

Sustainable Management of Tokyo Bay

Keita Furukawa Dr.(Eng.)

Tokyo Bay at a Glance (Part 2: Blue Economy)

Towards new management model with public participation

- Monitoring
 - COD distribution
 - Water circulation
 - Bio diversity
 - Ecosystem Network / EIA of Haneda Airport Extension
 - Monitoring campaign / Goby census
- Restoration
 - MLIT: sea-blue, green policy, Adaptive m.
 - MOE: Revision of Environment Basic Law
 - FA: 6th industrialization
 - TB Renaissance Project
 - TB PPP Forum
 - Cases: Shibaura-Island
- Blue economy
 - Ocean Crisis
 - SDGs
 - BE concept and Effects

Monitoring for situation understanding

COD distribution

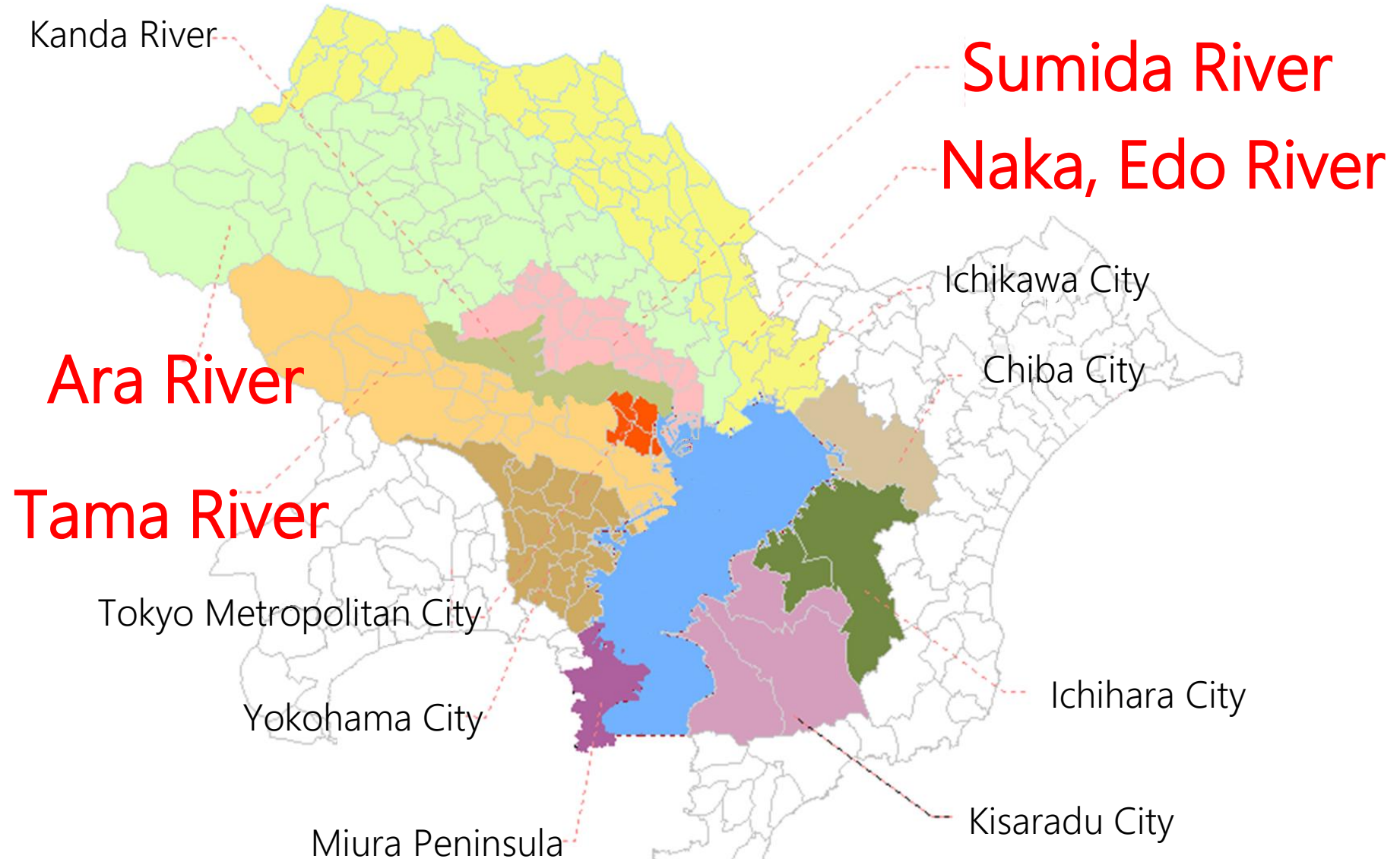
Water circulation

Bio diversity

**Ecosystem Network / EIA of Haneda
Airport Extension**

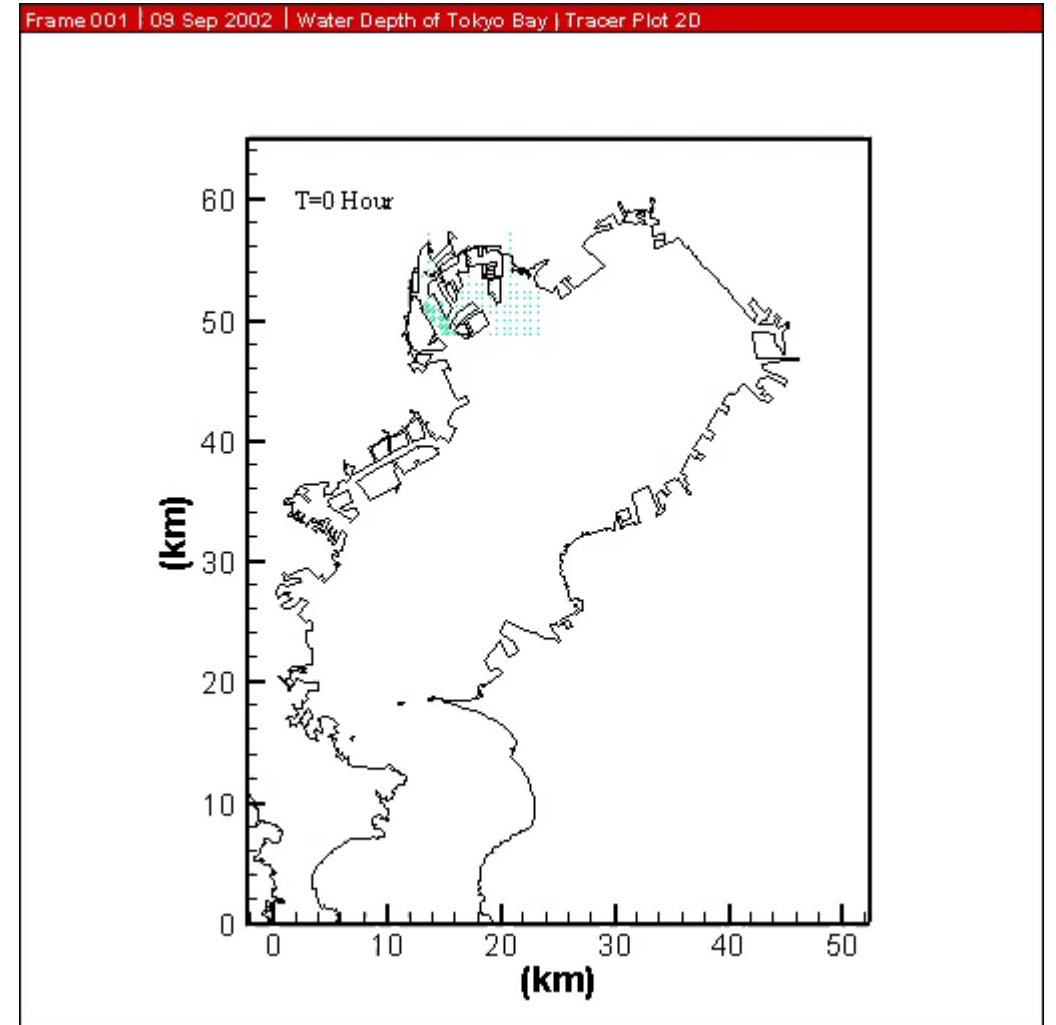
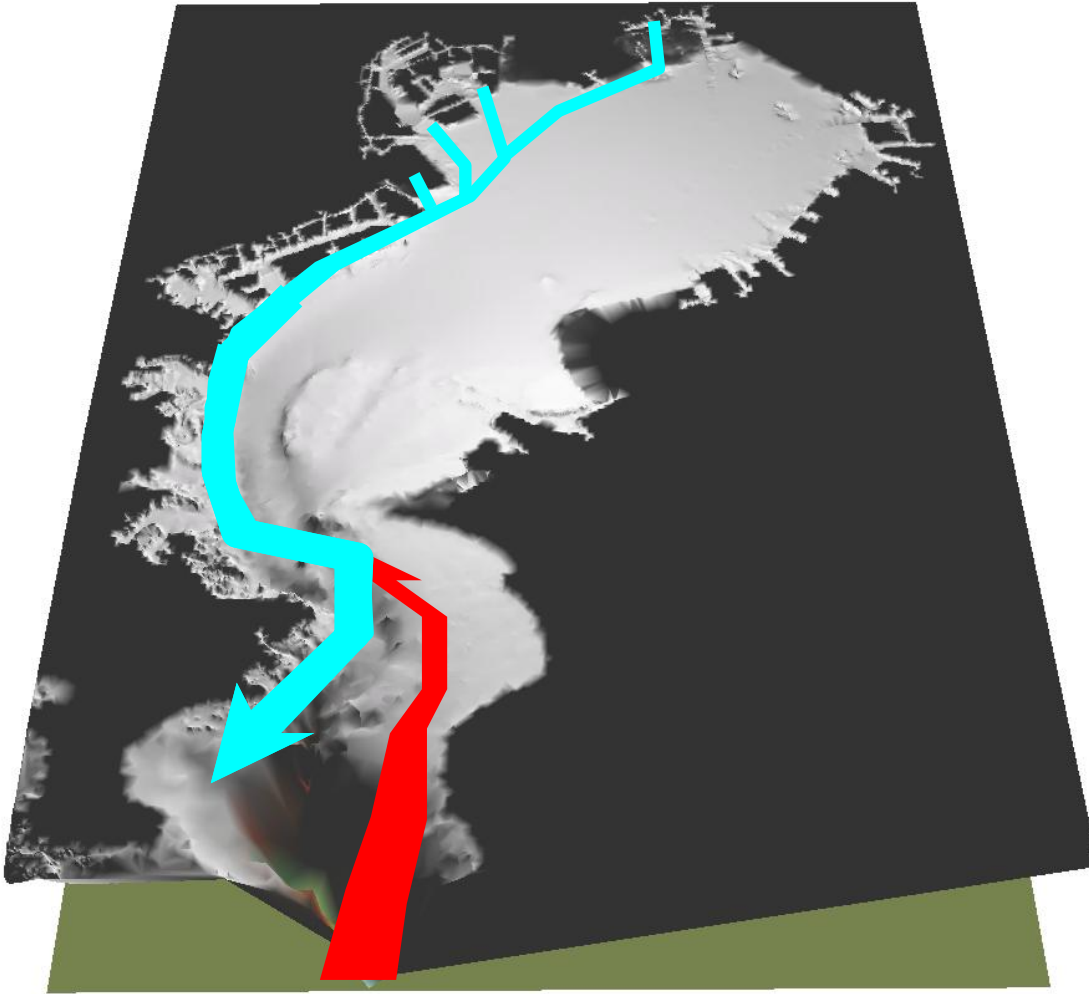
Monitoring campaign / Goby census

