

The Ala Archa Ecological Leadership Program:
Evaluating the Efficacy of Outdoor Education and Ecological Economics in Creating
Responsible Environmental Behavior in the Kyrgyz Republic

Research Introduction and Project History

Despite an increase in humanity's scientific understanding of the negative effects our behavior has on the environment, these advances in knowledge have not translated over to the general public in the form of effective action. To the contrary, efforts to bring developing nations to the same standard of living as developed nations seem to openly scorn the message that our biosphere is under stresses not previously experienced during the history of humankind. Despite the publication of countless academic resources produced through experiments, monitoring, and studies of various kinds, the ability for researchers to communicate their message and translate that message into action seems to fall short. Notably, my background in the military exposed me to a sort of microcosm of the same nature – the inability of intelligence-generating bodies to effectively convey their overall message to operations planners and thereby convince decisionmakers to steer operations along the most effective route. Thus, when I made the transition back into the academic realm, it was with the conviction that the body of knowledge regarding the health of our environment that lay dormant on library shelves and electronic databases must find its way into the minds, and ultimately the actions, of the citizens of the world.

In the process of questioning how to achieve this lofty goal, I eventually began to think back to my own deep-seated convictions of the importance of the natural world. From whence did these feelings arise? What inspired them to first come to life and what experiences have nurtured them to their current state? The answer was immediately clear – I could clearly trace the origin back to a childhood growing up in rural Louisiana and then forward through a series of intimate interactions with nature during activities such as backpacking with the Boy Scouts,

college climbing trips, and months spent during military training laying in the dirt and watching ants to pass the time. The question for me, then, was this – if positive exposure to the natural environment worked to inspire me to care for ecology, was it proven to also work for others?

A cursory review of studies regarding outdoor education and the concept of “responsible environmental behavior” indicate that there is indeed a link between exposure through the outdoors via experiential education and general environmental knowledge. However, the assertion that knowledge of ecology leads to action and then subsequent long-term ecological behavior change (the Knowledge-Action-Behavior, or KAB, theory) is questionable – my initial literature reviews revealed an increasing number of researchers who are skeptical of the ability of the KAB model to produce true behavior or lifestyle change. If simple exposure to an element of an ecosystem could not achieve the effect of behavior change, then what could? The paired concepts of systems thinking and ecological economics seemed to hold the answer.

In traditional environmental education, the process of teaching about an ecosystem is often decoupled from or weakly coupled with the human role in positively or negatively affecting that ecosystem. We see how forests grow, how animals live and thrive in forests, and how logging may be an objectively “bad” activity for the forest. This may, in turn, produce a certain degree of cognitive dissonance between two things a learner knows to be good – a forest and forest products such as paper – and what they hear is supposedly bad – the cutting down of forest trees. The reaction to cognitive dissonance is, then, to simply turn the lesson off. Faced with feeling guilty for using forest products due to my understanding of the simple, linear nature between the products and harm to the forest, I may choose to suppress the lessons learned about forest ecology. Put simply, many of the current approaches to environmental education and behavior change fall short due to an improper presentation of the complex relationship between human and environment. In contrast, the concept of Social-Ecological Systems (SES) seeks to deepen the connection between humans and the natural world. Thus, I hypothesized that the process of exposing a young adult to the richness of the SES concept within the context

of a natural environment may become the vehicle through which to merge the process of decision making and strategic planning with the valuation of ecosystem services and environmental integrity, resulting in an overall increase in responsible environmental behavior.

Given that there is currently no environmental education program that actively teaches concepts of ecological economics, systems thinking, and the Social-Ecological System in its curriculum, I spent the last two years creating a “laboratory” for this research by coordinating a two week-long outdoor education program for the American University of Central Asia in Bishkek, Kyrgyzstan. I chose Kyrgyzstan as a result of reading the 2013 Kyrgyz National Sustainable Development Strategy, a policy paper that essentially put forth a call for programs to help with inspiring leaders in Kyrgyzstan to think with more complexity about the future of the Kyrgyz Republic’s economy and environment. After speaking with several project partners about the idea for an experiential education program in Kyrgyzstan, the American University of Central Asia agreed to partner with me to support the program. Thus, since August 2015, I have worked actively to write a curriculum and emplace the logistics support that will allow for the program to take place. From 01 – 13 August 2016, the Ecological Leadership Program will take place in Ala Archa National Park, Kyrgyzstan, and provide a means by which to examine the efficacy of a focused ecological economics curriculum in the context of outdoor education.

Ultimately, the Ecological Leadership Program (ELP) has two main goals. The first goal is research-based and involves gathering information to answer the questions posed above. The relevance here lies in the implications for outdoor education curriculum if the findings indicate that exposure to complex social-ecological dynamics can elicit responsible environmental behavior. Given the amount of outdoor education that occurs throughout the world, the addition of ecological economics theory to the curriculum base could pay dividends in the objective of training people to act in truly positive ways towards the environment.

