都市における
生物多様性と
デザイン

Urban
Biodiversity &
Design

URBIO 2010

Tadayoshi INOUE &
*Yukihiro MORIMOTO

Co-Chair,
Organizing Committee,
URBIO 2010 International Conference

URBIO
Urban Biodiversity and Design

- URBIO is an open worldwide scientific network for education and research with the aim to promote urban biodiversity through a continuing dialogue with the CBD, Convention on Biological Diversity, initiative on “Cities and Biodiversity”.
- In order to input our recommendations to the CBD in urban areas through the City Biodiversity Summit, the **URBIO2010 will be held before CBD COP10**, which will also be held in Nagoya in October 2010.




URBIO 2008
http://www.fh-erfurt.de/urbio/

FACHHOCHSCHULE ERFURT UNIVERSITY OF APPLIED SCIENCES

NATURAL ENGLAND

CONTUREC

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URBIO 2008
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URBIO Network
Contact

Funded by

BfN Federal Agency for Nature Conservation

Free State of Thuringia
Ministry for Construction, Development and Media

URBIO

Urban Biodiversity & Design

Implementing the Convention on Biological Diversity in towns and cities

URBIO - International Network for Education & Applied Research

The network office is conducted currently by Prof. Dr. Norbert Müller, Erfurt, GERMANY – Chief Organizer of Urbio 2008 - under assistance of the Working Group Biodiversity And Design.

URBIO 2010

- URBIO 2010 planning committee, initiated based on the suggestion by URBIO, Prof. Muller, to the delegates from Japan at the conference of URBIO 2008.
- Japanese academic and professional societies related to the issue “Urban Biodiversity & Design” are happy to organize URBIO 2010 as follows;
  - **Date:** 18 (Tue.) – 22 (Sat.) May, 2010
  - **Venue:** WINC AICHI (Aichi Industry & Labor Center) and Meijo University at Nagoya City, Aichi Prefecture, Japan (http://www.city.nagoya.jp/global/en/)
  - **Important Days:**

• **25 January, 2009**	Deadline for presentation application
• 31 December, 2009	Deadline for early bird fee payment
• 28 February, 2010	Deadline for abstract
• 31 March, 2010	Deadline for application to the conference dinner and the mid- and post-conference excursions

http://www.jilac.jp/URBIO2010/doku.php

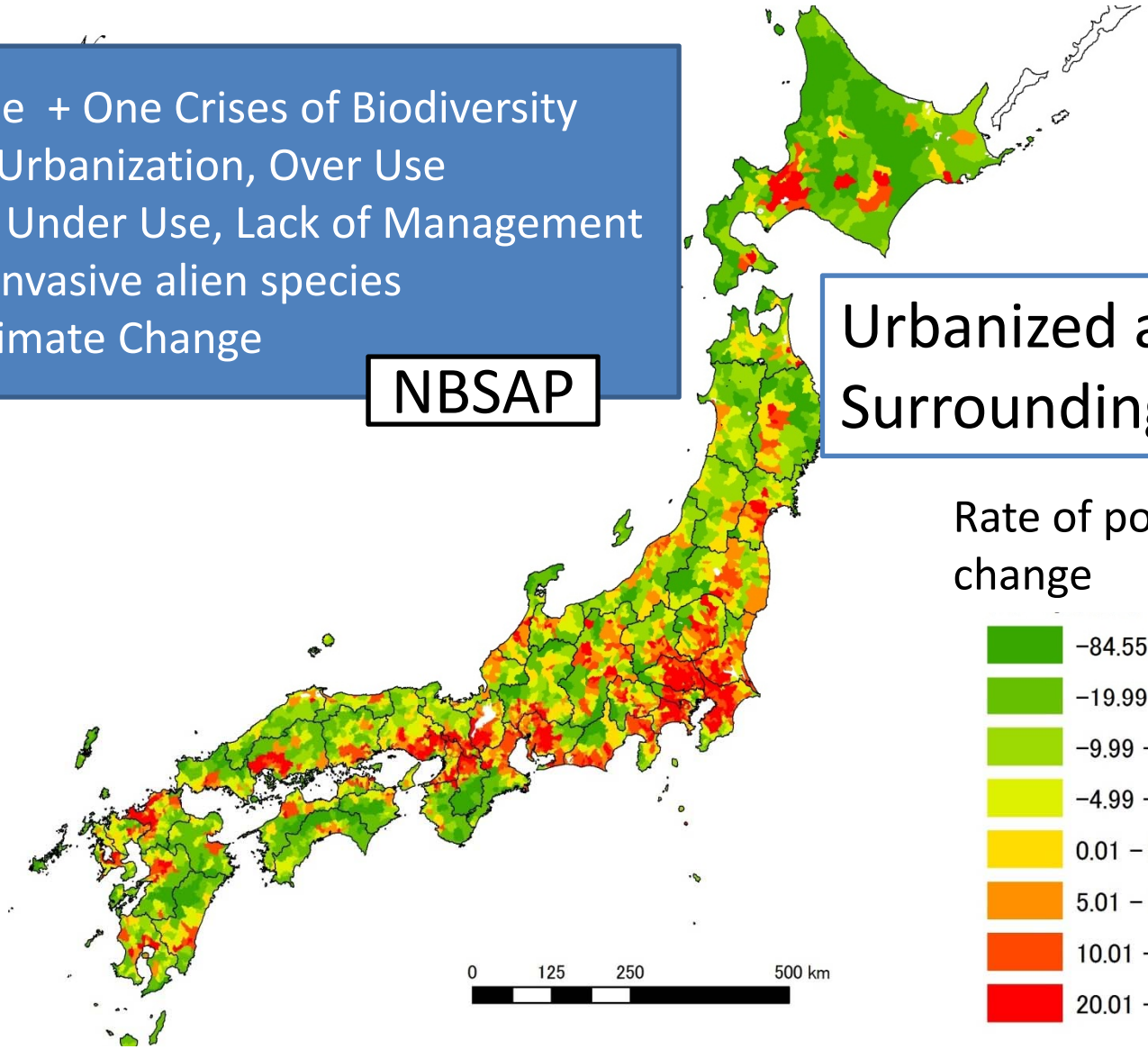
Urbanized and depopulated region in Japan

