where you live? If so, describe them. Answers will vary.

3. Turn off **Levees** and turn on all **Resource Extraction** layers.

   a. Are there any resource extraction sites in the Barataria Preserve? Yes, an oil and gas field and an oil and gas lease

© 2013 National Geographic Society

Exploring Ecosystems: Human-Environment Interactions in the Barataria Preserve Answer Key, continued

b. In what ways do you think these human-related features—density, levees, and extraction—influence the Barataria Preserve? Answers will vary.

4. Turn off all previous layers, except **Boundaries and Places,** and turn on the **Land Cover** layer. Use the **Query Tool** to click on the different colors and find the cover type.

   a. What are the most common land cover types you see in the New Orleans area? development, woody wetlands, emergent herbaceous wetlands, cultivated crops, open water

5. Zoom into the Barataria Preserve. Use the **Query Tool** to identify all of the land cover types within this area.

   a. What are the land cover types inside the Barataria Preserve? woody wetlands, emergent herbaceous wetlands, open water, and a small area of low intensity development

6. Turn off the **Land Cover** layer, and turn on **Elevation.**

   a. Where are the highest areas in the Barataria Preserve? Explain. Around the river/canal near the southeast corner; because the river deposits sediments over time, which builds up the land.

7. Finally, turn off **Elevation** and turn on **Invasive Species.**

   a. Name the invasive species found within and close to the Barataria Preserve. *(Hint: Use the **Query Tool.**)* Answers will vary.

   b. Zoom out to see the New Orleans region. Do you see any pattern in where invasive species are located across the broader landscape? Explain. Invasive species have been found near roads and waterways.

© 2013 National Geographic Society

Exploring Ecosystems: Human-Environment Interactions in the Barataria Preserve Answer Key, continued

c. How might you explain this pattern? Answers will vary; waterways have roads along them, data is collected along the roads, invasives are transported by roads.

d. How might these nature-related layers—land cover, elevation, and invasive species—affect the Barataria Preserve? Answers will vary. Possible explanations: Elevation affects the amount of water in different areas, which affects the land cover. Invasive species can reproduce quickly and affect plants, animals, and habitats within the preserve.

Part 2. Analyze Ecosystem Relationships

Now that you have an idea of the different kinds of features that influence the Barataria Preserve and its landscape, you can analyze a question of your own. Using at least two different layers in FieldScope (e.g., land cover and housing density), come up with a question that interests you. Questions can be simple or complex. Examples include:

- What types of invasive species are found in densely populated areas?
- In what direction is the population growing?
- What land cover is changing the most as a result of population growth?
- How many miles of levees are there in each bracket of housing density?

Answer your question by analyzing the relationship between the layers you choose, using FieldScope tools such as **Query** or **Measure.** Use the Problem-and-Solution diagram to write your question (the problem), the different layers you are using, and how analyzing those layers produces an answer (the solution).

Finally, create a map that shows your layers of interest and save it by clicking on the **Save** button at the top right corner. Print this map when you are done.

© 2013 National Geographic Society