Hemispheres

The International Area Studies Outreach Consortium
at the University of Texas at Austin
Latin America, the Middle East, Russia, East Europe & Eurasia, and South Asia

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Fall 2004 Newsletter

In this issue:

People and Place: Human-Geographic Relations

We kicked off Hemispheres' seventh annual summer institute for teachers with a lively presentation on "Finding Our Place: Thoughts on the Value of Geographic Thinking" by Jeff Lash, University of Houston-Clear Lake. Jeff framed our discussions for the week-long workshop by reminding us that geography's "continuing quest is to understand the physical and cultural features of places and their natural settings on the surface of the Earth." Central to understanding human-geographic relations are two crucial questions, *Where?* and *Why there?* Where is the place we are discussing? And why did people initially choose to settle there, or to use or conserve the resources there? It is in answering these two questions that we are able to move forward in our quest for geographic understanding.

In looking at issues ranging from water management in South Asia, to the geographic history of Egypt, to a business perspective on people and place, to biological conservation in Latin America, to air pollution in Russia, we knew that the key to comprehending these subjects lay in answering the questions that Jeff posed. In the spirit of these questions, this issue of *Hemispheres* presents four case studies from our summer institute. By exploring the *wheres* and *why theres*, we will address both the reasons for and the results of human impact on and adaptation of the environment. As we look at each of our regions separately, we begin to see key issues we face in our increasingly interconnected, interdependent world.

Why geography?

The Existential Reason: Geography helps us understand the intrinsic nature of our home.
The Intellectual Reason: Geography captures the imagination and stimulates curiosity about the world and the world's diverse inhabitants and places.
The Ethical Reason: Geography provides a basis for humans to cooperate in the best interests of our planet.
The Practical Reason: Geography has utilitarian value in our modern, interconnected world.

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Conservation Choices in Latin America

There are thought to be 12.5-30 million existing species on Earth and conservation of this biodiversity is one of the biggest challenges we face today. Biodiversity contributes to the maintenance of ecosystem functions that support life and contribute to human well-being. Few issues reveal the link between people and place better than our effects on the environments that surround us.

Latin America, which constitutes one of the world's eight biomes, is of particular concern to conservationists. One regularly hears reports on destruction of the Amazon rainforest, home to up to 30 percent of Earth's plant and animal species, and its potential impact on our lives.

But the Amazonian region is not the only one in Latin America that is crucial to preserve. "The richest and most diverse region on Earth, the Tropical Andes contains 15-17 percent of the world's plant life in only 0.8 percent of its area" (Conservation International, http://www.biodiversityhotspots.org/xp/Hotspots/andes/). The tropical Andes, spanning from western Venezuela to northern Chile and Argentina, is one of the most biologically diverse regions of the world in terms of the absolute number of species and the number of species per unit of area. In addition, Ecuador, Colombia, and Peru rank fifth or better in the world for their total numbers of vertebrate groups, except for mammals.

Conservation efforts in the tropical Andes take various approaches, including setting aside protected areas or reserves. The World Conservation Union (IUCN) has defined six categories of protected areas: (I) strict nature reserve/wilderness protection area for science or wilderness protection; (II) national parks for ecosystem protection and recreation; (III) natural monument for conservation of specific natural features; (IV) habitat/species management area for conservation through management intervention; (V) protected landscape/seascape for conservation or recreation; and (VI) managed resource protected area for sustainable use of protected resources. Reserve networks (falling under IUCN's categories I-III) have been set up throughout the tropical Andes, increasing exponentially in the last five decades: before the 1950s, there were 4 reserves, covering 7 ecoregions, totaling 11,408 square kilometers while by 2000, there were 136 reserves, covering 59 ecoregions, totaling 374,346 square kilometers. More specifically, from 1990 to 1997, Ecuador, Bolivia, Colombia, and Peru doubled the coverage of their protected areas, and Venezuela increased it five times. Reserve networks are a primary means of preserving the biodiversity of the region.

But conservationists must also plan and set priorities for the future. How does one decide which areas to protect? In Ecuador, conservationists perform a series of complex equations to determine rankings according to the following criteria: effective representation of the ecosystem in the national reserve network, level of habitat loss within the ecosystem, level of exposure to human activities, species endemism (those native or confined to the region), and conservation status of the ecosystem. Each factor can be weighted according to the conservation priorities and regions can be ranked in order of importance for preservation. Clearly, conservation is not a simple, one-time action, but a challenging, analytical, long-term process.