Tokyo Bay watershed



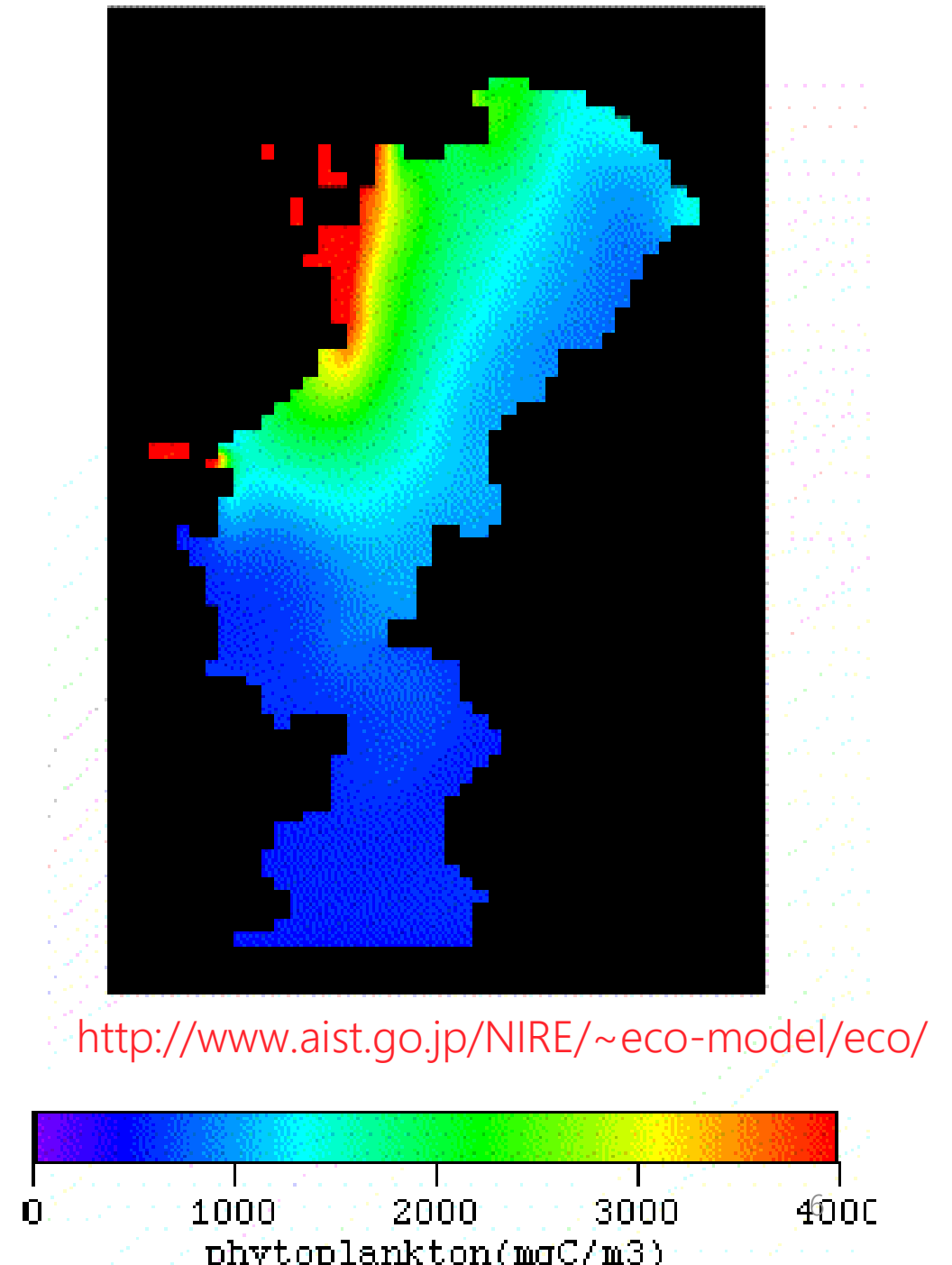
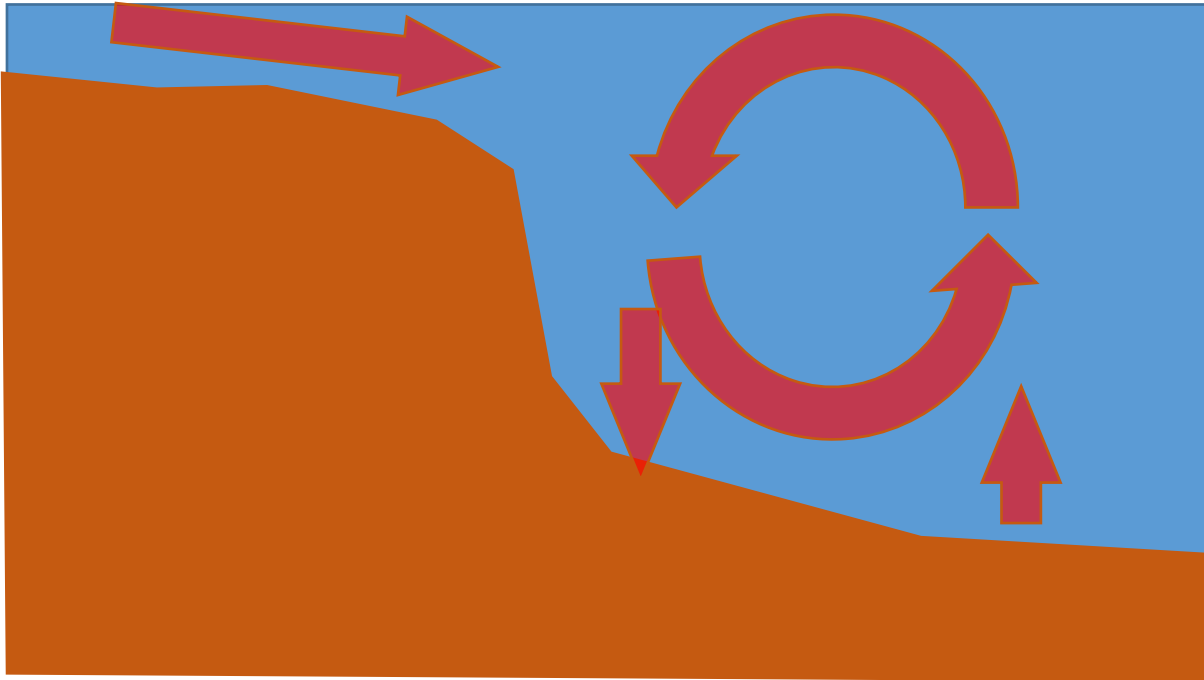
7,500 km², 26 Coastal cities, 26 million people, 1/3 industries

Physical Network: Water Circulation

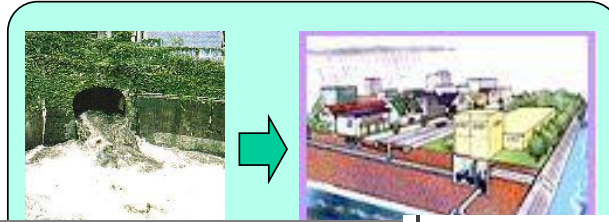


<http://www.nilim.go.jp> Nakayama (2003)