Change of population density from 1980 to 1995

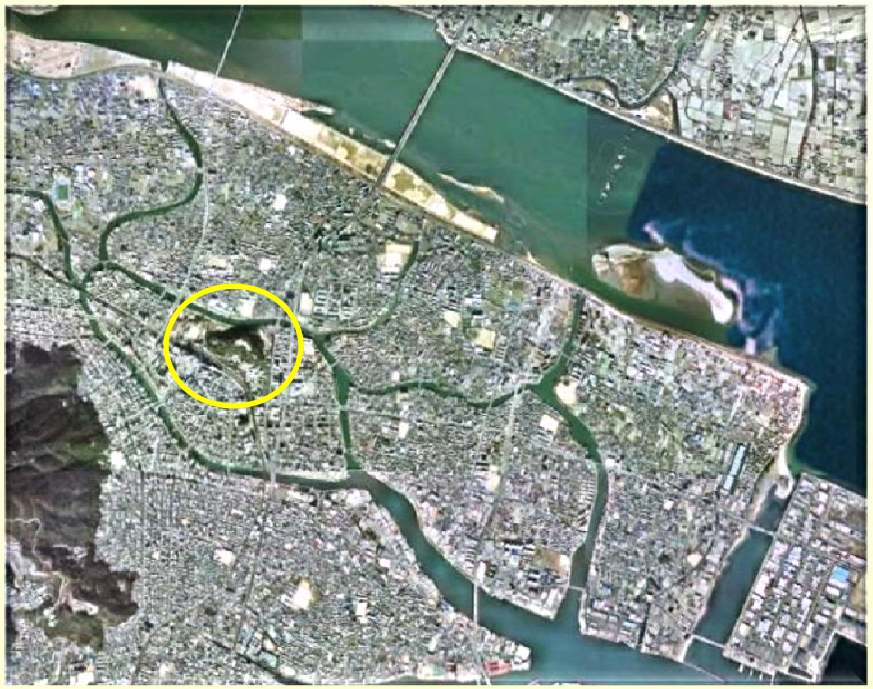
Three + One Crises of Biodiversity
1st : Urbanization, Over Use
2nd : Under Use, Lack of Management
3rd: Invasive alien species
+ Climate Change

NBSAP

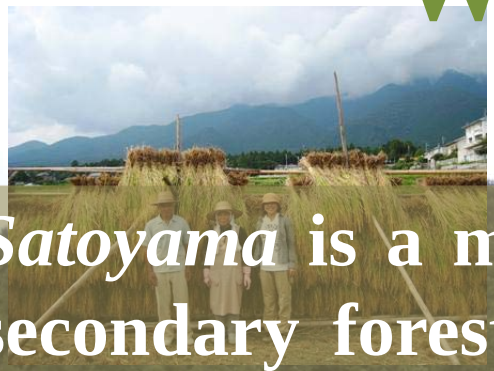
Urbanized areas
Surrounding “SATOYAMA”



Green space remaining in urban area



What is *Satoyama*?



Satoyama **is a mosaic landscape composed of croplands, secondary forests, grasslands, irrigation channel, ponds and houses. The *Satoyama* has been maintained for centuries of agricultural use under collaboration with cities; and sustained biodiversity.**

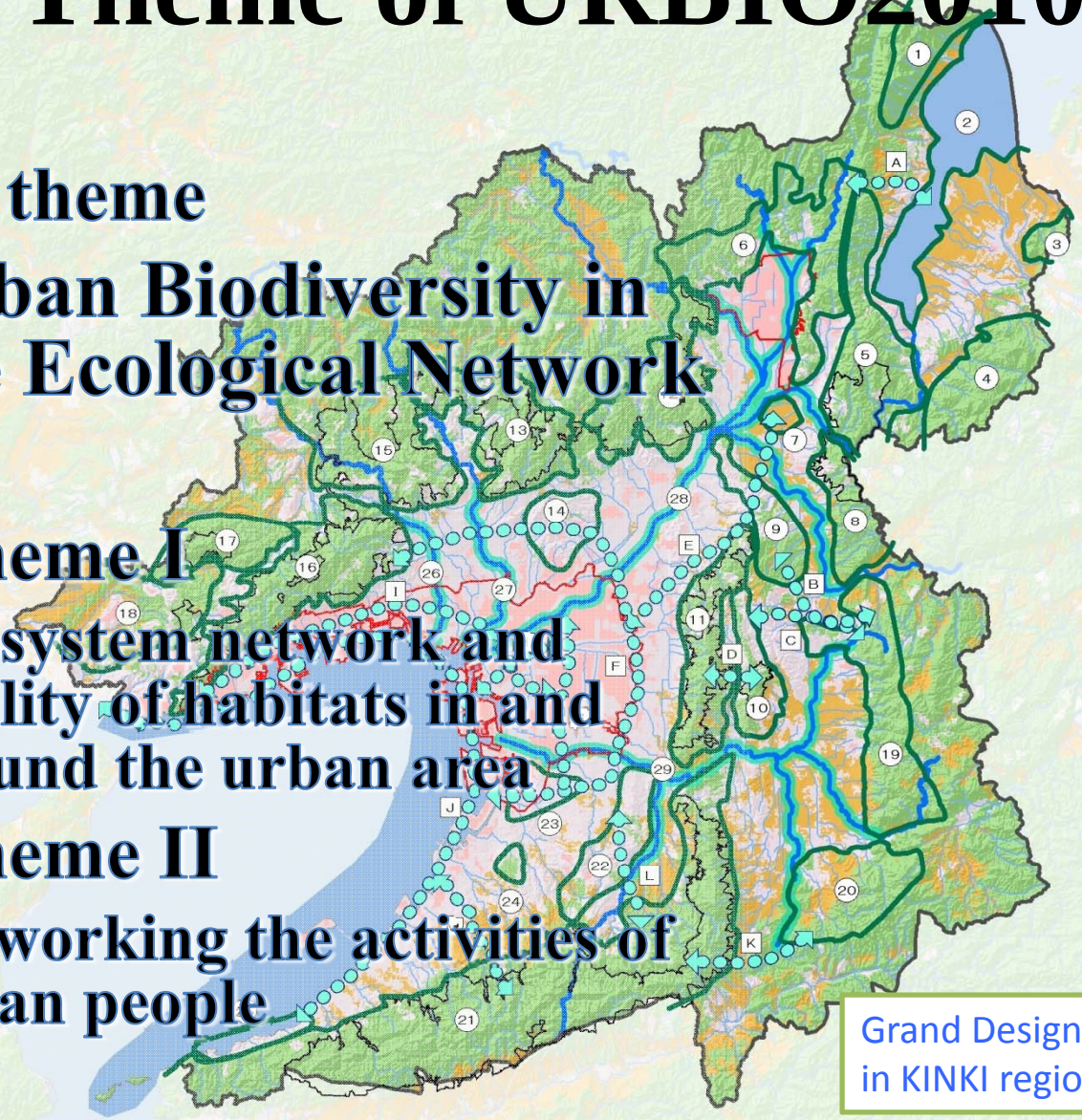
Young and fallen leaves were gathered from forests to use as fertilizers in wet rice paddy fields, and other fields. Villagers also used wood for construction, cooking and heating.

