

## **Public Information**

### **Project Title**

Modeling human conflict and cooperation as a consequence of global climate change

### **Project Summary**

This project developed a novel model based on game theory to advance the study of coupled dynamics between humans and their environment within the field of political ecology. The question this project asks is *What type of adaptive institutional characteristics are more likely to lead to conflict or cooperation in an environment vulnerable to environmental degradation?* Political ecologists have found that either conflict or cooperation can emerge in response to environmental degradation.. How a society responds to environmental degradation is thought to depend on the structure of its political system and the nature of the local ecology, however there is currently no accepted mathematical theory that distinguishes between the various qualitative hypotheses. The results of this collaborative effort will demonstrate the importance and relevance of understanding conflict and cooperation through the framework of political ecology and the interdependencies among political institutions, geography, and ecosystems. Overall the project models when societies transition from cooperative to non-cooperative (or vice versa) behavior in response to environmental change. The results of these analyses will be submitted for publication in a peer-reviewed journal.

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