The second goal is application-based and seeks to positively affect the lives of the student participants in the ELP. There is currently no active university outdoor education

program in the Kyrgyz Republic, a country of amazing natural beauty and rich natural resources. If applied correctly, the ELP stands to graduate the first class of students in the country who receive a curriculum in leadership, ecology, and outdoor education through the context of experiential education. Given the generally positive outlook towards experiential and outdoor education in other countries, the student graduates of the program stand to benefit in their academic and professional lives from an initial exposure to the rich legacy of this learning model.

Research and Project Execution

After a year's worth of logistics planning, curriculum writing, and background research, the US-based Eco-Leader Program team departed from Vermont in late July 2016, bound for Bishkek. The US team consisted of myself (Nathan Fry, University of Vermont graduate student and program coordinator) and Sonya Buglion Gluck, University of Vermont undergraduate and program instructor. After 24 hours of travel, we planned to land in Bishkek, capital of the Kyrgyz Republic, and then link up with the Bishkek-based ELP team – American University of Central Asia ecology professor Zheenbek Kulenbekov and outdoor educator Patrick Barrow. Despite the extensive planning already invested in the project, there were still several key hurdles to cross. We first needed to pass through customs with 200 lbs of equipment donated from project partners Black Diamond Equipment, Nalgene, Kahtoola, Diva Cup, Darn Tough, and Kroka Expeditions. Furthermore, even if all the equipment made it successfully to Bishkek, there were still important purchases required to fill gaps in the equipment list – sleeping bags and pads, maps, food supplies, and other assorted gear. Finally, after we completed the final purchases, the supplies still had to be packaged, packed, sorted, and prepared to hand out to students on the first day of the program. With five days left to complete all the remaining tasks, I dusted off my conversational Russian and put it to work in the bazaars, sports shops, and grocery stores of Kyrgyzstan to buy a list that ranged from sausage and cheese to paint and plywood. By

Sunday 31 July, the program was ready to go, with packs, jackets, microspikes, and food resupply bags neatly laid out in a classroom at the American University of Central Asia.

The Ecological Leadership Program began on 01 August 2016 and, over the next two weeks, brought seven Kyrgyz students on an ecological journey into the backcountry of the Tian Shan mountains. Using a model inspired by *Ecological Economics: A Workbook for Problem-Based Learning*, the ELP leadership team worked to connect the students to aspects of responsible environmental behavior by physically journeying up a local watershed, beginning at the Alamedin River Canal on the first day of the program and tracing the water's journey backwards up its course to the wild torrents of the Ak Sai River, then to the snowy expanse of the Ak Sai Glacier, and finally to the snows on the 14,836 foot Peak Uchitel. We attempted a range of ecology exercises to complement the physical journey in an effort to understand how to maximize the retention of lessons in ecology and thereby inspire more responsible environmental behavior in students. These lessons ranged from lecture-style presentations on watersheds and ecology to hands-on exercises to count bioindicators in streams to games involving ecological economic problems. In conjunction with these lessons, students also experienced a conventional outdoor education curriculum – they learned to set up tents and cooked, served as “leader of the day” to provide leadership experience, and reveled in the adrenaline rush of rock climbing and summiting high peaks. After twelve days in the field, the seven ELP students descended back to the Ala Archa National Park Alpine Camp for a final ceremony. All seven completed the program on 12 August 2016, beaming in the pride of their accomplishments and personal growth.

Research Findings

The core question of the Ecological Leadership Program was twofold. First, we could not assume that the traditional “outdoor education” program would work in Central Asia. Therefore, the first question was one of validity and effectiveness – can a western-style outdoor education

curriculum transfer over to a culture where an outdoor education model currently does not exist? Second, in the event that the model transferred over, we planned to determine whether one can use a curriculum that deliberately ties experiential education with lessons in social-ecological systems to create responsible environmental behavior in participants. We used qualitative research methods in the form of interviews, focus groups, and participant observation throughout the course to gather initial data. Although the ELP project team continues to work through its data and complete the summary of findings, several notable observations immediately stand out.

In regards to the question of the transferability of outdoor education, the overall success of the Ecological Leadership Project at an individual student level and with the sponsor organization (the American University of Central Asia) suggests that the model is compatible, albeit with a few considerations. The ELP project team, in an initial review of the data, summarized these considerations in the following points:

1) The *scale* of the program must be manageable for students who have never experienced demanding outdoor activities. Planners must consider scale of distance traveled daily (a long movement for the ELP was no more than five kilometers) and the scale of the program start to finish (several students mentioned that the course should be shorter to make it more manageable). Many introductory outdoor education courses in the United States begin at 14 days and travel more than 3 miles daily. From the ELP instructors' point of view, this scale would be entirely too large for an introductory course in the Kyrgyz Republic.

2) The program *scope* must account for the introduction of concepts that are often completely new to students. In the case of the ELP students, none had ever experienced an outdoor education program, only one had extensive backcountry experience, and only two had training in ecology. The ELP instructors had to adjust the planned topics in the program to maintain a focus on core concepts – ecosystem services, watersheds, personal responsibility, and backcountry planning – because of the unexpected level of unfamiliarity. Program planners

must consider identifying the core program lessons and values and revisiting them frequently and with different methods. Program scope should be more focused on “mastering the basics.”