Grasslands were used to feed horses and cattle.

Streams, ponds, and reservoirs play an important role in adjusting water levels of paddy fields and farming fish as

Theme of URBIO2010

- **Main theme**
  - **Urban Biodiversity in the Ecological Network**
- **Subtheme I**
  - **Ecosystem network and quality of habitats in and around the urban area**
- **Subtheme II**
  - **Networking the activities of urban people**



Grand Design of Natural Resources in KINKI region, JAPAN. 2006

Main theme

Urban Biodiversity in the Ecological Network

Keynote talks

- Introduction Dr. Yukihiro Morimoto (Japan, URBIO2010 Co-Chair)
  - **Biodiversity and Ecosystem Services in Urban Areas for Smart Adaptation to the Climate Change – "Do You Kyoto?"**
- Topic 1 Dr. Maria Ignatieva (New Zealand)
  - **Planning and Design of Ecological Network in Urban Areas**
- Topic 2 Dr. Charles H. Nilon (U.S.A.)
  - **Management, Conservation, and Urban Biodiversity**
- Topic 3 Dr. Kwi-Gon Kim (Korea)
  - **Restoration of Wetland Ecosystem for Enhancing Urban Biodiversity**
- Topic 4 Mr. Peter Werner (Germany)
  - **The Ecology of Urban Areas and Their Function for Species Diversity**
- Topic 5 Dr. Hadi Susilo Arifin (Indonesia)
  - **Landscape Ecology and Urban Biodiversity in Tropical Country**
- Topic 6 Dr. Thomas Elmqvist (Sweden)
  - **Natural Capital and Indicators of Ecosystem Services and Biodiversity in Urban Landscapes**

Urban Biodiversity in the Ecological Network

Subtheme & Parallel session

- ***Subtheme I :Ecosystem network and quality of habitats in and around the urban area***
  - Planning and Design of an Ecological Network in an Urban Area
  - Comparative Studies of Cities: Links to Urban Biodiversity and Urban Design
  - Urban River, its Ecological Functions and Integrated River Basin Management
  - Ecological Functions of Terrestrial-Aquatic Ecotones in the Urban Area
  - Urban Greening for Human Health
  - Designing Low Carbon Societies in Asia
  - Global Warming and Urban Biodiversity: Its Status and Strategy

Urban Biodiversity in the Ecological Network

Subtheme & Parallel session

- ***Subtheme II : Networking the activities of urban people***
  - What Should the Landscape Architects Be in Pursuing the Symbiotic Relationship Between People and Nature?
  - Evaluation and Monitoring of Biodiversity and Ecosystem Services in Cities, CBI etc.
  - Corporate Responsibility for Urban Biodiversity & Design
  - Landscape Design and Ecological Education
  - SATOYAMA Management and Biodiversity
  - Contemporary SATOYAMA: to share urban and rural experiences and knowledge
  - Restoration Ecology Network in Asia

Advisory Board

- **Executive Advisors**
  - Ahmed Djoghlaf (Executive Secretary of the Convention on Biological Diversity, CANADA)
  - Kunio Iwatsuki (Director of Museum of Nature and Human Activities, Hyogo, JAPAN)
- **Advisors**
  - Thomas Elmqvist (Stockholm Resilience Centre, Stockholm University, SWEDEN), Mariko Handa (Organization for Landscape and Urban Green Technology Development, JAPAN), Oliver Hillel (Secretariat for the Convention on Biological Diversity, CANADA), Sei-ichi Kawada (Aichi-Nagoya COP10 CBD Promotion Committee, JAPAN), Kwi-gon Kim (President of the International Consortium for Landscape and Ecological Engineering, KOREA), Hajime Koshimizu (President of the Natural Environment Coexistence Technology Association, JAPAN), Norbert Müller (University of Applied Sciences Erfurt, GERMANY), Yoshiaki Nagino (Director of Green Spaces Environment Office, Parks, Green Spaces and Landscape Division, City and Regional Development Bureau, Ministry of Land, Infrastructure, Transport and Tourism, JAPAN), Koji Nakamura (Co-chair of Nippon Science Assessment for Sub-global Assessment of Satoyama and Satoumi in Japan, JAPAN), Toshitaka Takagi (Aichi-Nagoya COP10 CBD Promotion Committee, JAPAN) , Tsunao Watanabe (Deputy Director-General for Nature Conservation Bureau, Ministry of the Environment, JAPAN), Peter Werner (Institute for Housing and Environment -Research institution of the State of Hesse and the City of Darmstadt, GERMANY)

