THE YANGTZE RIVER DOLPHIN IS EXTINCT : WHAT IS THE MESSAGE ?

Richard B. Primack

Biology Department , Boston University , 5 Cummington Street , Boston , MA 02459 , USA

In recent decades , the Yangtze River dolphin or baiji (*Lipotes vexillifer*) gradually declined while the world stood by. Wildlife biologists , conservationists , and government officials discussed the merits of protecting the species in the wild versus moving the remaining individuals to a nearby lake (Yang *et al.* , 2006 ; Reeves & Gales , 2006 ; Wang *et al.* , 2006) , but did neither. The baiji 's Yangtze River habitat has become increasingly inhospitable from over-fishing , pollution , dams , boat traffic , and poaching ; a few attempts to breed captive baiji have failed. In the end , the baiji declined from thousands to tens , and finally , according to a recent survey (baiji.org/) there are no more left. If any baiji remain in the Yangtze , there are too few to maintain a viable population. In losing the baiji , China lost an important cultural symbol and the world has lost a unique species tens of millions of years old and the only member of its entire family.

What are the lessons of this tragedy ? First , China 's drive for economic development contains hidden environmental costs. The policy of “ Modernize now , fix the environment later ” failed for the baiji. China must modernize to address poverty among its millions of citizens , and this transformation indeed represents a tremendous human achievement . However , in calculating the costs and benefits of modernization , the government has undervalued the environment while pushing ahead with new construction. Giant projects such as the Three Gorges Dam , new irrigation canals , and new cities on the coast and along the Yangtze were primarily developed with profit as the motive. While such projects brought millions of Chinese citizens out of poverty , they polluted waterways that provided habitat for the baiji and the fresh water and clean air needed by people. Although economic development is important , the wealth created by expanding industries should also be used to protect the environment for both people and native species.

Second , the government and conservation organizations must take action when species are declining. While the baiji was clearly headed for extinction , funding for research and conservation management remained stagnant.

At present , the finless porpoise (*Neophocoena phocaenoides asiaorientalis*) , which occupies similar habitat to the baiji , is also declining and at risk of extinction. The Chinese government needs to commit significant financial resources to save this porpoise , or it will disappear too. In the light of increasing threats in its Yangtze River habitat , the Chinese government established an *ex situ* breeding population of the finless porpoise in a protected oxbow lake. However , successful conservation of this and other species at risk will require major funding from the Chinese government or international organizations , even though such efforts will only create a semi-captive population , highly dependent upon people for habitat and adequate food. This population will remain vulnerable , as its range and size will be constrained by the size of the lake. However , for the finless porpoise , it is the best possible alternative.

The giant panda illustrates the enormous challenges faced by endangered species in China. The encroachment of people into its habitat restricts the giant panda to small , remote fragments of its former range. Even at these sites , hydroelectric projects , ecotourism , and illegal trapping and logging remain as serious threats to this charismatic mammal. Despite creation of panda reserves and the relative stability in its numbers , the giant panda 's future in the wild remains bleak. Like the finless porpoise , giant pandas ultimately may only survive in captivity. Recent successes in captive breeding are certainly important accomplishments. Notwithstanding , giant pandas raised in such artificial conditions may be unable to return to the wild due to alterations in their behavior and social structure. Scientists have effectively created a new domestic species without necessarily helping the wild populations to survive and reproduce.

Both within and beyond China , scientists and the public know most about large mammals. While the baiji and the finless porpoise are under discussion , hundreds of other small and mostly unknown species decline and go extinct without fanfare. In the countryside , poor villagers left behind by China 's economic miracle gather every available plant and animal to eat or sell to their newly

wealthy fellow citizens in the cities (Li & Wilcove , 2005) , resulting in a notable absence of native birds and other animals. This deterioration in China 's environment is considered part of the cost of economic development. However , China does have the resources to modernize and maintain a healthy environment. A change in policy that places more emphasis on environmental protection will benefit many species otherwise headed for extinction and will benefit millions of Chinese who would otherwise suffer illness and premature death from their polluted environment. The extinction of the baiji , an early casualty of China 's rush to become a wealthy and prosperous nation , is an example of what happens when damage to the natural

environment is ignored.

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