The root causes of loss and degradation of biodiversity are due to large issues that society must face if conservation efforts are to be effective in the long-term: demographic changes, resource consumption, poverty and inequality, and our politics and public policies. In Latin America and in the rest of the world, we have to face both the irreversibility of our actions on the environment and the uncertainty of how biodiversity loss will affect our future.

DEFINITIONS

Biomes: major global communities characterized chiefly by the dominant forms of plant life and the prevailing climate.

Ecoregions: relatively large units of land or water containing a distinct assemblage of natural communities and species, with boundaries that approximate the original extent of natural communities prior to major land-use change.

Based on "The Natural Environments and Biological Conservation of Latin America" by Rodrigo Sierra, Department of Geography.

Human-Geographic Relations in Egypt

As part of the geographer's quest to understand *where?* and *why there?*, one can find few case studies that provide clearer insight than Egypt. The Greek historian-philosopher Herodotus called Egypt "the gift of the Nile," a phrase that may be somewhat clichéd, but whose accuracy can be seen by looking at any satellite photo, population density, or agricultural map of the country (such as the ones available on the University of Texas Libraries Website, http://www.lib.utexas.edu).

In Egypt, 96% of the population resides within a few miles of the Nile Valley, which comprises about 6% of the total area of the country. Why does everyone squeeze into the same few thousand square miles? Because the remaining 94% of the country is desert. The Nile provides the necessary water for sustaining the population as well as agricultural production.

However, one major difference between Herodotus' day and the present is that the population of ancient Egypt, at largest estimate, was probably no more than 2 million. Today, Egypt is nearing a population of 70 million, and this number is expected to almost double in the next 25 years. The ancient Egyptians built many of their settlements on the desert plateau adjacent to the Nile Valley, leaving the Valley itself open for farming. The yearly flooding cycles of the Nile would have made it impractical to build settlements in the Valley itself.

One million people live in the old section of Cairo, despite the difficulties and expense in providing resources and modern infrastructure to a neighborhood nearly one thousand years old.

By contrast, modern Cairo, a sprawling metropolis of nearly 20 million people, sits right on the Nile and the fertile land that would otherwise be used for agriculture. The construction of the Aswan Dam in the early 20th century slowed the flooding cycles, and they were halted completely with the Aswan High Dam, completed in the early 1970s. This allowed a number of permanent settlements to flourish in the Nile Valley, and today almost all of Egypt's people share the Valley with the same land that they must harvest in order to meet their own basic needs.

In Egypt, the relationship between people and the land they live on has fallen victim to one of the strong forces in the modern world: economics. In the 1970s and 1980s, the Egyptian government decided to undertake a vast campaign to ease crowding in the cities by constructing new satellite cities in the desert. These vast complexes of apartment blocks, schools, hospitals, office buildings, and land plots for factories were capable of supporting nearly one million people each. However, few people took government incentives to move out to the satellite cities, and today many of them are virtual ghost towns, supporting a small fraction of their intended population. Why? There were no jobs available in the satellite cities and companies were reluctant to spend large amounts of money to close their existing factories and move to the satellite cities because there were no workers. Hence, cities like Cairo and Alexandria continue to grow at a phenomenal rate each year, and the amount of fertile land available to support the growing population continues to shrink.

The way Egypt's people will redefine their relationship with the land will be one of the most important issues they must deal with in the next century.

Ecocide in the Former Soviet Union

The area of the former Soviet Union has perhaps the worst environmental pollution in the world. For years, the Soviets squandered away resources feeling that they were more than abundant. A prominent example of this laissez-faire attitude towards the environment is the Aral Sea in Central Asia. Once the fourth largest lake in the world, the Aral Sea has now become the eighth largest lake. This is a direct result of quantity intensive irrigation practices established by the Soviet Union to grow cotton and rice. Sadly, these irrigation practices have not stopped and continue today in Kazakhstan and Uzbekistan.

The Aral Sea, once a part of the Soviet Union, lies in a desert basin in Central Asia. The Aral Sea is shared by Kazakhstan and Karakalpakistan, a self-governing region in Uzbekistan. The sea feeds into the Amu-Dar'ya and the Syr-Dar'ya rivers, though in recent years water to both of these rivers has completely stopped flowing.

Since the 6th century BC, nearby civilizations have used the Aral Sea as a source of water for agricultural irrigation. This practice is nothing new. What is new is the rapid industrialization agriculture in the region. This shift from sustenance agriculture to commercial agriculture is the largest contributor to the shrinking of the sea. As the Soviets sought to industrialize agriculture, they began to grow cash crops such as cotton and rice that were not native to the area and in fact required huge amounts of water. While the Aral Sea has undergone several changes in size, this is the first time that this has not happened naturally and has been the result of man made policies and uses of the water from the sea.

