

notes from the field...

Contrasts in Conservation

the Philippines, Kazakhstan, the United States

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I can hardly imagine a greater contrast among countries than the one that exists between the Philippines and the Republic of Kazakhstan. On one of my recent trips I experienced this contrast first-hand when I traveled from a conference in the Philippines to a field site in Kazakhstan.

The differences between these two countries is stark, but there are also a fair number of commonalities. Both the Philippines and Kazakhstan are developing countries with a relatively good infrastructure for future development. Their economies are, to my untrained eye, roughly at a similar stage in comparison to the United States economy. Furthermore, both have recent histories of occupation and influence by foreign powers. The Philippines, long a Spanish territory inhabited by people of many ethnicities, bears the recent mark of United States influence imported with cold war military bases. Likewise, Kazakhstan is an amalgam of peoples lumped together and dominated by a foreign power (in this case the Russian tsars and then the Soviets) that, until 1991, imposed its culture on the indigenous inhabitants.

The similarities between the Philippines and Kazakhstan largely stop at this point. Their vastly different recent histories and the separate cultural influences of the United States and the Soviet governments have created two countries whose internal workings have little in common. However, in spite of the immense social and cultural differences, to me what are most apparent are the ecological differences. Start with the obvious. The Philippines, a complex tropical archipelago composed of some 7,000 islands but relatively little land area, is considered one of the most biologically diverse and threatened countries on earth. In contrast, Kazakhstan is temperate and just about wholly landlocked. It is a massive country, eighth largest in the world, and it possesses a

remarkable biological diversity for a country so far north. However, relative to a tropical country it is lacking in species and it, too, faces a variety of environmental problems.

Conservation biology confronts the impact of humans on the planet and many conservation professionals view their job, to some degree, as a form of conflict resolution. From

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this perspective the comparison between the conservation problems facing Kazakhstan and the Philippines is extremely instructive. The Philippines, with a total land area of about

116,000 square miles, supports almost 90 million inhabitants, resulting in a population density of nearly 775 people per square mile. Kazakhstan, with a total land area of 1.05 million square miles, supports only 15 million people, resulting in a population density of only about 14 people per square mile. For comparison, the United States supports about 80 people per square mile.

Human impact on the environment is usually dominated by one of two factors — either human population size or resource use and abuse. Kazakhstan and the Philippines are polar opposites in this regard and the difference in their population densities is highly relevant to understanding the impact that humans have had on these ecosystems.

The Philippines seem to be en route to an environmental

catastrophe. Overpopulation coupled with market forces have resulted in massive country-wide deforestation. The social consequences of this deforestation are horrific. On an annual basis whole villages and their inhabitants are wiped off the map by mud slides from hills denuded of vegetation. Likewise, as the population of the Philippines grows, the country has a harder time feeding its own inhabitants and more land is cleared to feed each additional person. This uncontrolled



Photo by Todd Katzner

A Palawan Peacock Pheasant, found only in the Philippines.



Photos by Todd Katzner

A typical street scene in the Philippines...

...contrasts with the emptiness of Kazakhstan.

growth in human population takes a telling toll on wildlife and on the overall environment. Philippine lowland forests are nearly gone and animal species that depend on them are rapidly declining in abundance. Upland forests, which paradoxically are often protected by the presence of insurgents, are also shrinking as settlements expand uphill. The causes and effects of all these problems would be dramatically reduced if there were fewer people in the Philippines.

Kazakhstan presents the conservation biologist with almost exactly the opposite problem as in the Philippines. Overpopulation there is irrelevant to the environmental problems its inhabitants face. As is the case for so many other countries (including our own), the factors that drive the conservation problems Kazakhstan faces are directly related to the use and abuse of resources. For example, the Semipalatinsk area in northern Kazakhstan was, for many years, a primary nuclear testing ground in the Soviet Union. The literal and figurative fallout from those tests has had massive effects on human health and well being. Likewise, the catastrophically ill-advised damming of two of central Asia's largest rivers – the Amu Dara in Turkmenistan and Uzbekistan, and the Syr Dara in Kazakhstan – has drained the Aral Sea, reducing it in size by over 30%. This has resulted in the extinction of numerous species endemic to those waters and the resulting salt and dust storms are one of many factors that have caused enormous human health problems. More recently, hunting of saiga antelope, driven by international trade for their horns, has decimated populations of this central Asian endemic, driving the species to the brink of extinction. The causes and effects of all these problems would be largely unchanged if there were fewer people in Kazakhstan.

Kazakhstan are both dramatic in their own ways. My flight home gives me pause to reflect on the different nature of the threats these countries face and the lesson in this comparison. Human impact on the environment can be driven either directly by factors such as pollution, unregulated hunting and habitat destruction, or indirectly by factors such as population size. In the Philippines and in many other developing countries, indirect factors rule the roost and reducing the size of populations is one key to solving many of the conservation threats these countries face. However, in Kazakhstan and in many large countries, density of people is irrelevant in comparison to the use and abuse of resources. In these countries direct factors drive the relationship between humans and their impact on the environment. The only way substantive progress can be made in addressing conservation issues is by reducing the impact of those direct factors.

As a biologist trained in a large country with a relatively low population density, I tend to focus on direct and measurable threats to the environment. However, as a conservationist I know that it is important to remember the role of indirect effects in creating many of today's problems. In fact, it is the interaction between resource use and population size – sometimes called the “ecological footprint” – that really describes our impact on the environment. The equation that defines ecological footprints will be weighted differently in densely populated countries like the Philippines than in more lightly populated countries such as Kazakhstan. Consequently the most appropriate conservation fixes vary accordingly. Likewise, in the United States reducing the size of our footprint, by whatever means, is truly the path to improving our environment and both the legacy we leave for future generations and the quality of life of our children.

The conservation issues facing the Philippines and

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