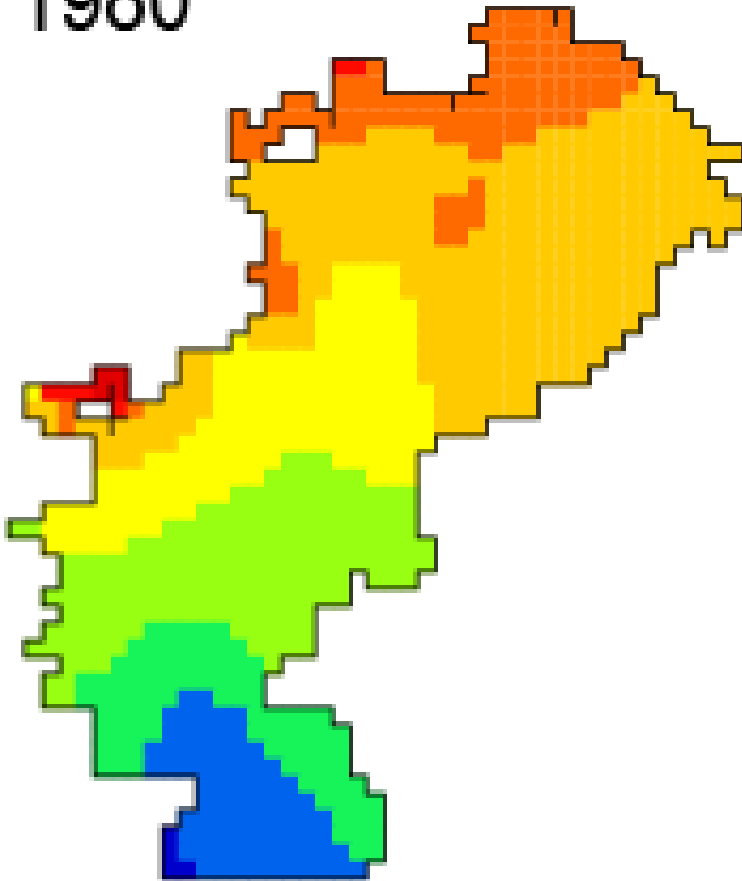
Physical & Biological Network



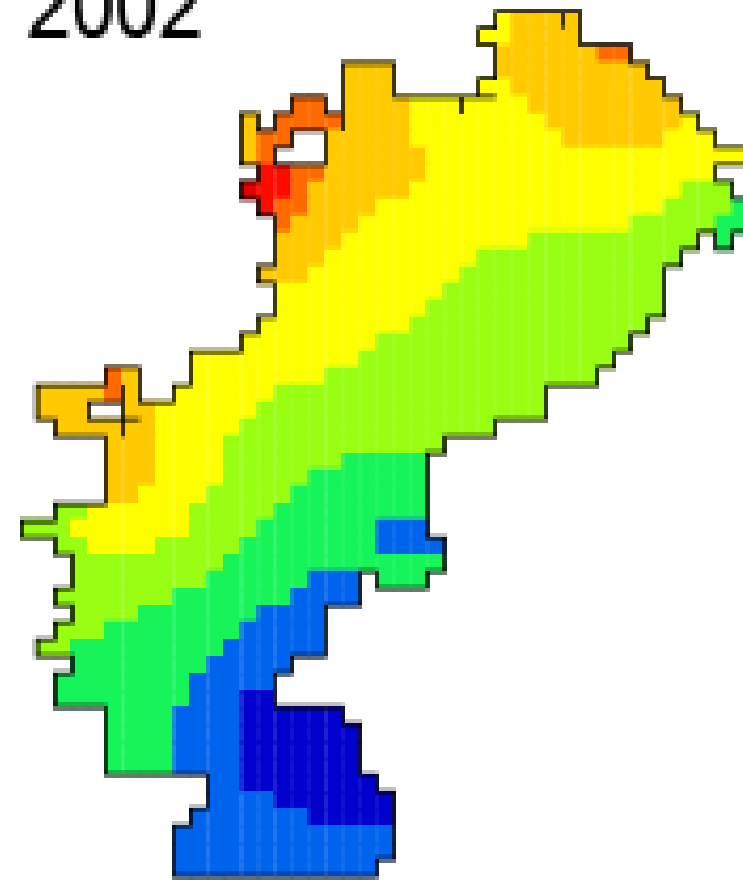
Physical & Chemical Network



1980

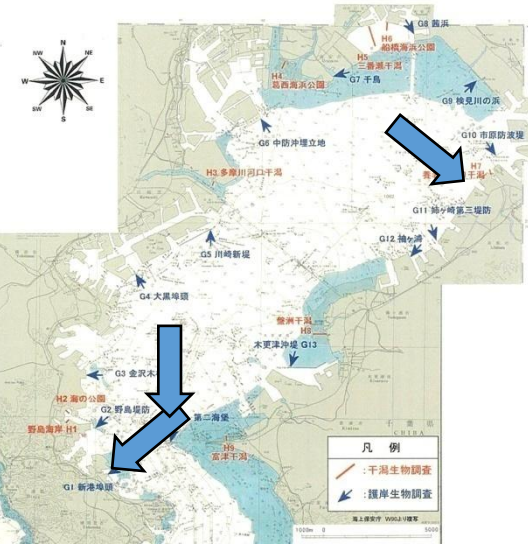
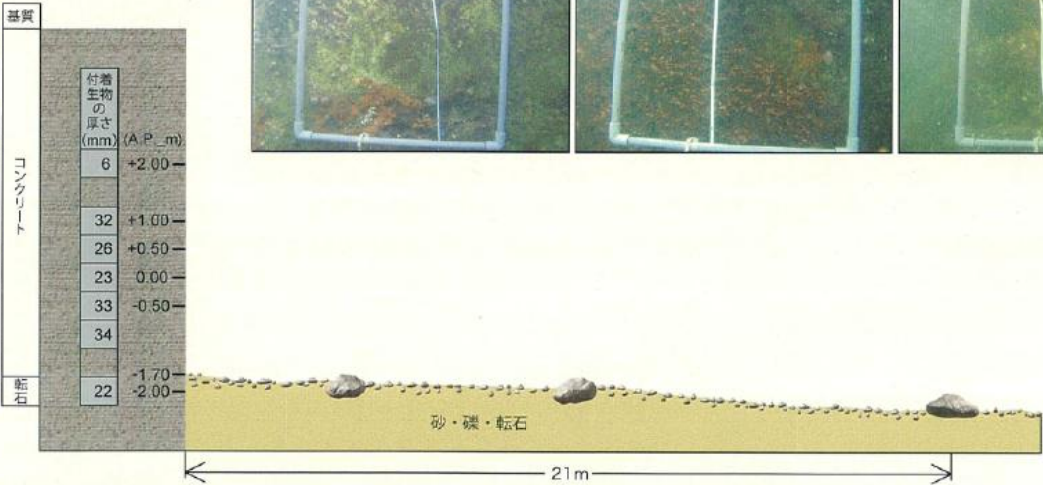
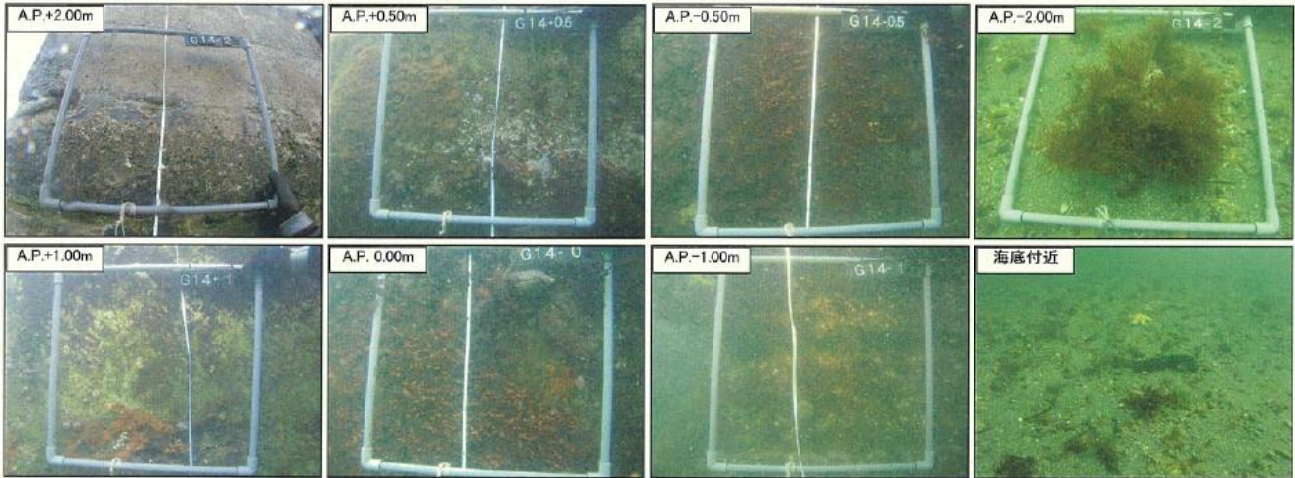


2002

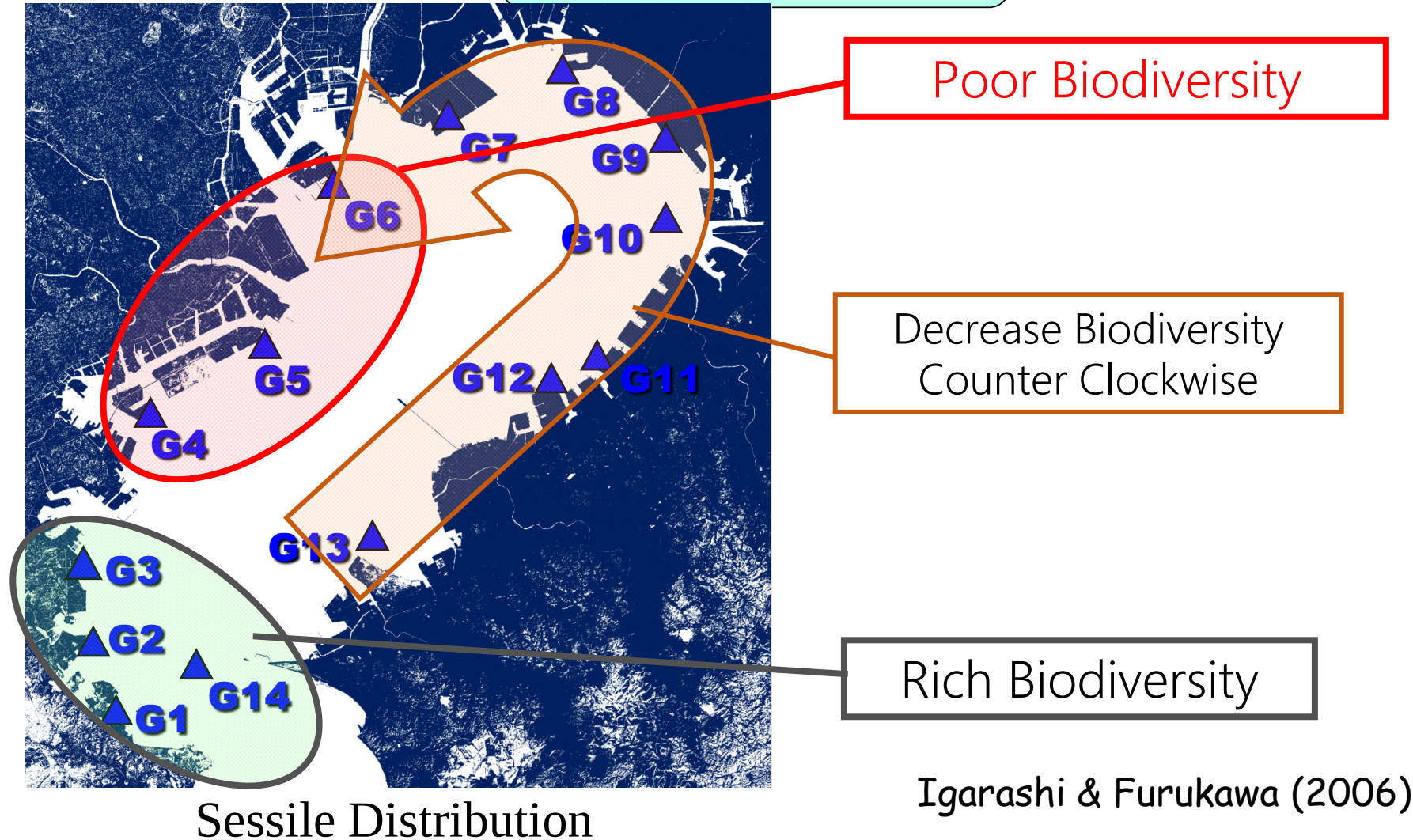


Biological Network: Sessile

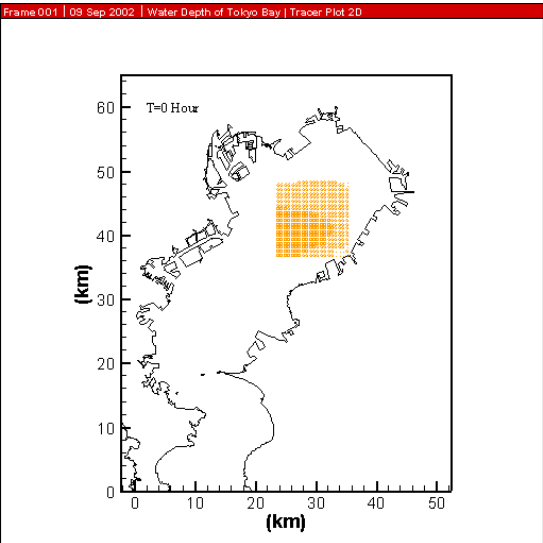
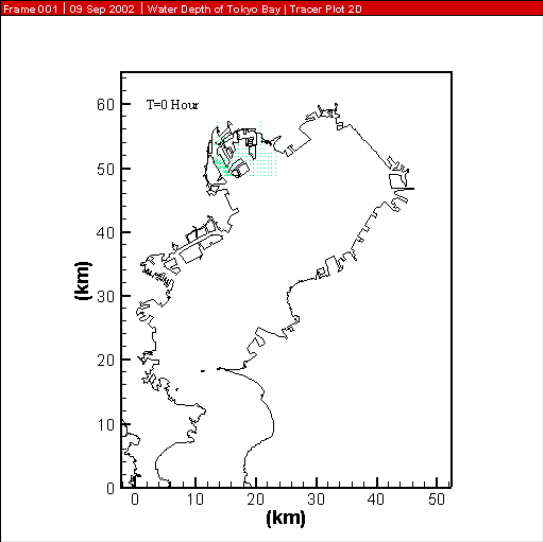
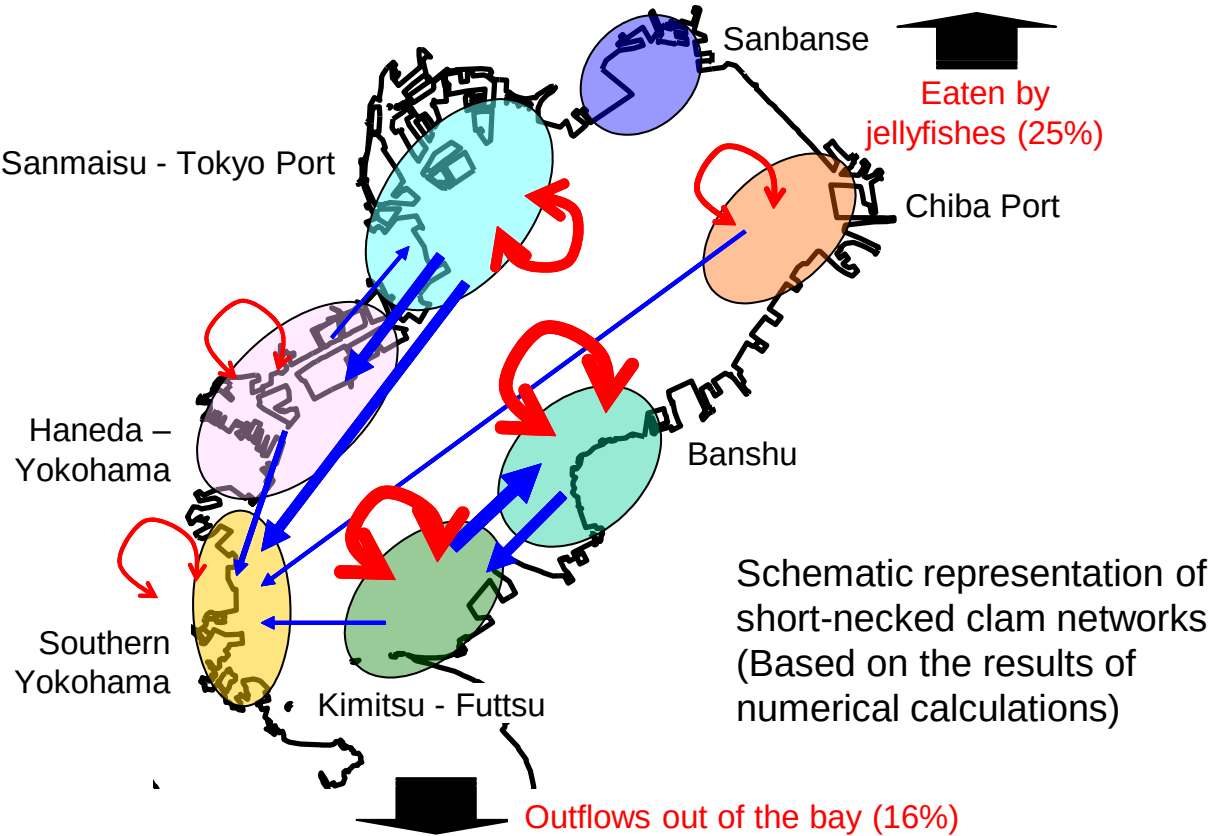
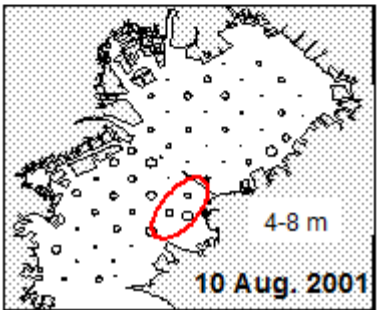
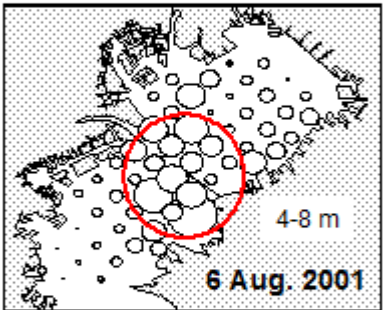
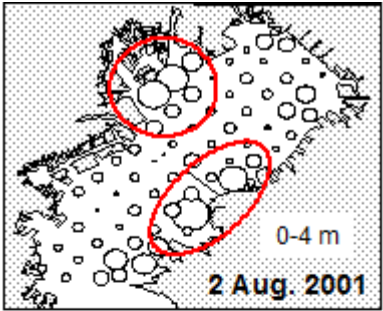
調査地点	G14
場所名	第二海堡
調査日時	平成18年3月8日 8:40
潮位	A.P.+151cm
緯度経度	35° 18.734' 139° 44.503'



