

刊首语

河流的价值



当游走在水网密布的长江中下游平原，也许会对人类千百年精心营造的江南鱼米之乡、苏杭天堂之地陶醉不已。若有机会翱翔于西部戈壁上空，目力捕捉到一道道流水冲刷侵蚀形成的川谷沟壑，也不禁会为那滋养了荒漠中片片绿洲的水的神奇力量而感叹。如果再能登上世界屋脊开启一段江河溯源朝圣之旅，目睹清澈蓝天之下从高山草甸中涌出的涓涓细流汇聚成无拘无束、自由奔放的河流，并联想到数千公里外的江河湖海，对水流的自然之力的敬畏更是油然而生。

河流就像地球的血脉。在一次次江河之旅中，我们不断地被造物主的神奇与伟大折服。地球被称为浩瀚宇宙中的恩宠之星——人类至今发现的唯一适宜生命存在和繁衍的家园，拥有不断循环往复的丰富而珍贵的淡水资源是其重要因素之一。而河流作为地球水循环中人类最易接近和获得的部分，在汇聚百川一路向海的过程中，便具有了双重价值。其一，如《管子·水地》篇所述，“水者，地之血气，如筋脉之通流者也。故曰，水具材也”，河水因人类之需而被取、用、调、控、灌、排，发挥各种供给与服务之功，此乃河流的功利实用价值。其二，如《林泉高致》所言“水，活物也”，健康的水是鲜活的，自然流淌是河流原真生命力的体现，是维持河流生态系统完整性的基石，河流及沿岸生灵藉水之流动被滋养与哺育，此即河流的天然属性价值。

因而，面对河流开发利用与维持自然流淌的双重价值，孰先孰后，孰轻孰重，如何协调平衡，值得深思！也不禁会进一步反思：我们的河流开发与保护状况究竟如何？水利部原部长钱正英院士曾于2006年指出，中国河流按改造程度大体可分为3类：1）完全或基本自然的河流，人类影响小，基本未建控制工程，开发程度小于10%；2）人工与自然复合河流，有一定人类影响，已建控制工程，开发程度10%~20%甚至近40%；3）人工化河流，工程化较高，开发程度在40%以上甚至达70%，且/或污染严重。基于此大致划分，钱院士认为应对不同河流分类施策：江河源应划为保

护区，禁止开发；水源丰富且关系重大的江河应在保护中开发，在开发中促进保护；水源不够但重要的河流应调整原有开发、适当补救和加以保护；开发程度高的人工化河流应改进和完善，促进可持续利用。

当代中国江河在大规模开发利用及改造下，生态环境危机已连续敲响了警钟：2020年1月1日起长江实施10年禁渔，其背后原因是梯级开发、过度捕捞、环境污染等导致白鳍豚、长江白鲟等中国代表性淡水鱼种的灭绝；近年大规模城市黑臭水体治理，面临的是河道硬化、污水直排、水流动性丧失等恶果的显现；近年洪水风险愈加攀高，与城进河退、人水争地等问题有很大关联……但“危”与“机”往往并存，中国当下恰正践行生态文明国策与“两山”理论，深耕国家公园与自然保护地体制建设，热议生态产品价值实现途径，最高层也制定了“长江大保护”与“黄河流域高质量发展”的国家战略，因而为探讨和实施“河流的保护与修复”提供了政策方向与改革契机。

风景园林学科致力于维护、修复人与自然的健康关系并营造诗意栖居环境，理应为协调解决河流开发与保护之间的难题做出创造性贡献，但这需要与水文、生态、环境工程等专业领域进行跨界交叉。景观水文学（Landscape Hydrology）作为一个整合、创新的研究方向，倡导基于“河流功能健康梯度”的河流保护与修复理念：通过划分河流的不同干扰与健康程度，分别采取“自然河流保护维持、低干扰河流重建共生、高人工化河流修复补救与可持续利用”等策略，实现水安全、水资源与水生态、水环境及水文化、水游憩等融合目标。为了让地球健康的水循环和生态系统能惠及子孙后代，我们需要多保留一些自然流淌的、未被干扰的河流，多恢复一些能够呼吸的、有生命力的河流，多重建一些鱼翔浅底、可濯可啜的河流，为此愿景与君共勉！

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PREFACE

The Value of Rivers

When you travel in the midstream and downstream plain of the Yangtze River, you may be enchanted with the fertile land and the paradise places with dense river networks, which have been carefully constructed for thousands of years. If you have a chance to fly over the Western Gobi of China and find the valley-gully formed by the erosion of running rivers, you may be impressed by the magic water that nourishes the oasis in the desert. If you start a pilgrimage to the river sources on world's ridge, watching trickles gushing from the alpine meadows and converging into free-flowing large rivers under the clear blue sky, and associating with the downstream rivers, lakes and seas thousands of kilometers away, you may be in awe of the natural force of rivers.

