

はじめに

一般財団法人水源地環境センターは、ダム水源地の適正な管理を図り、ダム水源地の活性化と安全で豊かな国民社会の建設に寄与することを目的に、昭和62年に設立されて、今年で30周年を迎えました。

設立以来、(1)ダム貯水池等の水質保全対策、(2)ダム貯水池等の堆砂対策、(3)ダム周辺環境整備及び水源地域振興、(4)ダムの流水管理(高水・低水)、(5)ダム水源地の生態環境の保全・創造、(6)ダム事業等の環境影響評価、(7)ダム等管理の総合計画、等に関する調査研究及び技術開発並びに現地への適用等を行っています。このうち調査研究を推進する中心的役割を、センター設立と同時に発足した水源地環境技術研究所が担っています。

センターの発足当初は、ダム水源地の活性化に寄与する環境整備及びダムの管理で問題になる貯水池の水質保全対策と堆砂対策を中心に調査研究が行われました。しかし、徐々にその内容も多様化し、近年では生態系など自然環境重視の社会的背景から、環境アセスメントや生態系保全対策の調査研究にも重点が置かれるようになってきました。

また、地球温暖化等気候変動の影響もあり、異常気象による計画を超える洪水や渇水のリスクが懸念され、既設のダムにかかる負荷が大きくなっています。そのため、ダム貯水池容量の有効活用、ダム操作の効率化に向けた施設のあり方など、ダムの効率的管理に向けた調査研究を進めています。この他にも、水系の総合土砂管理の観点からみたダム排砂工法の技術開発、ダム湖の水質浄化対策施設としてのプロペラ式湖水浄化装置の技術開発などにも取り組んでいます。

本報は、平成28年度の調査研究成果を水源地環境技術研究所所報として取りまとめたもので、平成10年度の創刊から数えて第20号となります。継続中の調査や研究も含まれるため必ずしも十分でないところもあるかと思いますが、皆様方のご教示を賜わりながら、今後とも内容を充実させていきたいと考えています。本所報がダム水源地に関連する諸課題の解決や更なる調査研究のお役に立てば幸いです。

所報の作成に当たりまして、多大なご指導とご支援を賜りました関係各位に心から感謝を申し上げます。

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Preface

Water Resources Environment Center, Japan (WEC) was established in December 1987, reached the 30th anniversary in this year, for the purposes of a vitalization of dam reservoir areas and contribution to progress of safe and affluent society through proper management of the watershed area. Since its foundation, WEC has been engaged in research, technology development and the on-site application for (1) Dam Reservoir Water Quality Management, (2) Dam Reservoir Sediment Control, (3) Development and Vitalization of Dam Reservoir Areas, (4) Water Flow Management of Dam, (5) Preservation and Creation of Ecology around Water Resources Area, (6) Environment Impact Assessment on Dam Construction, (7) Integrated Evaluation on Dam and Reservoir Management. Water Resources Environment Research Institute, established in conjunction with WEC, has been organized to take on the important role in researches and studies of these subjects.

During the early years following the establishment of WEC, its research focused mainly on environmental improvement measures designed to contribute to the revitalization of dam reservoir areas and measures designed for water quality control and sedimentation control, which often pose problems in connection with reservoirs. The scope of research, however, has gradually changed over the years. WEC's research in recent years has come to focus also on environmental impact assessment and ecosystem conservation measures, reflecting the social background of the growing concerns for the protection of natural environment including ecosystems.

Partly because of climate change such as global warming, risk is recognized about beyond-design-basis floods caused by extreme rains and droughts. Due to these changes, the loads on existing reservoirs have been increasing. Therefore, it is important to facilitate investigations and researches for efficient dam (reservoir) management, such as effective use of reservoir capacity and ideal facility management for effective dam operations. We are also conducting research on other themes and problems such as the development of technology for reservoir sediment removal from the viewpoint of integrated sediment management for a river system and technology development of a propeller lake purification device as a water purification measures facility of the dam lake.

This report is the 20th, Starting in 1998, we have been publishing the results of our research in the form of an annual research report, and our latest achievements have now been compiled into this 2016 research report. As some of the research projects are still ongoing, readers may have some suggestions or comments for the articles. We will make the contents better with the readers' suggestions and advice. We hope that this report is helpful in tackling various problems in dam reservoir areas and useful for your research in the future.

Lastly, we appreciate all the participants who contributed to compilation of this report.

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