Biological Network: Sessile



Ecosystem Network: Short-Necked Clam

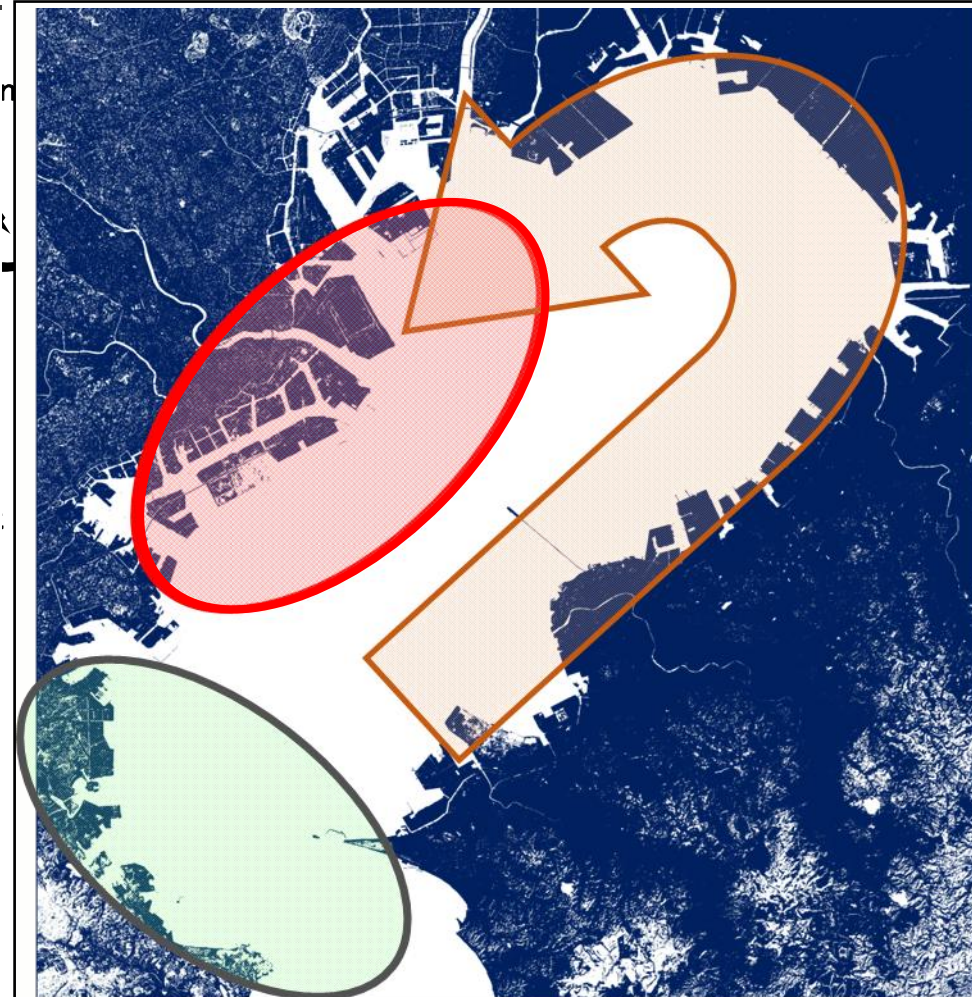
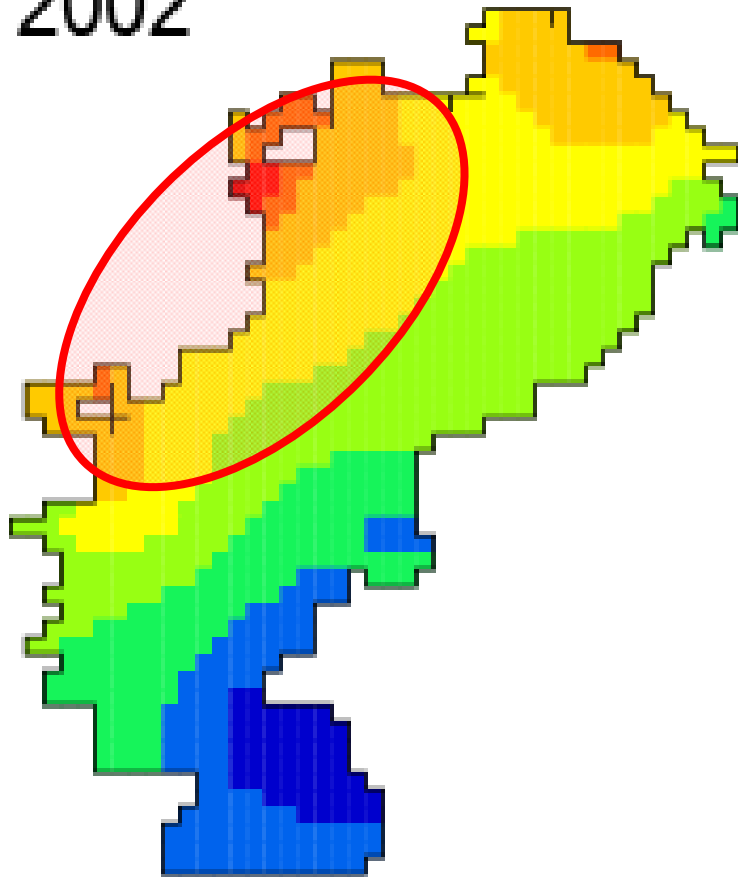


Hinata et.al (2000)

WG2: Sea



2002



Tokyo Bay Renaissance Project



Conference
(Decision Making)

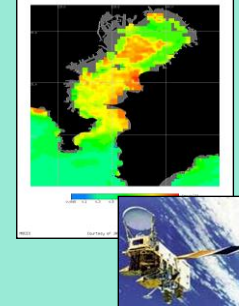
Organizing Committee

2003-2012
10 years plan

参加機関

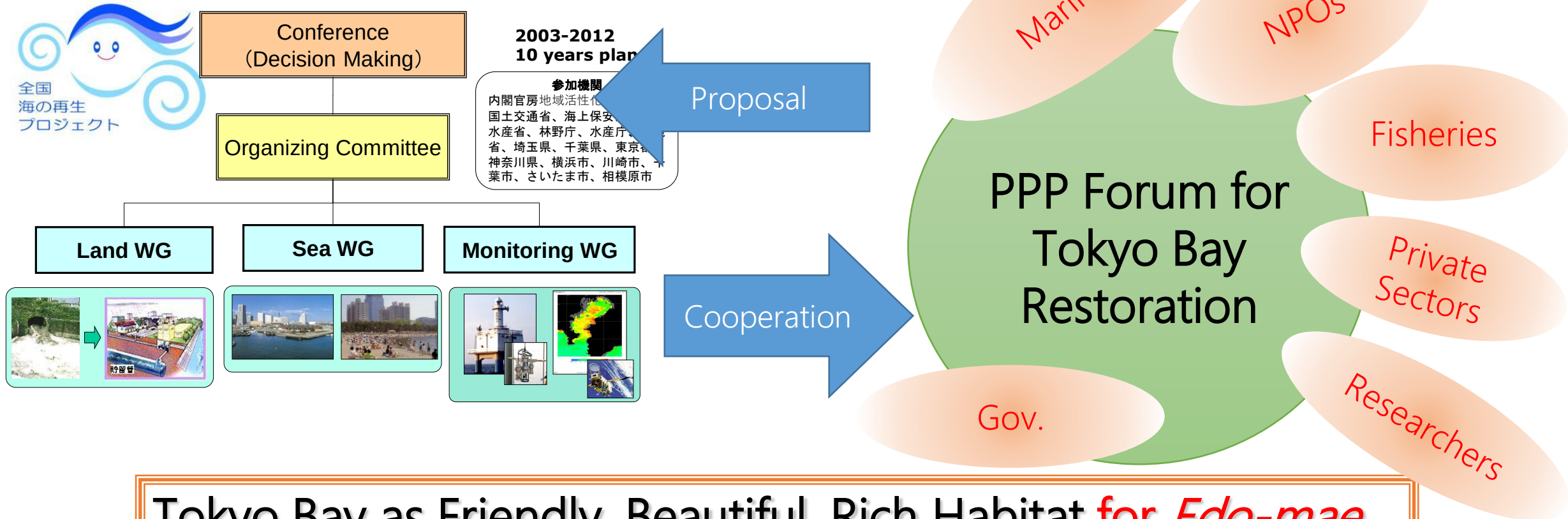
内閣官房地域活性化統合事務局、
国土交通省、海上保安庁、農林
水産省、林野庁、水産庁、環境
省、埼玉県、千葉県、東京都、
神奈川県、横浜市、川崎市、千
葉市、さいたま市、相模原市

Tokyo Bay as Friendly, Beautiful, Rich Habitat and
Comfort Play ground



Tokyo Bay Renaissance Project

The 2nd Phase (2013–2022)



Tokyo Bay as Friendly, Beautiful, Rich Habitat *for Edo-mae*
and Comfort Play ground

Tokyo Bay Festival 2014 (1,400) , 2015 (92,000), 2016 (98,000) 2017 (34,000), 2018 (105,000)