Organizing Societies & Associations

- Japan Association for Landscape Ecology (JALE)
- Japanese Institute of Landscape Architecture (JILA)
- The Japanese Society of Revegetation Technology
- Organization for Landscape and Urban Greenery Technology Development
- The Institution of Professional Engineers, Japan
- Natural Environment Coexistence Technology Association (NECTA)

Japan Association for Landscape Ecology (JALE)

- Mission
  - Develop scientific basis to promote ecologically adequate land use policy and ecological planning
- Activities
  - Academic meeting and excursion
  - Symposium open to public

Japan Association for Landscape Ecology (JALE)

- Publishing
  - Domestic journal
    - *Landscape Ecology and Management*
  - International journal
    - *Landscape and Ecological Engineering (LEE)*
    - In corporation with The Japanese Society of Revegetation Technology and other several academic societies, as International Consortium for Landscape and Ecological Engineering
    - www.springer.com/life+sci/ecology/journal/11355

Japan Association for Landscape Ecology (JALE)

- Expectation to URBIO2010
  - Exchange ideas and successful examples of good practices for networking habitats and human resources, in order to initiate next step
    - *Satoyama:*surrounding urban area - Green space remained in urban - Green space created in urban
  - Input the results into International Local Government Conference on Biological Diversity and COP10

The Japanese Society of Revegetaion Technology

Purpose of revegetation technology

Restoration and conservation of ecosystem/biotope/landscape

JSRT is **the most traditional society in Asia since 1966** in the field of **ecological restoration**.

JSRT has **9 research sections**

Revegetation technology for/of/at;
ecosystem management, urban and countryside,
dry and cold area, artificial slope, forest, meadow,
wetland, etc.,

Current topics include;
effects of "greenery" on **human health**,
conservation and management of **biodiversity**

JSRT's scope for biodiversity conservation

Development of revegetation technology and design for,

enhancing **ecosystem services**
by the rehabilitation of deteriorated land, and t
restoration of **local** habitat/ecotope/landscape
local = climatic, geological, historical, cultural

JSRT set up the guideline **"Proposal on Plant Materials in Revegetation Technology for Biodiversity Conservation"** in 2002.

The Japanese Institute of Landscape Architecture

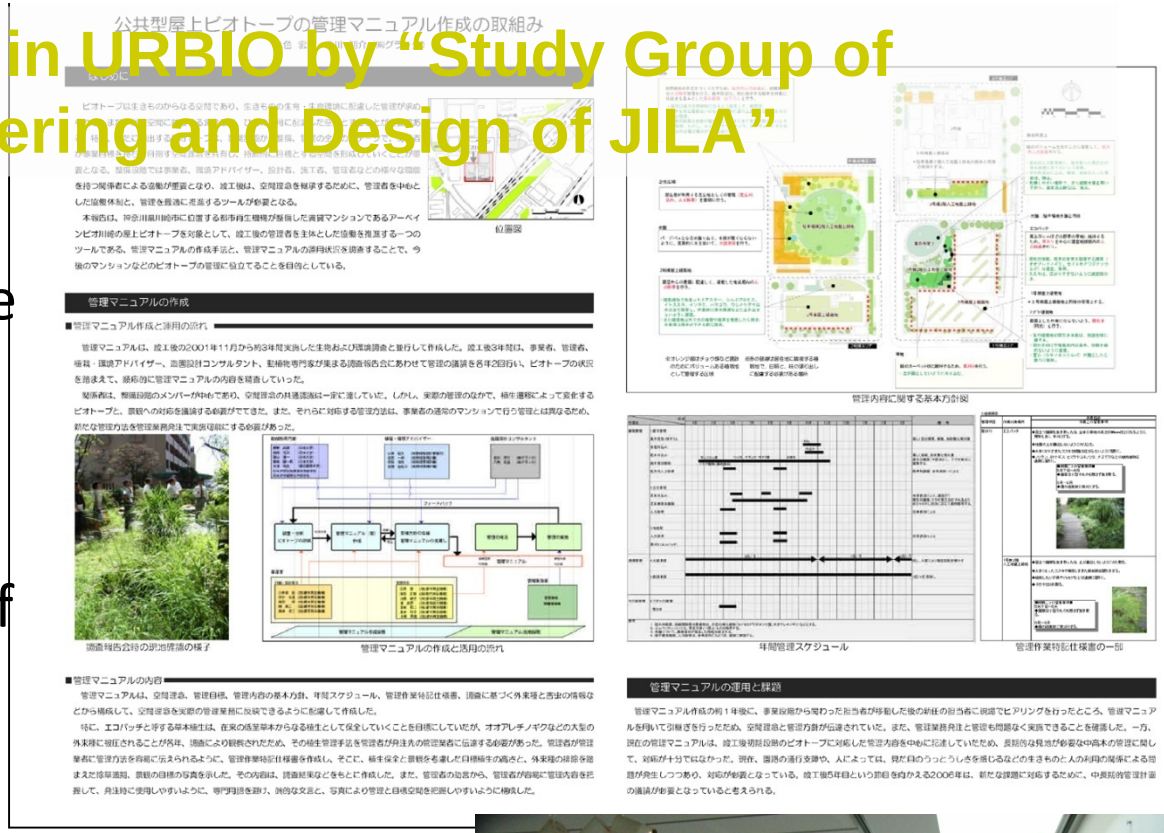
Overview :

