Lesson Plan

Note: This lesson plan may be used with any *Natural Inquirer* Time Warp Monograph Series monograph.

Time Needed:

2 class periods

Materials (for each student or group of students):

- *Natural Inquirer* Time Warp Monograph Series monograph
- Time Warp Graphic Organizer
- Writing utensil
- Blank paper

This lesson plan encourages students to think about a particular research topic across time, including past, present, and future.

Methods:

Day One

Provide each student with a copy of the chosen Time Warp Monograph Series monograph. Each monograph in this series includes the same "Welcome to the *Natural Inquirer* Monograph–Time Warp Series" section. Use the Contents page at the front of the monograph to locate the "Welcome to the Natural Inquirer Monograph–Time Warp" section, and direct students read the section fully.

Take this opportunity to reiterate that scientific research is never completely finished. Instead, scientists and engineers conduct research projects to add to or correct previous knowledge or research. Projects lead to new questions that can be tested scientifically or new answers to a problem.

Explain to students that each Time Warp Monograph Series monograph has two articles about a similar topic. The two articles differ in that the research was conducted in different periods in time in USDA Forest Service history. One article is from recent history (2010-2017) and one article was published between 1940s-1980s.

Provide each student with the Time Warp Graphic Organizer. Direct students to read the recent

scientific or engineering article, which is the feature article in each monograph. Have students fill out the center column on the Time Warp Graphic Organizer titled "Present." Once completed, have students put their name on their graphic organizer and hand it in to you.

Day Two

Provide each student with their Time Warp Graphic Organizer. Direct students to read the historical research, titled "Time Warp" in the monograph. While reading, students should simultaneously complete the first column on the Time Warp Graphic Organizer titled "Past."

Hold a discussion with students discussing how the two articles in the monograph were similar or different. Use the Time Warp Graphic Organizer to elicit talking points from the students. Some potential questions might include:

1. Did the contemporary or recent research article build off of information from the historical research article? If yes, how?
2. Look at the questions asked in the two articles, have they changed over the years? If yes, how?
3. How have scientists and engineers changed their methods over the years? Why have methods changed? Why have methods stayed the same?

Next, have students complete the "Future" column on the Time Warp Graphic Organizer. Students should complete this section by using the information they gathered while reading the monograph. For the "Question" section, students should write a question related to this topic that they have after reading the two articles. For the "Methods Used" section, students should think of how they might test that question.

Students may need additional space on a blank piece of paper to answer each questions and complete the graphic organizer.

Time Warp Graphic Organizer

	Past	Present	Future
Question(s) *What is the research questions?*			
Methods *What are the methods used to answer the research questions?*			
Results *What were the results of the research?*			