2016年オープニングセレモニー



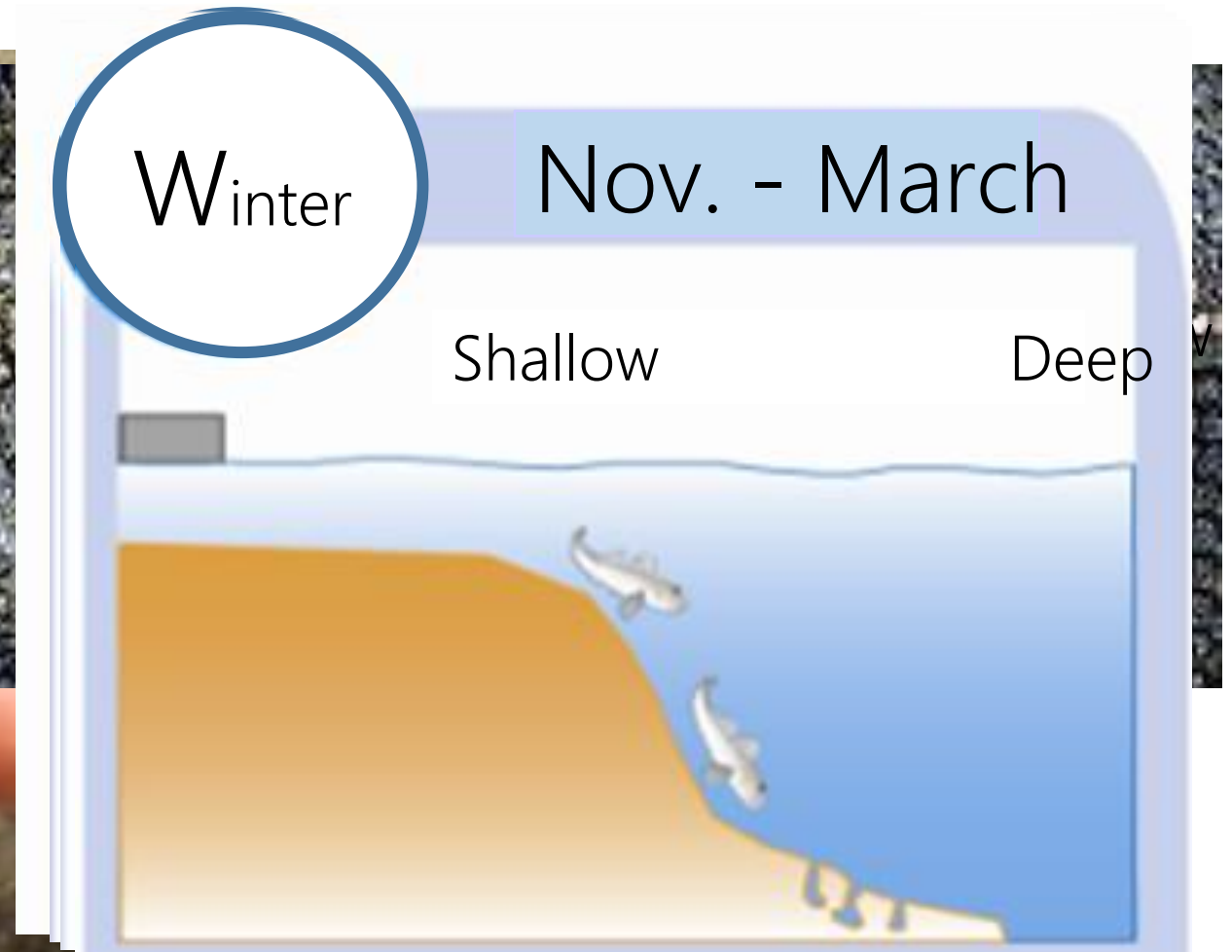
来賓・菅 内閣官房長官、石井 国土交通大臣



司会・榎太一 東京湾再生アンバサダー



Preliminary attempt of habitat census for goby with public participation



Preliminary attempt of habitat census for goby with public participation

1960s: 1 0 0 , 0 0 0 , 0 0 0 gobies

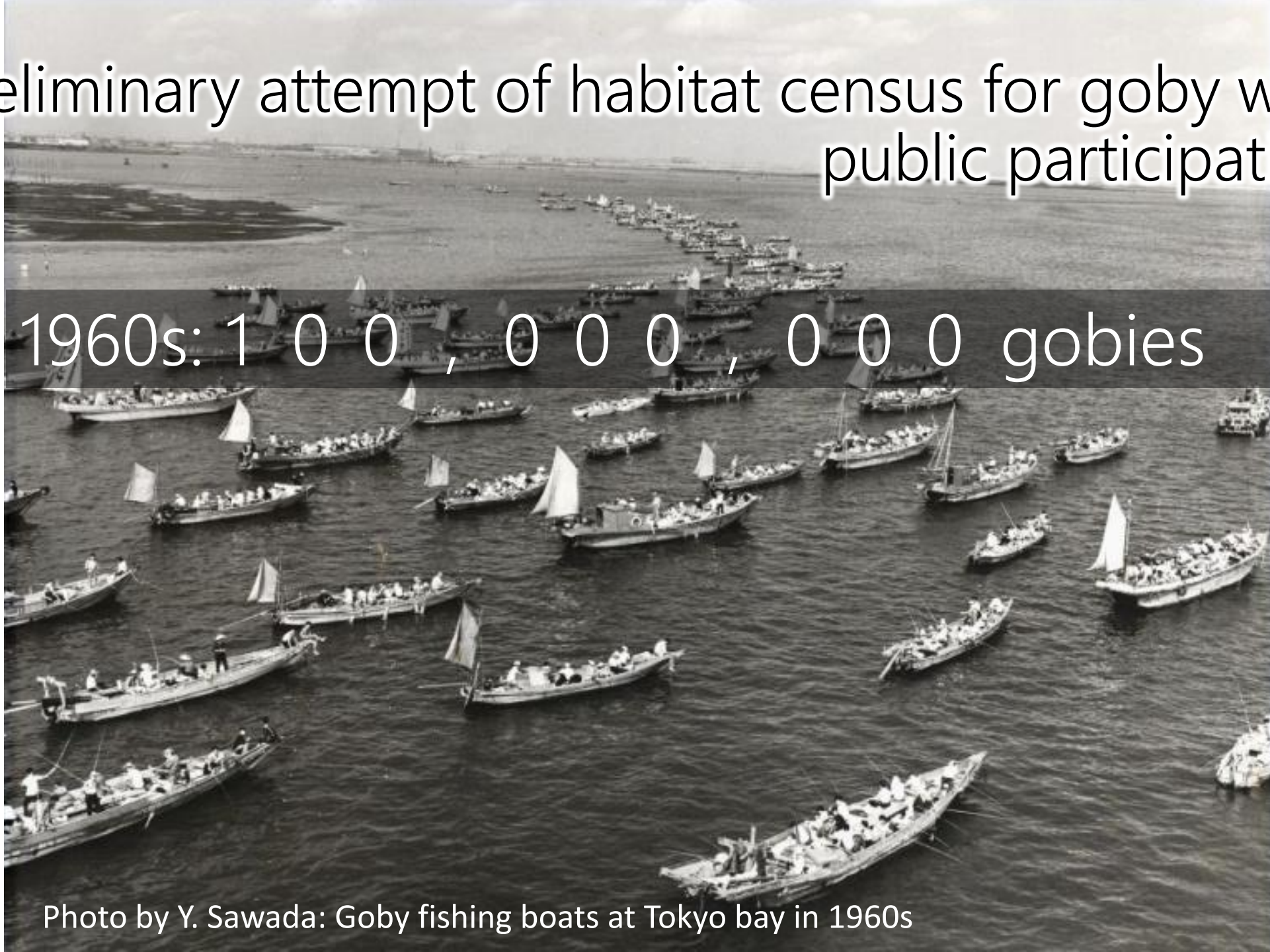


Photo by Y. Sawada: Goby fishing boats at Tokyo bay in 1960s

Preliminary attempt of habitat census for goby with public participation

1960s: 1 0 0 , 0 0 0 , 0 0 0 gobies

2000s: 1 , 0 0 0 , 0 0 0 gobies

Hiyama, 1992

Image © 2010 Digital Earth Technology
Image © 2010 GeoEye

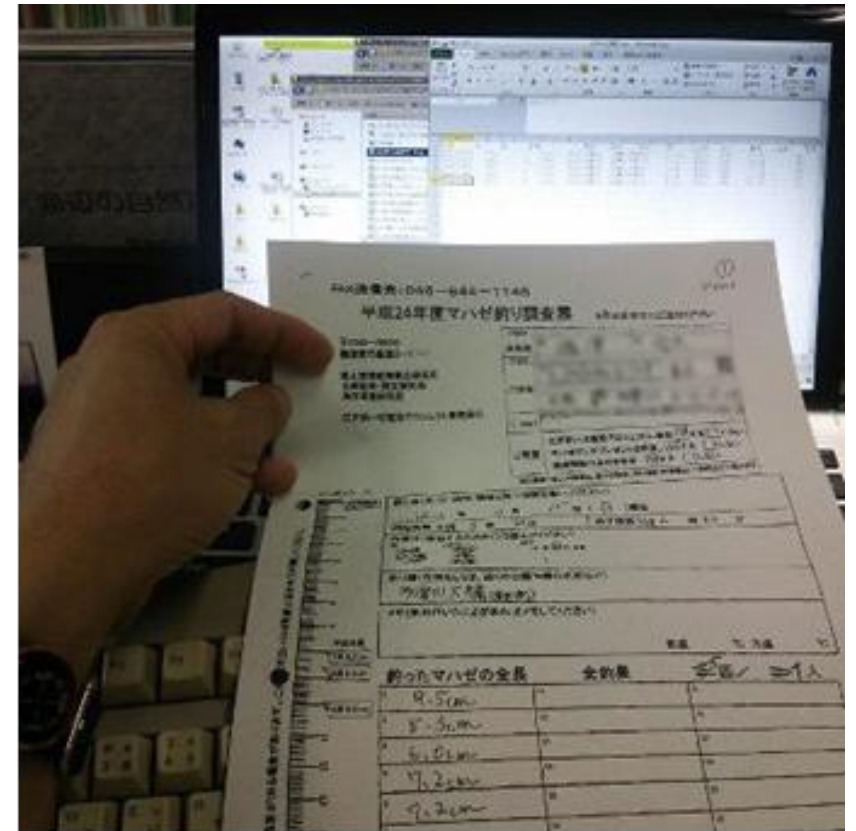
Image © 2010 DigitalGlobe