- **Aims to advance scientific and technological communication and cooperation on the landscape architecture, designed to contribute to the development of landscape architecture and social progress.**
- **Founded in 1925: 2,703 members** http://www.landscapearchitecture.or.jp/dd.aspx

Efforts to biodiversity

1. **Presentation, Intensification and systematization of research results**
2. **Mini Forum, Research issues Excavation by the Research Committee**
3. **Student's ideas competition for training the next generation**
4. **Recommendations to the Government of Japan, in the process of developing National Biodiversity Strategies (Conducted in January 2007, will be implemented in January 2010)**
5. **Recommendations for public comment a proposed post-2010 targets of the Government of Japan (November 2009)**
6. **Participation and helping of the formulation of "green master plan" and "regional biodiversity strategies" by local governments.**

Project Exhibition in URBIO by “Study Group of Ecological Engineering and Design of JILA”



●We are going to hold the project exhibition about the practical and academic ecological design for conservation of biodiversity in urban areas.

●This project will exhibit some technologies of Ecological Engineering and Design consulted by us on actual projects.

● We hope it will be a meaningful opportunity for developing and sharing the technologies of symbiosis with wildlife.

Expectations to URBIO

- **Strengthening of cooperation between the parties sharing the latest information through an international exchange**
- **Contribute to the development of academic research through the discovery of new research on biodiversity issues in the city**
  For central and local government, reflecting research results to policymakers and the appeal of the importance of urban biodiversity
- **Assistance to strengthen local governments by accumulation of good practices**

Toward deepening the results of URBIO

・The International Symposium

Date: 22 May 2010 （International Day for Biological Diversity ）

Venue: Meijo University: Nagoya http://www.meijo-u.ac.jp/english/index.html

・The 12th Landscape Architectural Symposium of Japan, China and Korea
Main Theme： New Challenges for Sustainable Landscape -Local wisdom and new strategy to live in a vernacular landscape

Date: From 29 to 31 October 2010

Venue: Yokohama Kaikoh Kinen Kan (Yokohama Port Opening Memorial Hall）: Yokohama

Urban Green Tech Japan

- The first international horticultural exposition in Asia "The International Garden and Greenery Exposition" was held in 1990.
- The philosophy behind this exposition was to capture the relationship between flowers, greenery and man in his/her daily life and thus look towards creating an affluent and comfortable society in the 21st century.
- The Organization for Landscape and Urban Greenery Technology Development of Japan was set up in November 1990, to continue developing the philosophy.

demonstration experiment

Bio Lung

Our high-tech landscaping technologies

A greened wall 150 m long and 12 m high, Approx. 200 species of 200,000 flowers and trees were planted over a greening area of approx. 3,500 m2 in EXPO 2005 AICHI, JAPAN. The temperature of the greened wall surface was lower than the non-greened wall surface by 7˚C at maximum.

OUR SERVICES

I Research, Study and Technological Development
II Evaluation of Technologies
III Technological Development through Dissemination
IV International Cooperation and Research
V Support for Research Study
VI Furthering the Dissemination of Technologies

Thermal image taken using infrared thermo-camera: Comparison of surface temperatures A (structure roof), B (structure wall), C (woodland) (27 Jul. 2006, 12:50 p.m.)

Our Recent Activity

7 December 2009

Request letter for the United Nations Framework Convention on Climate Change Conference of Parties 15 (COP15) and Chapter 5 Meeting of the Parties to the Kyoto Protocol (COP/MOP5)

Full text is in http:// www.greentech.or.jp/

Request letter’s outline

Urban Green Tech Japan

Our missions are the mitigation of and adaptation to climate change, protection of biodiversity and improvement of the urban environment. To solve these environmental issues, it is important to take appropriate strategies for potential urban growth.

Our objectives are as follows

3. There is a close relationship between global climate change and biodiversity loss: when the climate changes, particular species may disappear in their current habitat and other species may replace them. On the other hand, biodiversity management can play an important role in mitigating climate change and reducing its impacts. Moreover, strategies for integrating biodiversity management and climate protection may be beneficial for cities and local authorities, especially in urban areas where populations and various functions converge. 1.2.4.are omitted.

Natural Environment Coexistence Technology Association (NECTA)

public-interest corporation

Network to assist activities related to
"**Law for the Promotion of Nature Restoration**"
(2002). Research & Development on:

- Technologies for conservation and restoration of nature
- Adaptive management technologies
- Technologies for the good relationship between man and nature
- EIA technologies in the filed of natural environment.

Natural Environment Coexistence Technology Association (NECTA)

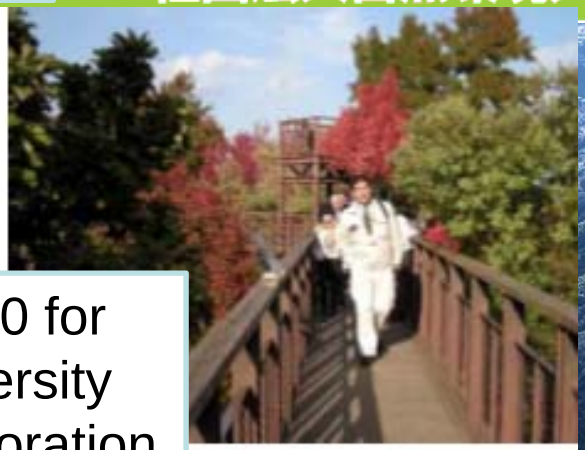
Research and Development

NECTA

Natural Environment Coexistence Technology Association

社団法人自然環境共生技術協会

Workshop and training course



NECTA supports URBIO 2010 for better contributions to biodiversity conservation and nature restoration

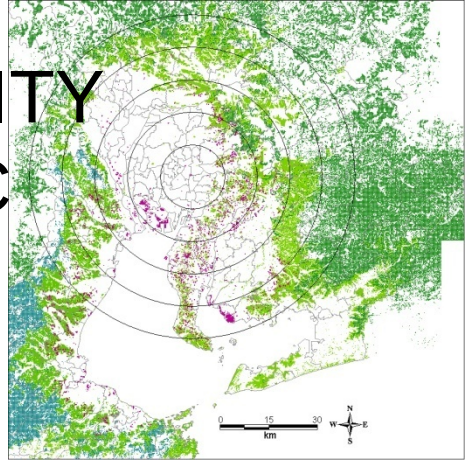
Publication: “Come back nature!”

