

## **Student Handout – Go Back Land: Restoring Abandoned Farmland and Sustaining Farm Towns**

### Introduction: The Illusion of Water

*Vacationers bound for Great Basin National Park generally drive westward from I-15 down Highway 50. Two miles past the farm town of Hinkley, Lake Sevier comes into view. Most years the lakebed is dry, but the reflection of white sand shimmering in the desert sun creates a mirage – the illusion of water. Across the highway, a dirt road meanders north. Beside the road, a 1950s-era farmhouse stands empty, its windows boarded up. A broken child's bicycle lies in the driveway. The flag on the mailbox is still up. Weeds choke the field behind the house.*

*“We left three years ago,” said Judd Christensen. “Used to be we could get four cuttings of alfalfa off those fields. Then it was three, then two. We just couldn't get enough water anymore.”*

*In 2008, Christensen and his family put the land up for sale. But this far from the thriving urban communities on the Wasatch Front, there were no buyers. Finally, reluctantly, they packed up the pickup and moved into town. But neither Judd, his wife, Claire, nor their eldest son Jason could find work in a depressed economy. Last year they relocated to Las Vegas. They still own the farm, but with no buyers on the horizon, they wonder if it's worth it to keep paying the taxes. Their farm life, like Lake Sevier on the horizon, is nothing more than a mirage – an illusion buried in dust.*

*Imagine you live in Hinkley, Delta, or another town on the edge of the West Desert. You've watched as more and more families like the Christensens have left for greener pastures. It pains you to see good neighbors leave town because they can't afford to stay. Your own roots run deep and you can't imagine leaving, but you fear for the future of your hometown. So you and a few like-minded neighbors ask to speak with your county leaders, urging them to take action to stop the flow of emigrants. But the local officials, feeling at a loss for solutions, turn the tables on you: They ask you to form a citizens' task force that will recommend a strategy that can protect the land and the community. You agree ... but now what will you do? What options are open to your county and your community?*

### What will happen in this case study?

This case study consists of three parts, each of which will take up two consecutive 75-minute class periods. In it you will learn how to apply ideas from the social sciences and from ecology to address a problem that is becoming more prevalent across the U.S., most notably in more arid regions like ours. Here's what you will learn:

1. You will be able to describe a *socio-environmental system*, showing how factors in the physical environment and factors in human systems (society, economy, etc.) interact over time and space to affect the decisions landowners make and the options that communities and land managers have for responding to those decisions.

2. You will be able to apply an *ecosystem services framework* to explore how local communities are affected by environmental change.
3. You will be able to apply ecological tools that land managers often use (*ecological site descriptions, state-and-transition models*) to a real-world situation, considering them in their societal contexts.
4. You will identify *alternative futures scenarios* and evaluate the real-world tradeoffs faced by land managers and government officials when trying to direct change toward a more desirable future.

### What will you be asked to do outside of class?

Before the first day of the case study, you should do three things:

1. Read this handout (see ... you're already almost one-third of the way done!)
2. Read the Wikipedia entry for "rural flight," focusing on the U.S. examples.
3. Check out a website called Mental Modeler (<http://www.mentalmodeler.org/>), making sure to view the 4-minute tutorial video. You will use this online tool during the first part of the case study.

Between the first and second class periods, you should read this short journal article to learn how faraway events and decisions can create historical legacies that affect land in our region:

Morris, Leslie R., et al. 2011. Implementing ecologically based invasive plant management: lessons from a century of demonstration projects in Park Valley, Utah. *Rangelands* 33(2):2-9.

One week after the second session of Part I, you should turn in a 2-page reflections paper that answers the following two questions:

1. What was the most unexpected thing you learned from engaging in the concept mapping exercise?
2. What top-down and historic forces may make regions such as western Utah vulnerable to farmland abandonment?

Before the first day of Part II, read the following short article that describes a process that land managers and their stakeholders can use to address problems of land degradation in shrubland ecosystems:

Brunson, Mark. 2014. Unwanted no more: land use, ecosystem services, and opportunities for resilience in human-influenced shrublands. *Rangelands* 36(2):5-11.

During the first class period of Part II, you will volunteer to be either a "land expert" or a "community expert," choosing whichever role you feel more comfortable with. Your role will determine which article you should read between class periods of Part II:

Land experts will read: Monaco, Thomas A., et al. 2012. Repairing ecological processes to direct ecosystem state changes. *Rangelands* 34(6):23-26.

Community experts will read: McManus, Phil, et al. 2012. Rural community and rural resilience: what is important to farmers in keeping their country towns alive? *Journal of Rural Studies* 28(1):20-29.

One week after the second session of Part II, you should turn in a 2-page reflections paper that answers the following two questions. Right now these questions may not make sense to you, but don't worry – they will by the time you're asked to complete the assignment:

1. Which of your predicted trajectories (from the expert group discussion) do you feel *most* confident about, and which of your predictions do you feel *least* confident about. Explain, with reference to successional and/or community transition processes.
2. What did you learn from the *other* expert group that you hadn't known previously? Explain what you learned.

Prior to the start of Part III, you should read one last short journal paper, which describes different ways that landowners might be rewarded for providing ecosystem services from rangelands:

MacLeod, Neil D., and Joel R. Brown. 2014. Valuing and rewarding ecosystem services from Rangelands. *Rangelands* 36(2):12-19.

Between the first and second sessions of Part III, you will need to read a handout (to be provided in the first session) that describes rural community and land preservation strategies that have been implemented in similar situations.

One week after the final session in Part III, you should turn in a 2-page reflections paper that answers the following two questions.

1. In this exercise you were asked to consider questions of feasibility (political as well as economic) and equity. Do you feel that the most feasible solutions were also the fairest? If so, why? If not, how did your group resolve conflicts between feasibility and equity?
2. In your analyses you have seen that information about some ecosystem services is easier to obtain than information about other ecosystem services. What do you believe is the best way to address this discrepancy in real-world decision-making?