©2010 Google™

Preliminary attempt of habitat census for goby with public participation

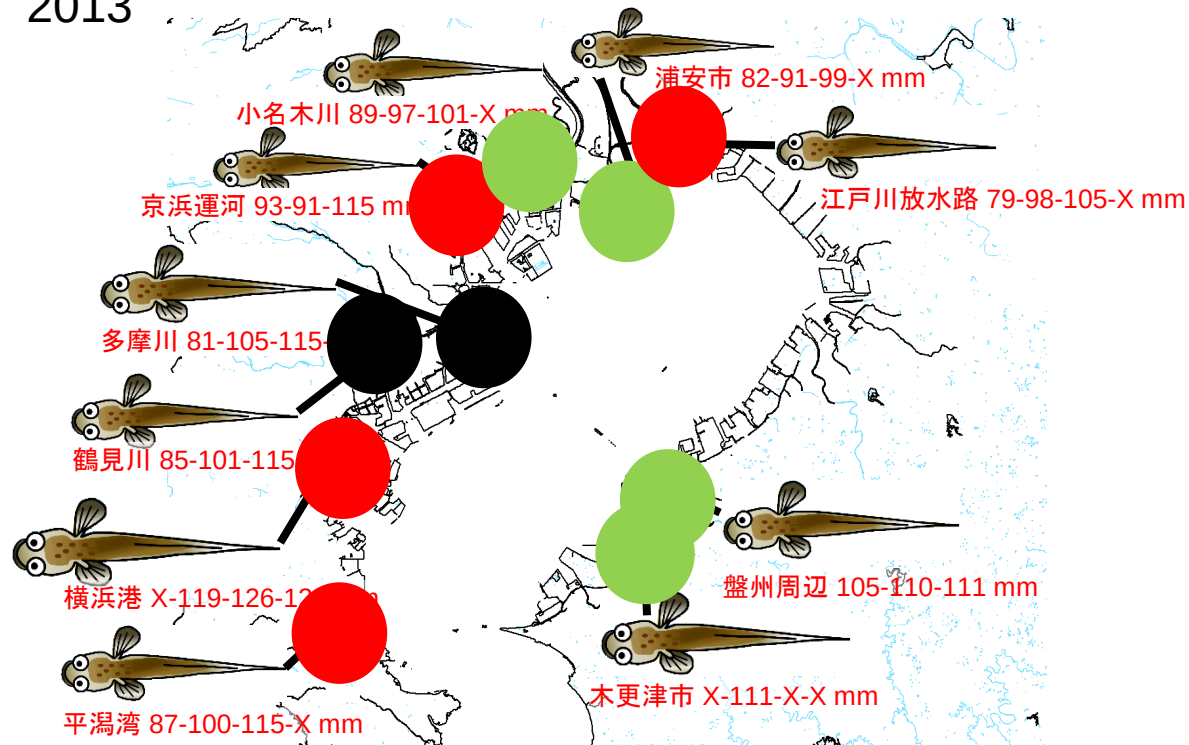


Preliminary attempt of habitat census for goby with public participation

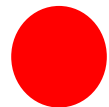
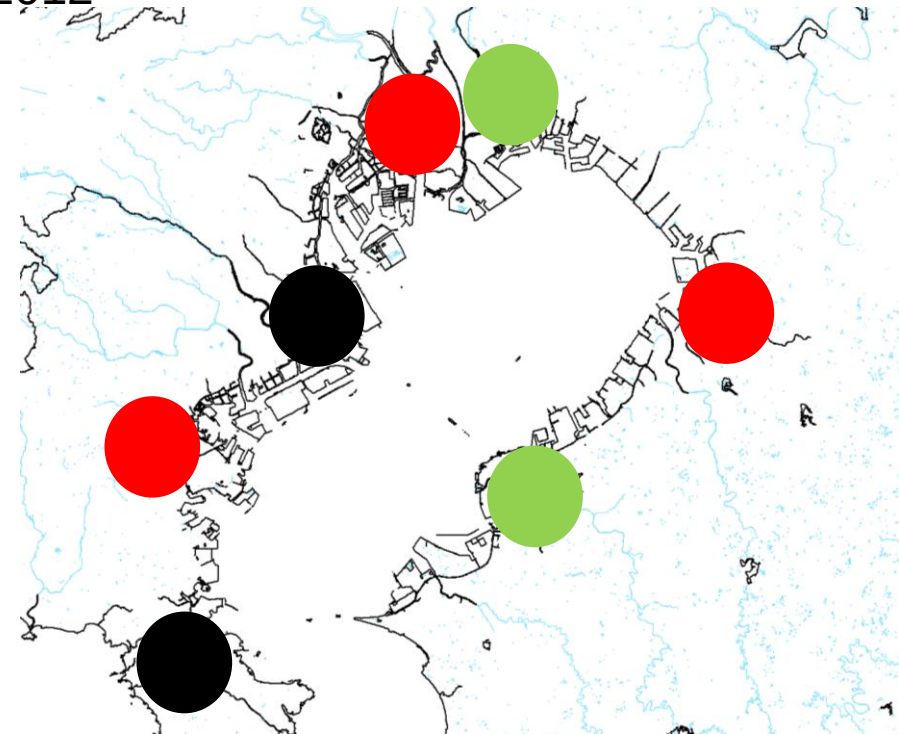


Preliminary attempt of habitat census for goby with public participation

2013



2012



Rapid Growth

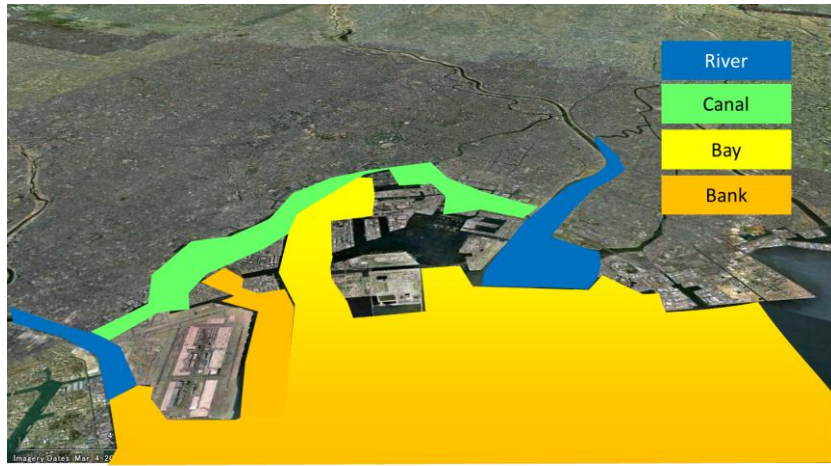


Slow Growth

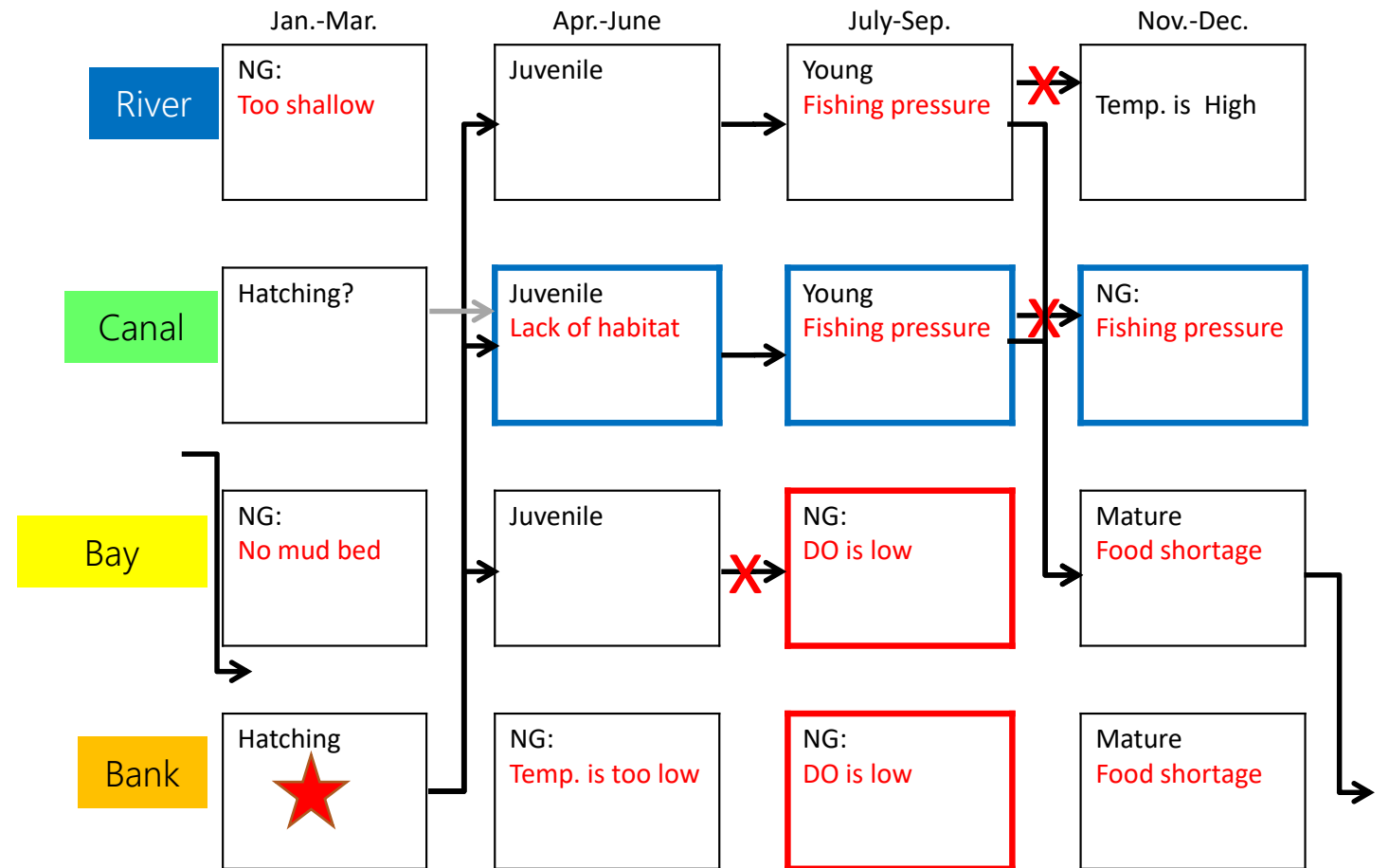


Rapid Growth but Small

Preliminary attempt of habitat census for goby with public participation



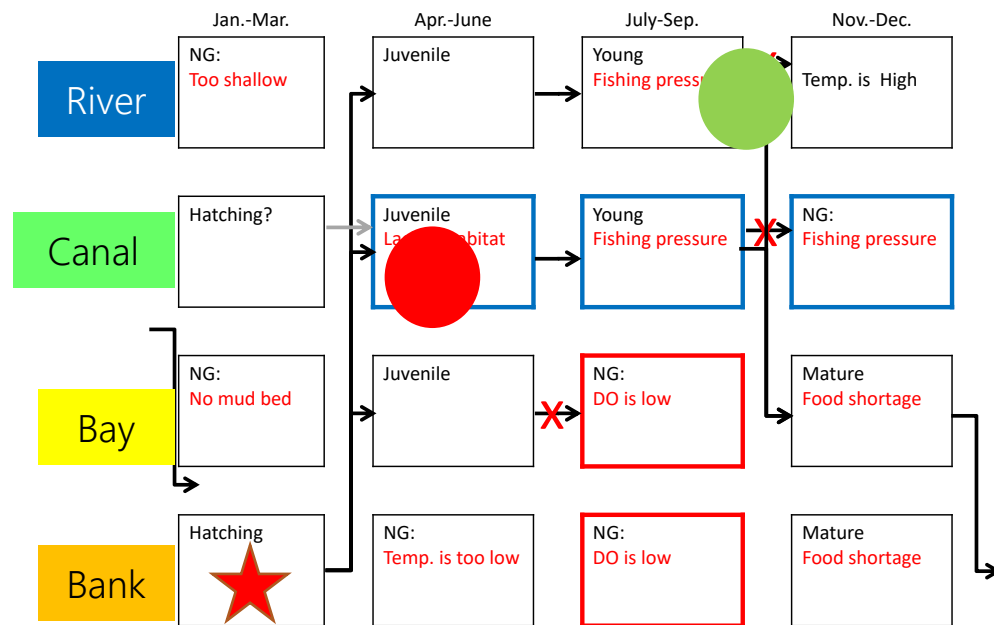
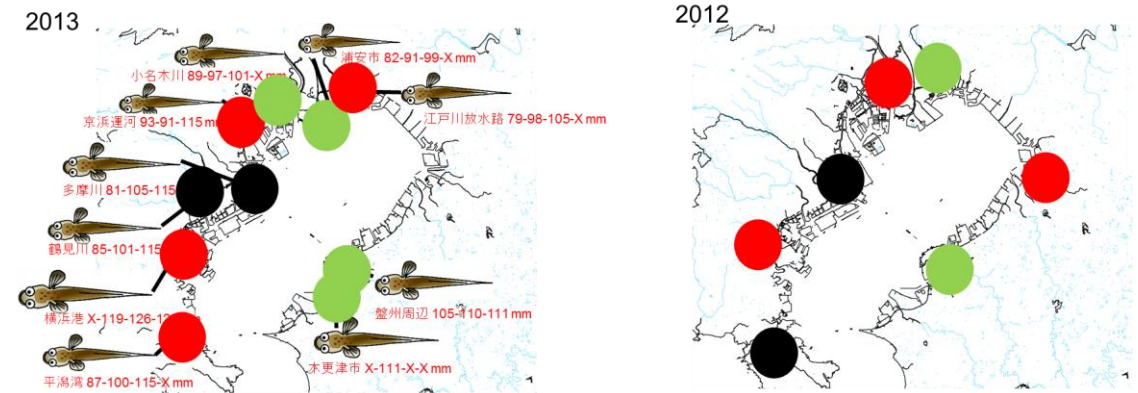
Missing Link?