“Guidelines for Nature Restoration Projects”
based on the R & D during 2002-6.
Whole processes of nature restoration from concept to realization; planning / design / construction / maintenance / monitoring / project assessment

CHUBU（Central）Chapter of　the Japanese Institute of Landscape Architecture（JILAC）

Co-Chair: Tadayoshi INOUE

The Commitment to BIODIVERSITY
Before the launching of JILAC



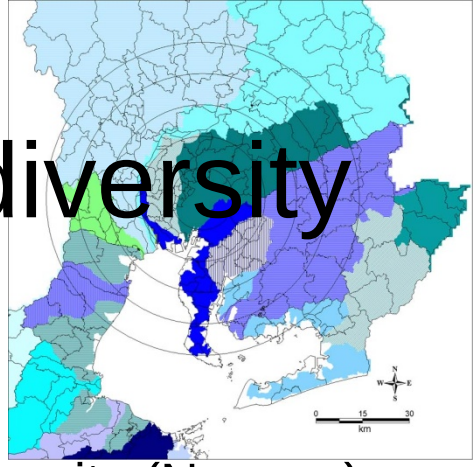
- Publication "symbiosis with nature" :2001
- Research on symbiosis with nature and Recommendations to the EXPO

(Tokai Regional Association of landscape architects).

JILAC and Biodiversity

- Through the Research Conference in the annual convention of the chapters, many research on biodiversity, good examples in this region have been published.
- Participation and helping of the formulation of ” green master plan” and ”regional biodiversity strategies” by local governments.
- Proposal for insert the Biodiversity‘s point to ”The National Spatial Plan” of ”The Chubu Regional Plan” .

Recent Symposium on Biodiversity



2008 Annual Meeting, Symposium

Date: 2008.11.9

Venue: Arts and Engineering Faculty, Nagoya City University (Nagoya)

Keynote: **“Biodiversity oriented urban design toward low carbon revolution**”

Prof. Dr. Yukihiro MORIMOTO（Kyoto University）

Special Presentation：**“Landscape as a projection of biodiversity”**

Prof. Masayuki WAKUI（Chubu University）

Introduction of best practices

2009 Annual Meeting, Symposium

Date: 2009.10.11 Venue: Shizuoka University of Culture and Art (Hamamatsu)

Keynote: “Cities and biodiversity”

Prof. Dr. Mahito KAMADA,Tokushima University(Tokushima)

Goods & services
Convenience

Economy

Beautiful nature
Clean air and water
Safe and security

Esthetics

Next generation
Biota
Developing countries

Ecology

Production,
Development

Pollution abatement
Rehabilitation tech.

開発派 ← → 環境派

Development

Technology
Oriented Society

Environment

Low carbon technology
Nature restoration tech.

Current generation
（Humanism）

Next generation
（Gaia）

Mitigation,
Adaptation

Biodiversity
Oriented Society

Graduate School of Global Environmental Studies,
KYOTO UNIVERITY

Co-Chair: Yukihiro MORIMOTO

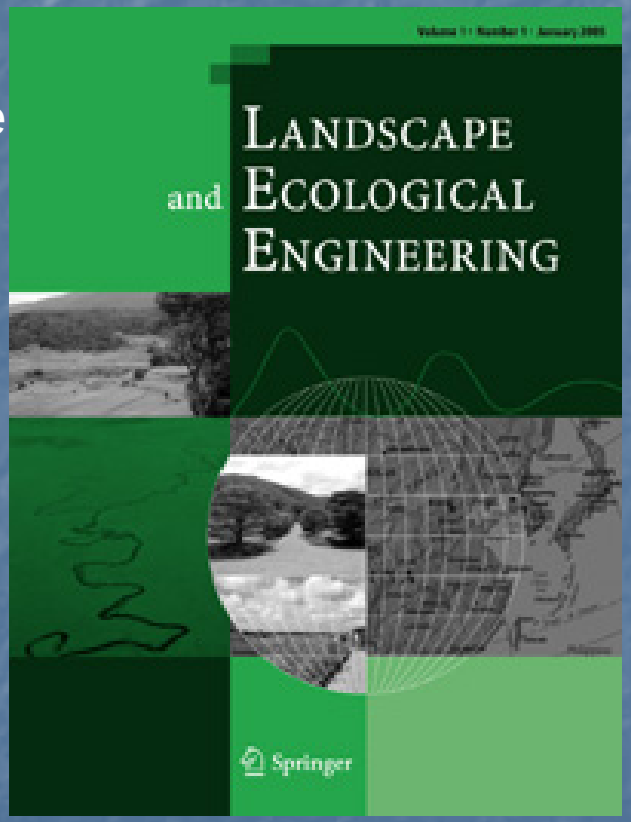
International Consortium of Landscape Ecological Engineering
three societies from Japan, three societies from Korea, one from Taiwan.

Description

Landscape and Ecological Engineering is published by the International Consortium of Landscape and Ecological Engineering **(ICLEE)** in the interests of protecting and improving the environment in the face of biodiversity loss, desertification, global warming, and other environmental conditions.

The journal invites original papers, reports, reviews and technical notes on all aspects of conservation, restoration, and management of ecosystems.

It is not limited to purely scientific approaches, but welcomes technological and design approaches that provide useful and practical solutions to today's environmental problems. The journal's coverage is relevant to universities and research institutes, while its emphasis on the practical application of research will be important to all decision makers dealing with landscape planning and management problems.