3) The *schedule* must not only blend scale and scope, but take into account the cultural sense of time in the host country. In the case of the ELP, Patrick, the most experienced instructor, was also an Australian expatriate who lived the last six years in Kyrgyzstan. He helped the other instructors to make more measured assessments of the time that it would take to accomplish certain tasks. For example, lunch was rarely a “30 minutes and done” task. Rather, the Kyrgyz cultural habit of taking tea with every meal impelled instructors to lengthen lunch time to accommodate for tea brewing and consumption. This was an aspect of the schedule that was not originally accounted for. Program planners and instructors should thoroughly research the habits of their host country to determine where the schedule may need to adjust.

Given the program’s apparent ability to translate to the Kyrgyz culture, there remains the question of how to increase responsible environmental behavior (REB) through an outdoor education program. Based on participant observation exercises, interviews with participants, and course feedback, the following characteristics stood out.

1) A program that is directly tied to a journey through a particular ecological landscape seems to be a major contributor to inspiring connection to the land, a prerequisite to REB. In the case of the ELP, the course instructors crafted the curriculum to begin in Bishkek, a city notable for the many canals that run through the very center of the city. Water is ubiquitous throughout the urban area, but many people take little note of the origin of the water in the high mountain glaciers directly to the south of Bishkek. The ELP tied students to the water within the first hours of the program by holding the first class near a rapidly flowing but heavily trashed branch of the Alamedin River canal. The class explored the presence of water in Bishkek and its value in the face of development and climate change, with value becoming a theme that the course continued to revisit as the ELP traveled up the watershed along the free-flowing Ala Archa and

Ak Sai Rivers. The notable classes took place directly on the Ak-Sai glacier and snowpack on the high altitude peaks of Ala Archa National Park – this was the first time that the students had ever considered the source of the Bishkek water system. Nearly all instructors and students noted in later journaling and course reviews that a major turning point in their relationship with the environment was the opportunity to see the glacier and comprehend that, despite its size, that it is a finite and shrinking water source. This journey up the watershed elicited short term REB changes (ex. students were observed engaging alpinists on proper stream etiquette), but long-term alterations in REB will require further study.

2) In addition to modeling the program on a physical journey tied to a particular ecological landscape, instructors can also augment instruction in ecology with an array of hands-on group exercises. The ELP attempted several instructional forms, of which the small-group lecture format received overwhelmingly negative reviews. In contrast, students responded readily to simple biology exercises such as measuring bioindicators in streams and counting insects to determine ecosystem health. ELP instructors also modified classic leadership decision games such as the “Island Scenario” (where individuals pick an array of objects based on their value on a deserted island) to reflect lessons in ecological economics. In one case, instructors divided students into stakeholder groups (ecologists, recreationists, businesspeople, heritage/culturalists) and presented them with an array of pristine resources (glacial river, high wildlife presence, glacier and high annual snowfall) in a fictional recently purchased block of land. The students then had to debate the value of each resource and what to do with it based on their individual perspective. In later reviews, students noted that the exercise helped them understand how perspective may cause natural resources to gain or lose value and deepened their overall understanding regarding the difficulty of ecology.

Ultimately, observations of the curriculum in action indicate that crafting a program around the ideas of ecological economics – namely, that resources have a range of values outside of simple monetary worth and are directly tied to the well-being of people – helps

students identify strongly with nature and responsible environmental behavior. Key to this approach was the process of placing students in an environment where there was a direct correlation between a healthy environment (in this case, water) and their own health and well-being. Future studies should craft similar curricula in an attempt to replicate these conditions and determine whether student groups with different demographics respond similarly to a landscape- and ecological-economics based program of instruction.

Conclusion and the 'Way Ahead'

The Eco-Leader Program concluded as a short-term success with a bright but unknown future. As the students finished the backcountry program on the evening of 12 August with a presentation and skit about all that they had learned, the pride in their accomplishments and confidence in their new skills was evident. They spoke of the fear and uncertainty at the beginning of the program, the misery of the stormy nights when summer snows fell on the tents, and the mental stamina it took to ascend to the glacier and Peak Uchitel. Standing in front of their parents and the university president, however, they attested that the entire journey had produced a level of growth in themselves that they did not expect. These seven students – Nurali, German, Elpodin, Begimai, Altynai, Nurzhan, and Begimai A. – were the first Kyrgyz students to be challenged in a long-duration experiential education program hosted in the heart of the Kyrgyz Republic. They rose to the occasion and succeeded. But, just like the immediate flowering of responsible environmental behavior, only time will reveal whether the ELP was effective in inspiring its students on to greater leadership roles, care for the earth, and replication of the ELP for the next cohort of students. If the ELP succeeds long-term, it will be a testament to the power of linking the fate of a magnificent landscape to the individual lives and behavior of a group of ready and open learners.