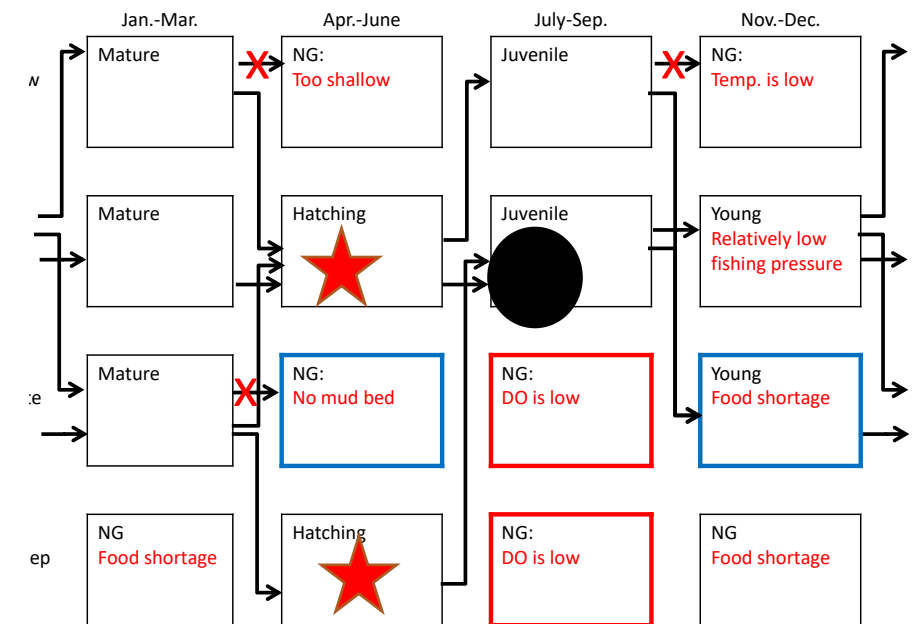
Conservative Model (Hatching at Winter)

Needs control of fishing pressure

Preliminary attempt of habitat census for goby with public participation



Conservative Model (Hatching at Winter)
Needs control of fishing pressure

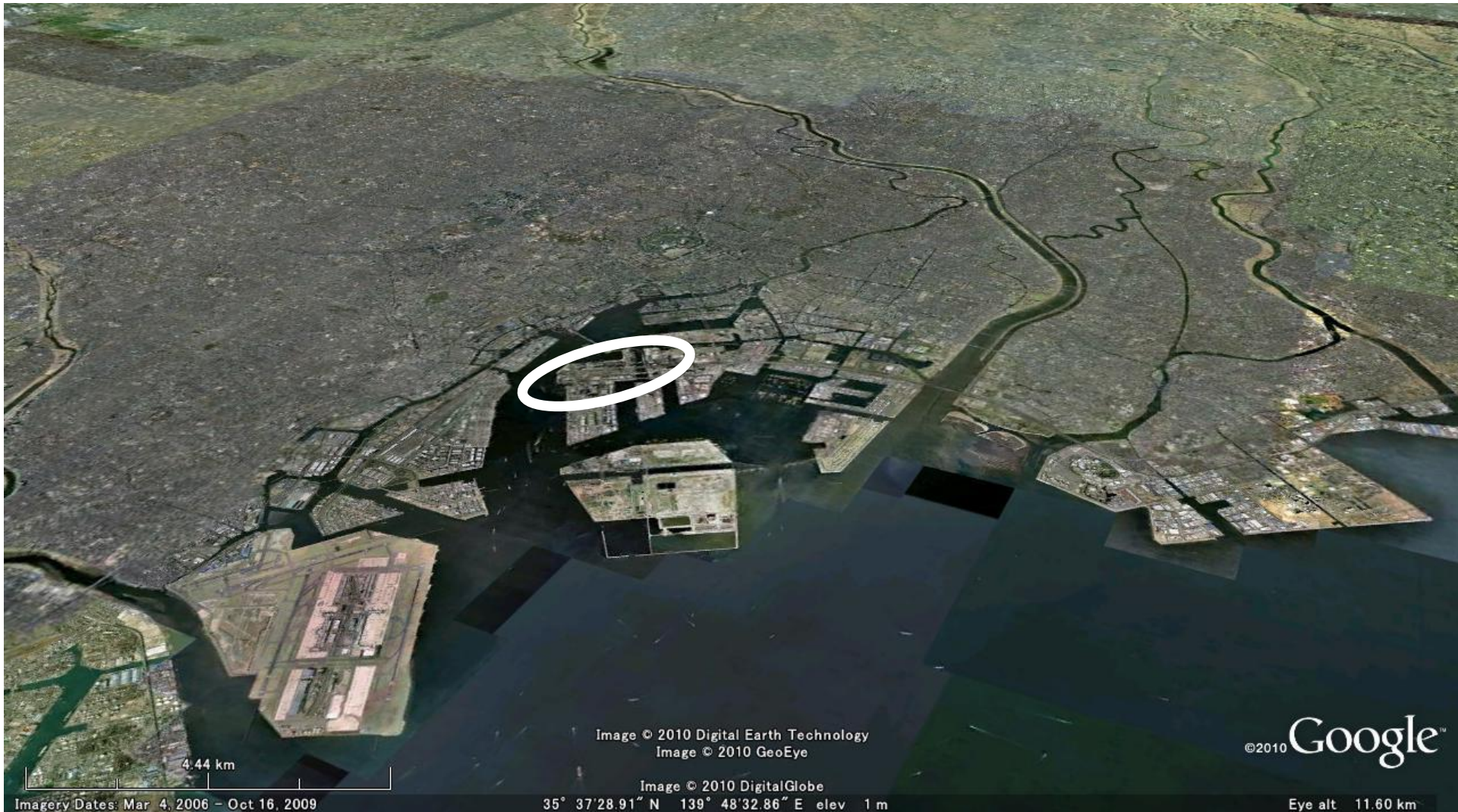


Alternative Model (Hatching at Early Summer)
Needs hatching area restoration

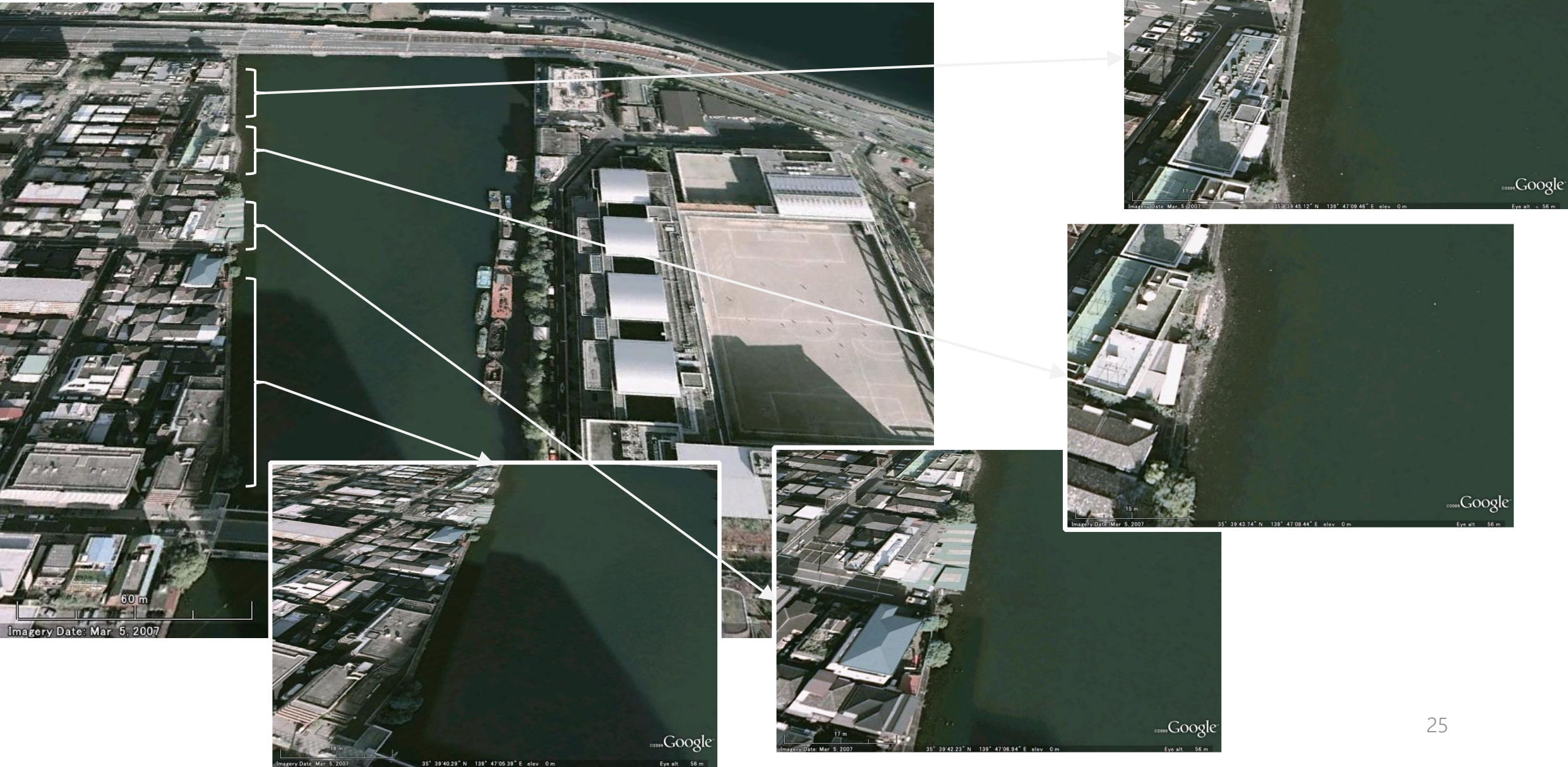
Preliminary attempt of habitat census for goby with public participation



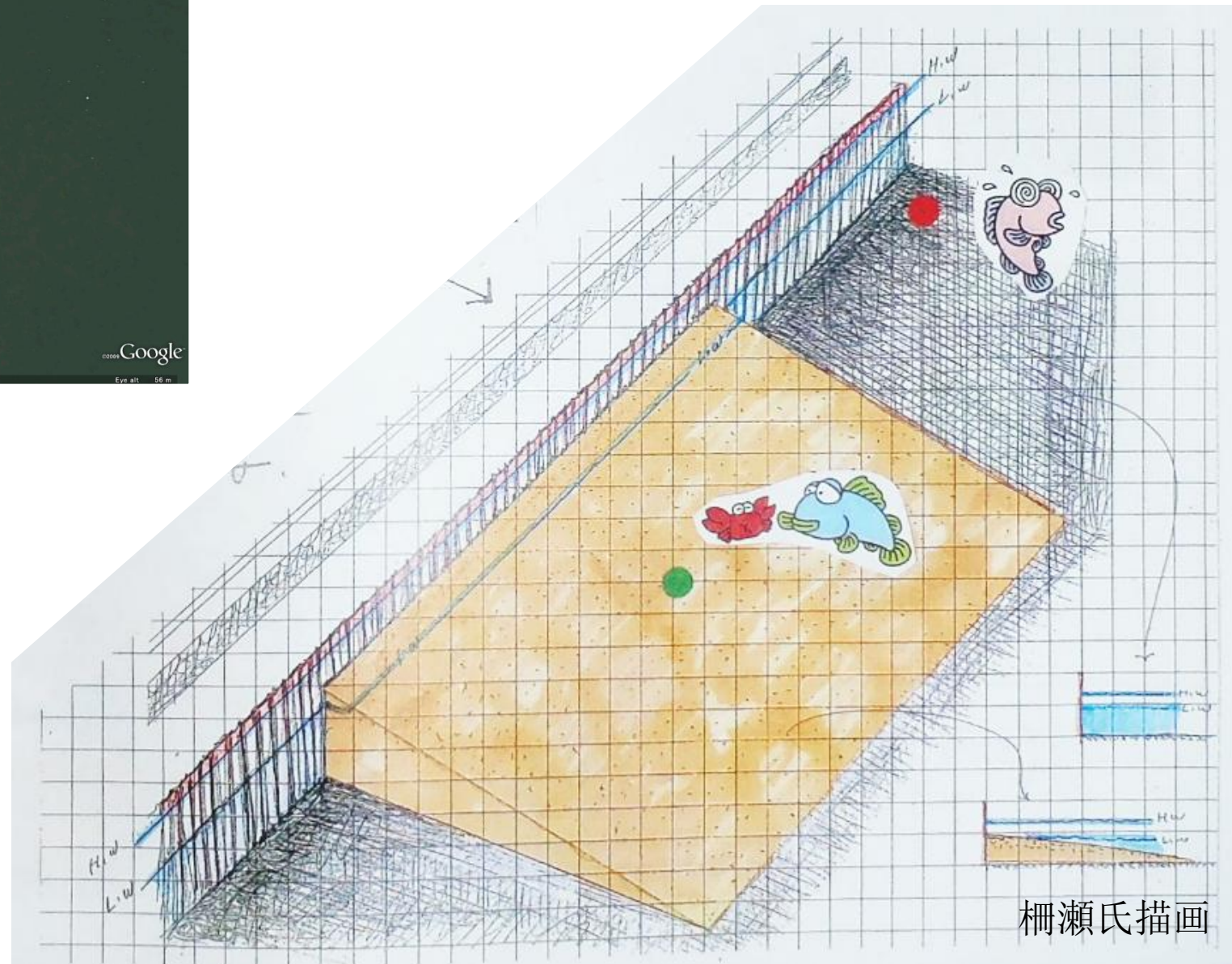
Urban wetland restoration (*Asashio* Canal)