Special Edition of “URBIO 2010” will be published.

The Nagoya Declaration - URBIO 2010 (Zero draft 091225)

Cities could save the earth

1. Preamble

What is URBIO?

Why cities? 'State of World Population 2007'

Experiences and solutions in Asian countries.

2. The importance of urban biodiversity

What is discussed at URBIO 2010? Studies, researches and good practices.

3. Challenges for the future

How to stop net loss of biodiversity, improve ecosystem services? Framework and commitment for the future.

2. The importance of urban biodiversity

- To study and assess biodiversity and ecosystem services in urban areas
- To succeed and create cultures and traditions of urban biodiversity
- To improve policy and design inter-linkage between biodiversity and climate change
- To study and assess the relationship between urban biodiversity and human welfare
- To plan and manage for sustainable cities
- To establish environmental education for sustainability
- To design cities taking advantage of its biodiversity

urban biodiversity

- Cities are strongly and anticipatively affected by climate change and invasion of alien species, on the other hand, cities cause these problems.
- Ecosystems, such as forests around temples and shrines still exist in cities in some cases. Secondary ecosystem in suburbs, such as *Satoyama* which is traditional household woods for fuel and compost, are important resources of biodiversity in cities.
- Although urban ecosystems tend to be fragmented, it is possible to create an ecological network if it is carefully designed.
- Human life in cities is strongly affected by urban biodiversity and urban people are benefited by ecosystem products from the world.
- Biodiversity and ecosystems in cities are important since they are the elements and places that people can experience a nature, and provide us opportunities for environmental education.
- Prosperous cultures of gardens and horticultural plants have been developed as biodiversity in cities and they have been well inherited.

3. Challenges for the future

- To **expand green areas** in cities and improve the quality of habitats for biodiversity, and these areas should be kept **on adaptive management**.
- To promote ecological networks in cities and organize a **larger ecological network** (e.g. watershed) through cities.
- To promote greater **public awareness** on ecosystem services including historical change of urban biodiversity and extent of ecological network as well as **spiritual and cultural benefits.**
- To carry out strategic research for policy and design inter-linkages between **climate change and urban biodiversity**.
- To make **governance for local biodiversity** to coordinate researchers, technicians, landscape architects, policy makers and citizens in order to apply research outcomes to urban design.
- To promote the **education** of landscape design and environmental education to conserve urban biodiversity and improve ecosystem service.
- To re-evaluate biological and **cultural** diversity, such as gardens and horticultural plants, make full use of them for a new design and develop their new greening technologies.

- Academic associations, networks and professional groups should support **international networks** related to importance of urban biodiversity and benefits of ecosystem service.
- Organizations in each country and international organizations should support the establishment of **information platform** so that research of conservation and restoration of biodiversity and their activities can be promoted with a wide range of cooperation.
- A national government and departments in each country should make the systems that local authorities can set up their **targets** of urban ecosystems and ecosystem services and they can supervise them.
- Local authorities should make plans for conservation of biodiversity so that biodiversity loss could be stopped and improve ecosystem services together with **citizens and corporations**.
- Local authorities should **design cities**, which integrate sustainability of environment (e.g. climate change, energy saving, resource saving, safety of foods, disaster prevention of city, improvement of water quality) and protection of biodiversity.

Mid-Conference Excursion

12 mid-conference excursions on May 20, 2010 under the main theme of "*Urban Biodiversity in the Ecological Network*"