The depletion of the Aral Sea itself is only one part of this devastating environmental tragedy. As the water decreases, health problems in the surrounding areas are on the rise. Due to heavy metal pollution and increased salinity, cancer, birth defects, and other illnesses are all too common throughout the region. The depletion of the water supply provides a dark picture of what can happen if we do not properly manage our water resources. The Aral Sea tragedy underscores the fact that bodies of water are finite resources and that it is all of our responsibility to preserve them.

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HEMISPHERES NEWSLETTER is distributed to schools throughout Texas to be shared with social studies, geography, language, English, literature, math, and science teachers within each school. This biannual newsletter is a tool for teachers who use, or would like to incorporate, area-studies materials in the classroom.

Please distribute copies of *Hemispheres* to all who may benefit from our resources!

HEMISPHERES LISTSERV You can sign up to receive workshop announcements and other information from the centers' outreach programs via this electronic distribution list. We also invite you to use this listserv to communicate with fellow teachers regarding area-studies issues.

To subscribe to the list, go to http://inic.utexas.edu/hemispheres/ and fill out the form at the bottom of the page.

Developing a Sustainable Village

Leh, a village in the region of Ladakh, India high in the Himalayan mountain range, is 11,000 feet above sea level. As the population increases, Leh no longer has space for its people. The challenge is to develop a new village that meets the needs of the community and the constrictions of the surrounding environment.

Temperatures in the region are lower than 68 degrees Fahrenheit in the summer and –4 degrees Fahrenheit in the winter. The area is a cold desert, receiving less than 110 mm of rainfall and 300 days of clear sunshine annually. In the summer months residents are busy with communal farming, while in the winter they produce handicrafts. The infrastructure of the existing settlement also poses challenges. Extreme weather causes roads to be closed from mid-October to mid-May. During the long winter, schools are closed because of impassible roads and lack of access to central heating systems. In Leh, 90% of the population uses dry toilets and only has access to communal water sources. The houses are constructed of stone and mortar, have thick walls and small windows, and are separated by narrow dark pathways that do not allow for ambient solar heating.

The environmental conditions in Ladakh are extreme and necessitate a sustainable community plan. Architects must carefully consider the following three issues: (1) solar heating to reduce the energy requirement;(2) the availability and generation of electricity; and (3) the impact of availability and conservation of water. Ladakh's inaccessibility for several months each year coupled with the distance to the nearest urban center make it necessary to plan a community that can meet its own needs in terms of water, electricity, heating, and livelihood. Solar energy is an obvious source of heat for homes and water, electricity generation for lights and cooking, and in the running of green houses. In consideration of these possibilities, a nearby school was designed to utilize the sun for all of its energy needs, thereby negating the need to be connected to the local power grid. It uses passive solar heating, including large windows over exterior walls. Solar heat is captured in the walls, constructed of thick-rammed earth, during the day and radiated into the building's interior to provide continuous heating during the night. A solar cooker (a large concave mirror) is employed in the school's cafeteria. Drip irrigation is utilized in the school gardens to minimize water loss.

Plans for the new town run along a similar design scheme. Buildings are developed with numerous large windows on the south side and few small windows on the north side. Not only does this allow for ambient solar heating and reduce heat loss, it also reduces the need, during the day, for electric lighting. The passive solar heating technique used in the school, incorporating glass over thick walls, is not the only innovative technique employed. Architects considered the angle of the sun on the building faces throughout the day and the changes created as the sun's relative position changed throughout the year when planning the street grid.

The issue of developing a sustainable community is not only important in extreme environments such as those found in Ladakh. Worldwide, 60% of the increase in energy demands will come from developing countries. Self-sustaining communities can reduce the burden of humans on the finite resources of the planet.

Adapted from the presentation, "Sustainable Neighborhoods as Development Solution. Case Study: Solar Village, Ladakh, India," by Shivani Langer.

Ladakh

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Study Tour and Curriculum Development Seminar in Egypt
June 14 - July 12, 2005

The Center for Middle Eastern Studies at the University of Texas at Austin is planning a study tour and curriculum development project in Egypt during the summer of 2005. Designed specifically for Texas K-12 educators, the 4-week program will highlight the culture, history, and society of this fascinating country.

Participant fees will not exceed $1,000. This covers round trip airfare from Dallas/Houston to Cairo, accommodations, meals, lecture fees, and local transportation and site visits in Egypt.

For more information and to download the application form, see our Website: http://menic.utexas.edu/menic/cmes/Outreach/Egypt2005/

or contact Christopher Rose at csrose@mail.utexas.edu; (512) 471-3582.

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