

Permanent River Protection Strategies for China

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CLIENTS

China Rivers Project Kristen McDonald is the co-founder of this project, whose mission is “to protect China’s river heritage for people and wildlife and to foster river based recreation in China”.

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OUR ROLE

We have been asked by our clients to provide recommendations for a river protection system for China. A number of Chinese government officials, NGOs, and stakeholders are in contact with the China Rivers Project and have asked for information regarding (1) how river protection systems operate in other countries and (2) which strategies from those systems might be applicable to China.

Problem Statement

Increasing economic growth and an expanding population in China have created a need for water resource development projects that generate electricity, increase water supply, and provide flood control. This rapid development of rivers has led to the alteration and degradation of ecosystems and the loss of cultural heritage.

Project Significance

A dialogue regarding approaches to river protection has begun between Chinese governmental officials, environmental experts, and the Chinese environmental NGO community. Officials have expressed interest in looking at river protection strategies that are employed by other nations as they consider developing one that will meet the needs of China’s environment. Therefore, it is a propitious time for researchers and organizations, such as the *China Rivers Project*, to demonstrate to these officials the benefits of permanent river protection, provide examples of successful programs around the world, and offer recommendations for an applicable system.

Background

For over 4,000 years rivers have contributed to a deep cultural history in China, and they play an integral role in sustaining China’s

livelihood and expanding its economy. Today water resources management has emerged as one of the nation’s pressing environmental concerns as demand increases, supply becomes less secure, and water quality is degraded. This issue is not unique to China, as development of water resources, in particular of rivers, is required worldwide to meet water supply and energy needs. Many nations face the challenge of balancing development goals with environmental protection.

River development has many positive impacts on society, but rivers preserved in a free-flowing state also offer significant benefits. A free-flowing river is defined as one that is undeveloped and flows from source to mouth undisturbed (WWF 2006); however, few rivers remain in their natural or free-flowing state today. Protection of free-flowing rivers and river segments provides numerous environmental, social, and economic benefits to society, and in particular, to riverside communities.

China can maintain the benefits that free-flowing rivers offer by establishing a legally enforced river protection system that safeguards some rivers from development.



Methodology

Our research methods consisted of two components: (1) river protection framework analysis and (2) an examination of Chinese environmental laws and institutions.

With an understanding of existing river protection systems and of the legal and institutional structure of China, we were able to construct specific recommendations for the design of a river protection system for China.

Frameworks

We have examined established river and water protection frameworks, as well as emerging river protection systems in a number of countries, to understand how the systems are planned and initiated, and identify the factors that are most important to their sustained operation. Each of the systems (photos 1-4) that we researched - the U.S. Wild and Scenic Rivers system, the Canadian Heritage System, the EU Water Framework Directive, and Norway's River Protection System - serves as an example of an established framework that protects the free-flowing nature of rivers.

We identified the drivers of origination, common features that were present in most, if not all systems, and a few unique features of

individual frameworks that contribute to their effectiveness.

In all four systems, public involvement, legal support, interagency coordination, creation of a management plan, and an interdisciplinary study process were imperative.



Institutions

We investigated the roles and interactions between the major institutions in China. We also explored the functions and responsibilities of key agencies to identify their potential roles in the development and management of a river protection system.

Laws

We have researched a number of Chinese environmental laws which address water quality, pollution prevention, and water supply and management. We have also investigated laws pertaining to social

organizations and public participation in decision-making.

The existence and enforcement of these laws may provide legal support for designation and protection of rivers.

ENVIRONMENTAL LAWS IN CHINA DISCUSSED IN OUR REPORT:

- ❖ Environmental Protection Law
- ❖ Water Law
- ❖ Water Pollution Prevention and Control Law
- ❖ Environmental Impact Assessment Law
- ❖ Regulations on Nature Reserves
- ❖ Renewable Energy Law
- ❖ Regulations for Registration and Management of Social Organizations
- ❖ Provisional Measures on Public Participation in the Environmental Impact Assessment
- ❖ Measures on Open Environmental Information
- ❖ 11th Five-year Plan

Deliverables

Preliminary river protection framework

We synthesized our research of the values of free-flowing rivers, river protection systems, and Chinese laws and institutions, and have provided specific recommendations for incorporation of a river protection system into the existing legal framework in China.

Our recommendations include a host of river protection measures that can be applied to near-pristine rivers and river segments, as well as to rivers that are already affected by some form of development. Designation of rivers based on current accessibility and permitted activities is suggested, as are measures that address the nomination, study process, approval, administering authority, management plans and monitoring, all of which are explained in detail in our specific recommendations.

We recommend that a river be nominated for inclusion into the protection system by the government at all levels, Chinese NGOs and by citizens. In response to a submitted nomination, a study process should be carried out by an interdisciplinary team of experts within the administering authorities.

Experts should determine if a river will be protected based on a list of values that includes: scenery, culture, history, geology, wildlife, fisheries, habitat, recreation, tourism, or other outstanding values.