Rivers are like the veins of the earth. We are always impressed by the Creator's wonder and greatness in river trips. The earth is known as the Grace Star in the vast universe, the only home suitable for the existence and reproduction of lives, discovered by human beings until now. The rich and precious freshwater resources are one of the vital elements. As the most easily accessible and obtainable part of the earth's water cycle, rivers possess dual values in the process of converging to the sea. First, as stated in *Guan Zi-Shui Di*, "water is the earth's blood vessels, like the flow in the veins. Therefore, water is useful". The water resource in rivers are taken, used, regulated, controlled, irrigated and drained for human needs, which is the utilitarian and practical values of the rivers. Secondly, as the opinion "water is living things" in the *Lin Quan Gao Zhi*, healthy water is vivid. Free-flowing status embodies the rivers' original vitality, fundamentally maintains the integrity of river ecosystem and nourishes the lives inside and along the rivers. These are rivers' values of natural attributes.

Therefore, in the face of rivers' practical values and free-flowing values, we need to consider in depth the issues of which is first, which is more important, and how to balance. Further, we may ask: what are the current development and protection status of our rivers? In 2006, academician Qian Zhengying, former minister of the Ministry of Water Resources, pointed out that according to the degree of regulation, rivers in China can be roughly divided into three categories: first, completely natural or basically free-flowing rivers have low human disturbance and few regulation facilities, with development degree less than 10%; second, compound rivers of artificial and natural attributes have a certain level of human disturbance and some built regulation projects, with development degree of 10% to 20% or even nearly 40%; third, artificial rivers have high engineering level and been severely polluted, with development degree over 40% or even up to 70%. Based on this categories, Mrs. Qian proposed corresponding strategies: river source areas should be defined as protected areas and forbidden for development; crucial rivers with abundant water resources should be developed under protection limitation and for promoting protection; significant rivers

with insufficient water resources should restrict current development and take restoration and protection measures; artificial rivers of high regulation level should be promoted for sustainable utilization.

Under large-scale development, utilization and transformation, rivers in contemporary China have faced increasing ecological and environment crises: the Yangtze River begin 10-year fishing ban since January 1st, 2020, because of cascade hydropower development, overfishing and environment pollution, etc., leading to the extinction of China's representation freshwater fish species, such as Yangtze River dolphin and Chinese paddlefish; large scale black and odorous urban water body treatment, reflecting the serious problems of riverbank hardening, direct sewage discharge and loss of rivers' free-flowing status in recent years; and the increasing flooding risk associate with the spatial contradiction between urban development and river flood plain protection. However, "crisis" and "opportunity" always coexist. At present, China is practicing the national policy of Ecological Civilization and Two Mountains Theory, deeply developing national parks system construction and actively discussing the paths of ecological product realization. Furthermore, the river-related national strategies of "Yangtze River Protection" and "High-quality development in the Yellow River Basin" are implemented. These all provide policy directions and reformation chances for discussion and implementation of "river protection and restoration" strategies.

Landscape Architecture is committed to maintain and repair the healthy relationship between human and nature, and further construct poetic living environment. It should make creative contributions to solve the problems between river development and protection. However, it needs to cross the academic border to collaborate with hydrology, ecology, environmental engineering and other river-related professional fields. Landscape Hydrology, as an integrated and innovative research direction, advocates the concept of river protection and restoration based on "river functional health gradient": by dividing the different disturbance and health degree of rivers, the strategies of "protecting free-flowing rivers, reconstructing coexistence for low disturbance river, restoring and sustainably utilizing high disturbance rivers" are accordingly adopted. The comprehensive goals of flooding management, water resource utilization, aquatic ecology, water quality, water culture and recreation will eventually be realized. In order to leave our future generations the earth's health water cycle and ecosystem, we should protect more free-flowing and undisturbed rivers, restore more breathing and vigorous rivers, reconstruct more healthy rivers with fishes naturally migrating, living and growing. This vision is worth expecting and making efforts for all!

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