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**Tackling Wicked Problems when Teaching Applied Economics: An Application to the Bears Ears  
National Monument**

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# Tackling Wicked Problems when Teaching Applied Economics:

## An Application to the Bears Ears National Monument

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### ABSTRACT

The term “wicked problems” is not well recognized in the field of applied economics. Normally used to describe situations or scenarios that are difficult to solve using standard analytical modeling methods, these problems are highly complex and span multiple disciplines. Therefore, traditional methods for teaching economists how to problem-solve may not suffice. To better prepare students, we propose the following exercise as a method to teach and train students on how to deal with, account for, and solve wicked policy problems in applied economics. We focus on a single, but highly relevant and timely wicked-type policy problem, namely, changing the designation and/or size of the Bears Ears National Monument in Utah. To address the designation debate we “hire” students in an advanced applied economics course to evaluate the policy using different economics criteria discussed throughout the semester. Based on their results, students are asked to offer policy recommendations and explain in detail the limitations of their results. We assess student learning outcomes using a pre- and post-survey, a take-home individual assignment, and in class group presentation.

### INTRODUCTION

- Wicked problems emerge almost daily in the field of applied economics.
- These types of problems are not only difficult to define but also inherently complex and tough to solve.
- Examples include global climate change, poverty, rising sea levels, sustainable development, and GMO foods.
- Wicked problems involve policy decisions that affect multiple stakeholders in a broad, extensive context.
- Thus, finding solutions to such problems often requires collective action from opposing parties who often hold different values and beliefs.
- Typically the solution to a wicked problem depends on how the problem is framed and presented.
- To be effective problem-solvers, it is imperative that future practitioners of applied economics receive formal training on how to deal with, account for, and solve wicked policy problems.
- However, the skills necessary to properly examine these types of problems are currently neither taught in applied economics programs nor do they appear to be rewarded in research institutions (Bate 2008).

### OBJECTIVE

- The objective of this project is examine whether or not the case study method is an effective tool that can be used to teach and train applied economics graduate students how to assess and develop solutions to wicked type policy problems.

### THE WICKED PROBLEM

- The Bears Ears National Monument is located in San Juan County, Utah and was established on December 28<sup>th</sup>, 2016 by President Barack Obama.
- On December 4<sup>th</sup>, 2017 the Monument was reduced in size by 85% to include 201,876 acres, just enough land to cover the historic Bears Ears rock formations for which the monument was originally named.

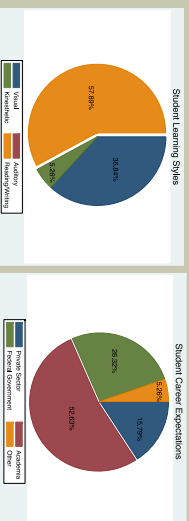
### TARGET AUDIENCE

- This exercise is ideal for any graduate-level applied economics course focused on proper methods for policy evaluation and economic decision making. It should be of particular interest to those studying natural resource management issues.

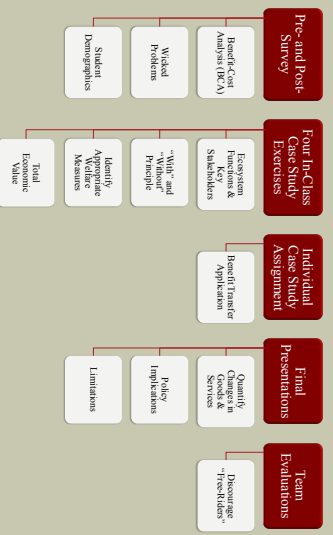
### LEARNING OUTCOMES

- Upon completion of this exercise, students should be able to:
  - 1) Understand the complexity presented by wicked problems.
  - 2) Understand how the application of economic principles improves decision making with respect to wicked policy problems.
  - 3) Understand the limitations of traditional economic policy evaluation criteria to solve wicked problems.
  - 4) Have a better grasp on the importance of undertaking applications that involve the integration of quantitative and qualitative techniques and skills.

### STUDENT CHARACTERISTICS



### METHODS



### POLICY SCENARIOS

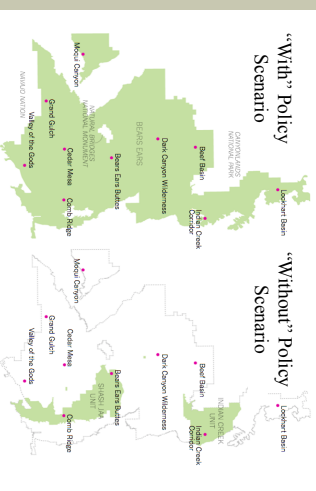
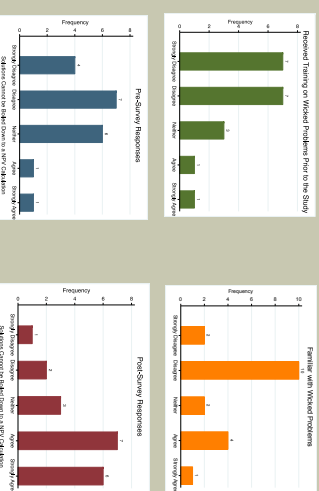


Figure 2. Comparing States of the World New York Times (2017)

### RESULTS & DISCUSSION



### CONCLUSIONS

- We find at the start of the study, approximately 73% of students had not yet received formal training on wicked problems, but felt training on how to deal with, account for, and solve them was imperative.
- Additionally, 63% indicated they were unfamiliar with wicked policy problems in general.
- No statistically significant difference in the responses of master’s students vs. doctoral students.
- Student characteristics (e.g., age, years of schooling, time spent studying) do drive perceptions of wicked policy problems.
- Final project grades ranged from 83% - 100%

### REFERENCES

1. Bate, S. S. (2008). Wicked problems and applied economics. *American Journal of Agricultural Economics*, 90(5), 1176–1191.

2. Popovich, N. (2017, Dec. 8). New York Times

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Figure 1. Bears Ears National Monument, Utah  
Credit: John C. Bergstrom, May 16, 2018