The nomination process and development of management plans should also be informed by public comment and hearings. For final approval into the system, a river must be deemed eligible and suitable for protection based on the following criteria:



- (1) is in a free-flowing state
- (2) possesses a listed value(s)
- (3) demonstrates sufficient measures for long-term protection

We suggest that the administering authority of the system be shared between three agencies that are already responsible for river or water protection and planning. These agencies include the Ministry of Water Resources, the Ministry of

Environmental Protection, and the National Development and Reform Commission. We propose that central government agencies or delegated local water bureaus and environmental protection bureaus manage specific rivers and river segments.

In addition, provisions are included for the development of management plans for protected rivers, consistent monitoring, and funding and enforcement mechanisms.

Benefits of free-flowing rivers

Following an extensive literature review, we have compiled an account of the various environmental, economic, and social benefits of rivers that are left in a free-flowing state or that are protected from major development projects. We have also illuminated the impacts of not protecting rivers from harmful development.

Environmental benefits that result from the protection of rivers include the maintenance of a number of ecosystem services. Some of these are flood mitigation, purification of water, nutrient cycling and reduced sedimentation. Rivers also provide rich and varied habitats that support biodiversity.

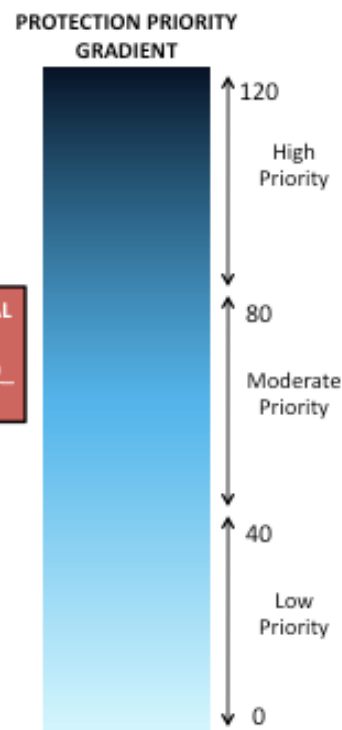
Economic benefits include profits from fisheries, recreation and tourism, as well as the avoided costs of dam removal or repair. Social benefits, particularly in China, include intact local communities, preserved cultural and spiritual practices, and sustained livelihoods.

VALUE ASSESSMENT TOOL

This tool assists Chinese decision-makers during the study process in their consideration of protection of nominated rivers.

It also highlights the benefits of river protection and the values that rivers possess, which are often overlooked and may qualify a river for permanent protection.

Value Assessment Tool for the Benefits of River Protection			
BENEFITS OF RIVER PROTECTION	VALUE	RANKING (0-10)	WEIGHT (X 1,2,3)
Environmental	Biodiversity	5	3
	Ecosystem Services	6	1
	Habitat	4	2
	Geologic	3	1
Economic	Fisheries	5	2
	Recreation	7	2
	Tourism	7	2
	Job Creation	6	1
Social	Livelihood & Health	6	1
	Cultural Heritage	8	1
	Scenery	10	1
	Historic	9	1
		TOTAL	109



Value Assessment Tool

We have created a Value Assessment Tool for the Benefits of River Protection which can assist Chinese stakeholders in their consideration of protecting nominated rivers. The purpose of this tool is to highlight the benefits of river protection and the values that rivers possess, especially those that are often overlooked. Some of these values include the preservation of geologic structures and cultural relics, maintenance of riverside livelihoods and traditions, as well as pristine beauty that can be enjoyed by both residents and tourists.

The results derived from this tool can eventually be balanced against the costs of protecting a river, which may be quantified in the form of recognized values such as hydropower, flood control, navigation, and water supply.

Currently, this tool does not perform a cost-benefit analysis, since costs are not included; rather, it serves as a reminder of the myriad benefits of river protection.

Conclusion

As China increases efforts to protect its natural environment, an opportunity exists to safeguard some of its remaining free-flowing rivers and river segments in perpetuity. China can continue to develop and prosper while it retains its environmental integrity, but this can be accomplished only if development projects continue to be preceded by comprehensive analyses of the potential harmful impacts on natural resources. New protection programs and management methods undertaken by the Chinese government may also be imperative to the successful preservation of these resources. A river protection

system is just one avenue by which some of the balance that is being sought can be attained. The utilization of rivers is vital to human survival, but rivers' non-use values are closely tied to the social identity and history of China. Through the establishment of a protection system, China can ensure the longevity of one of its most precious and vulnerable natural resources - its rivers.



Sources:

World Wildlife Fund (WWF). 2006. *Free flowing rivers*. WWF Global Freshwater Programme. < <http://assets.panda.org/downloads/freerflowingriversreport.pdf>>.

Photos: marcusuke, Mother Lode Fishing, Jim Liestman, Yuhey Tourist Agency, klareralt, International Rivers, wetcanvas.com