A. Higashiyama Forest Hiking

B. Todagawa Green Park and Atsuta Shrine

C. Atsuta Shrine and The Horikawa river Cruise

D. The Shonai River and Fujimae tidal flat

E. Mt. Togoku Hiking (Squirrel conservation activity)

F. Rice planting experience

G. Aioiyama Green Park and Biodiversity Greening

H. Aqua Restoration Research Center

I. The Kiso Three Rivers

J. Satoyama and Rivers in Toyota

K. Expo 2005 Aichi

L. Kaisho Forest

Post-Conference Excursion

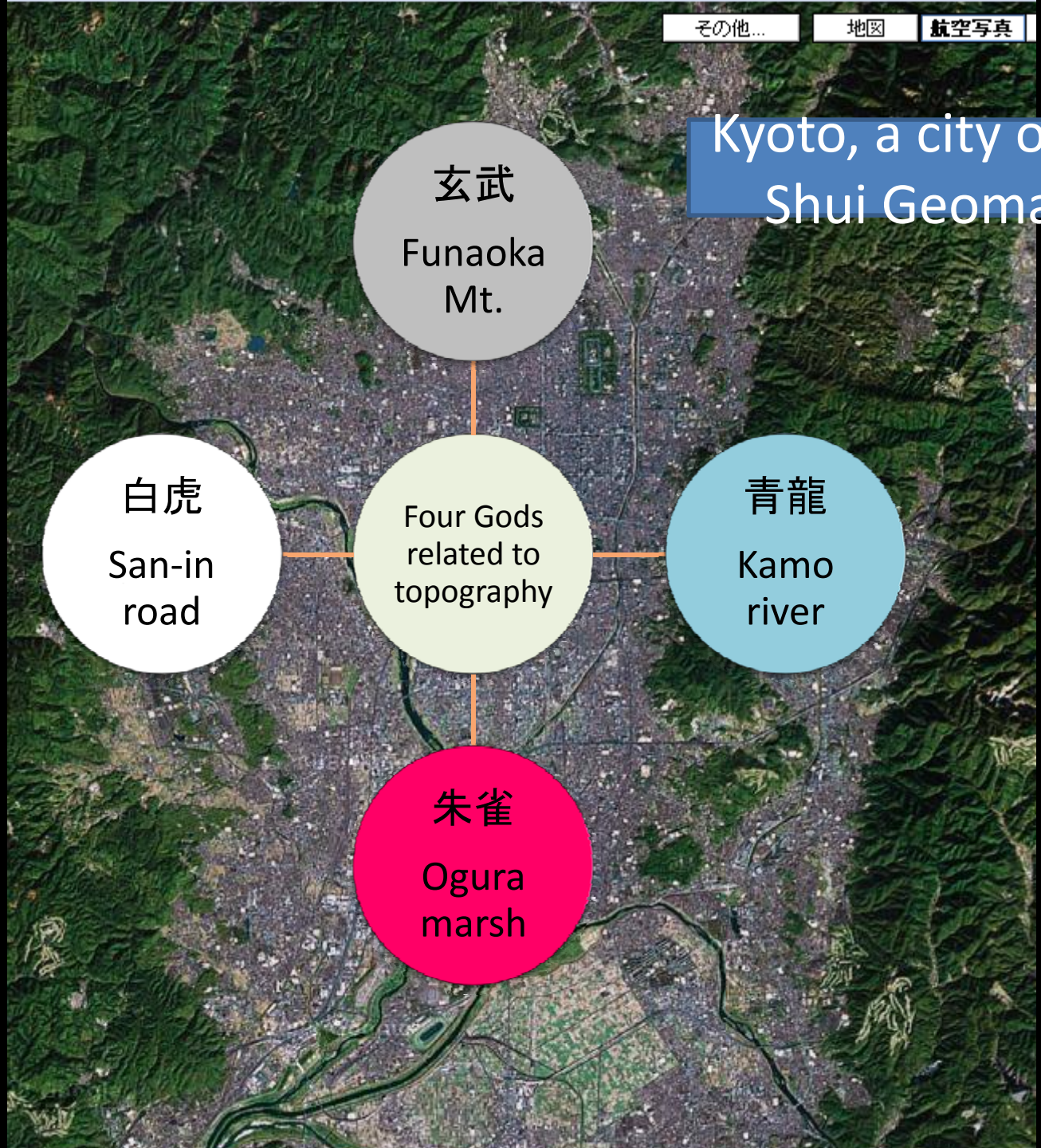
We are planning 4 post-conference excursions on May 23-24, 2010 under the main theme of *"Urban Biodiversity in the Ecological Network"*

Course 1. Kyoto, Osaka Cource

Course 2. Northern Kyoto Course

Course 3. Shinshu, Yamanashi, Tokyo Course

Course 4. Chugoku Region Course


その他...
地図
航空写真
Kyoto, a city of Feng Shui Geomancy
玄武
Funaoka Mt.
白虎
San-in road
Four Gods related to topography
青龍
Kamo river
朱雀
Ogura marsh

Umekoji Park, Kyoto, a memorial project of 1,200 years after Heian Capital.

Restored wildlife habitat, Inochi-No-Mori ori "Living Forest". Adaptive management Participatory monitoring / Adaptive management

World Heritage

Tadasu-no-mori Forest of Shimogamo Shrine, Kyoto

Ninox scutulata

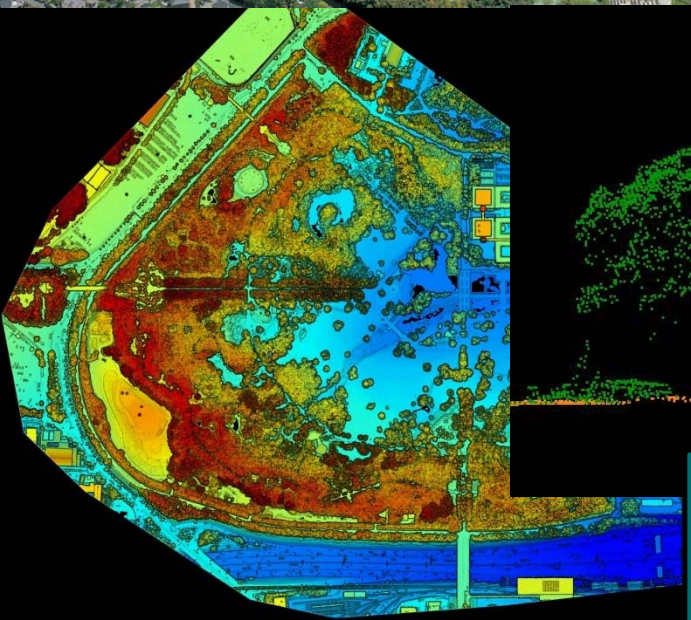
Protected natural area in Kyoto City

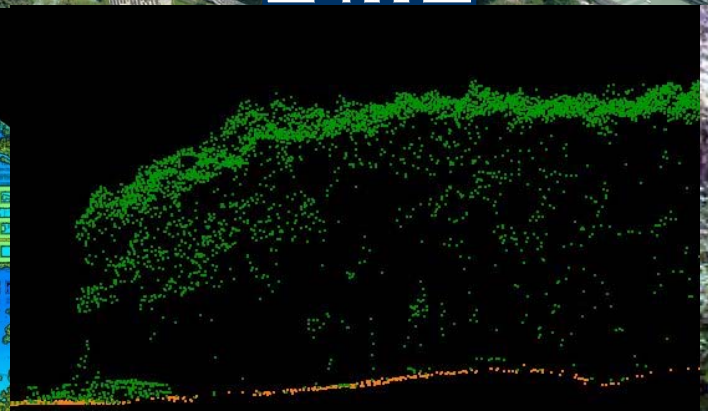
1968

1970

EXPO ‘70, 64 million visitors participated

Endangered hawk, *Accipiter gentilis,* colonized successfully after 35 years after restoration





Systematic monitoring and adaptive management for biodiversity oriented restoration


吾
知唯
足
(Water basin in Ryoan-ji temple Japanese garden, calling for ecological lifestyle)
Thank you very much for your attention!
Looking forward to seeing you at URBIO 2010!