

生態系の保全・生息空間の創造技術の開発

Development of Technology for Preservation of Ecosystems and Creation of New Habitation Spaces

わが国は、地震、土砂崩れ、洪水などの自然の脅威から国土を守るとともに、人間社会の快適性や利便性の向上を図り、人間活動の基礎整備としての国土建設を進めてきた。建設事業は、実施の過程で人為的な手を自然に加えることになるため、人間社会の生存基盤を確保しつつ、自然と共生し、さらに豊かな環境の保全・創造を図ることが重要課題となっている。

このためには、自然を大気、水、土壌、生物といった自然の構成要素が微妙な均衡を保つ生態系として捉え、このメカニズムを科学的に解明し、国土建設分野における環境技術の一層の高度化を図る必要性がある。

本プロジェクトでは、水域を対象とした生物と環境との関係の把握を基礎として、公共事業が生態系に与える影響を予測する手法を開発するとともに、その影響を可能な限り抑制し、新たな生息空間を創造するための技術開発を行う。

Japan has promoted national construction efforts aimed at protecting its citizens from earthquakes, landslides, floods, and other natural threats, promoting their comfort and convenience, and establishing the foundations for their activities. Because the construction process involves artificial manipulation of nature, it is crucial when performing construction to promote symbiosis with nature, while securing the foundations for human survival, and to preserve and create a more bountiful environment.

Nature must be recognized as an ecosystem in which a delicate balance is maintained among the various constituent elements air, water, soil, and living organisms. In addition, efforts must be made to scientifically illuminate this mechanism and achieve ever greater advances in environmental technology in the national construction field.

This project is for the development of methods for forecasting the impact

of public works projects on ecosystems, based on an assessment of the relationship between living organisms and their environment, focusing on water areas. It is also aimed at the development of technology for reducing the impact to the greatest extent possible and for the creation of new habitation spaces.

研究開発の概要 R&D Outline

基礎研究：生物相と水域の環境条件との関係把握

Basic research: Assessment of relationship between biota and environmental conditions of waters

生物と他の生物 Living organisms and other living organisms
生物と地形、土壌 Living organisms and topography, soil
生物と水質、水量 Living organisms and water quality, water volume
生物と大気、日照など Living organisms and air, sunlight, etc.

計画技術の開発：生態系の保全と生息空間の創造のための計画技術の開発

Development of planning technology: Development of planning technology for the preservation of ecosystems and creation of habitation space

設計コンセプト及び目標設定（住民の意向を反映したコンセプトと目標設定）
Design concepts and objectives: concepts and objectives that reflect local residents' desires
生態系ネットワーク計画（現状把握、分断回避、選択的保護、代替物用意）
Bio-network planning: assessment of current conditions, maintenance of unity, selective protection, preparation of substitutes

設計技術の開発：生態系の保全と生息空間の創造のための設計技術の開発

Development of design technology: Development of design technology for the preservation of ecosystems and creation of habitation space

生息域の分断防止（魚道、動物横断トンネルなど）
Maintenance of unity in habitation area: fish routes, animal crossing tunnels, etc.
すみかの確保（中州等の選択的保護、代替すみかの用意）
Securing of dwellings: selective protection of sandbanks, etc., preparation of replacement dwellings
水質、水量の確保（水質の改善、水量の調整など）
Preservation of water quality and volume: improvement of water quality, regulation of water volume, etc.

環境への影響予測（施設 環境条件、環境条件 生物のデータより、施設 生物の関係の把握と影響予測）

Environmental impact forecasting: assessment of the relationship between structures and living organisms, and forecasting of environmental impact, from structures-environmental conditions and environmental condition-living organism data

生態系の保全と生息空間の創造のためのガイドライン

Guidelines for the preservation of ecosystems and the creation of habitation space

影響予測技術

Environmental forecasting technology