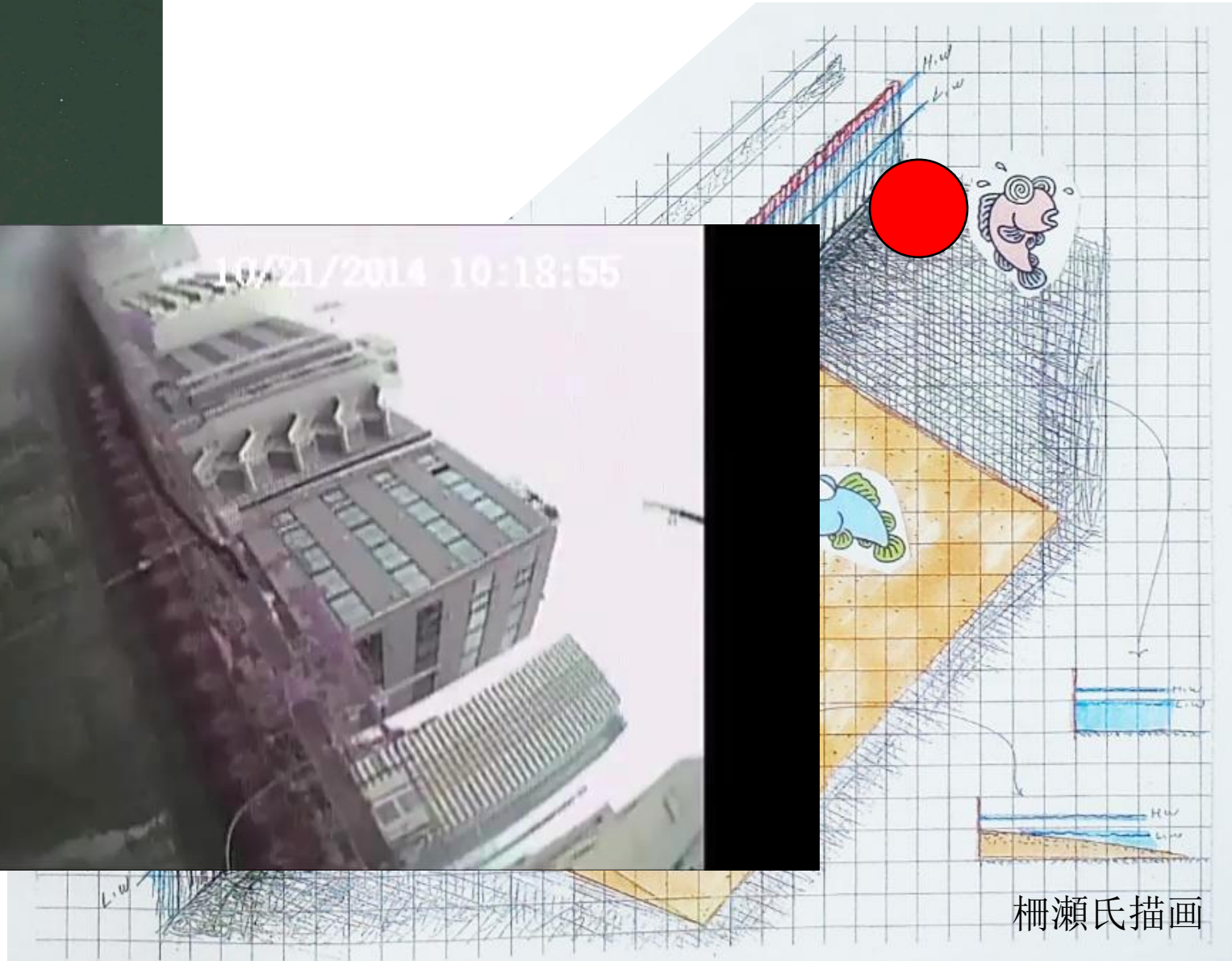
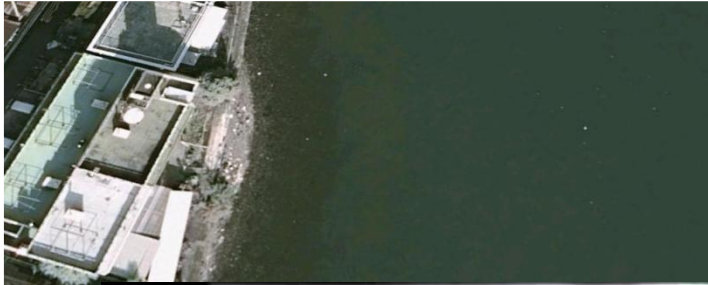
Urban wetland restoration (*Asashio* Canal)



Urban wetland restoration (*Asashio* Canal)

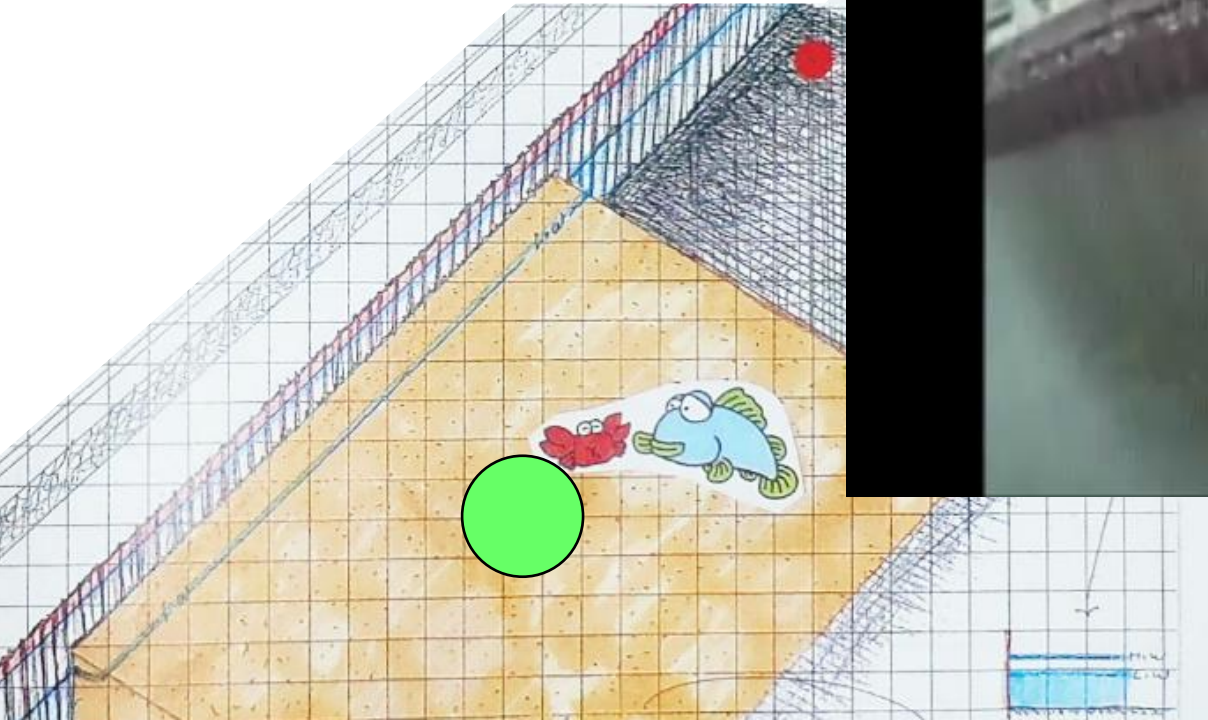


Urban wetland restoration (*Asashio* Canal)



柵瀬氏描画

Urban wetland restoration (*Asashio* Canal)



Restoration for Fruitful Life

MLIT: sea-blue, green policy, Adaptive m.

MOE: Revision of Environment Basic Law

FA: 6th industrialization, Tamenteki

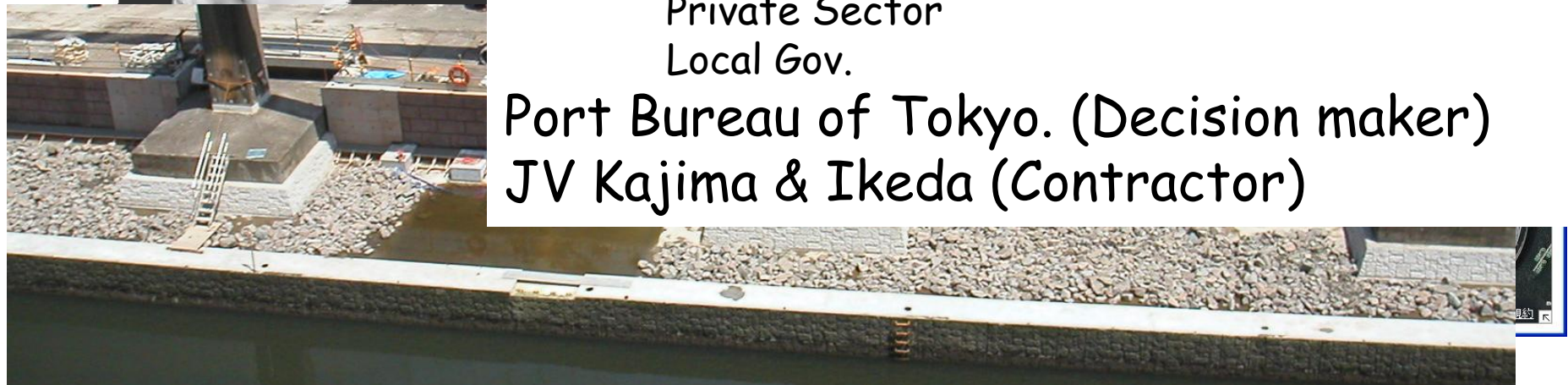
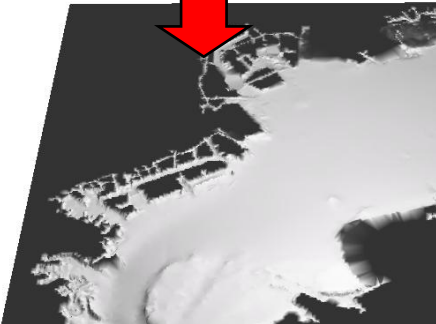
TB Renaissance Project

TB PPP Forum

Cases: Shibaura-Island, Furuhamma, Odaiba

Habitat Restoration of Urban Wetland

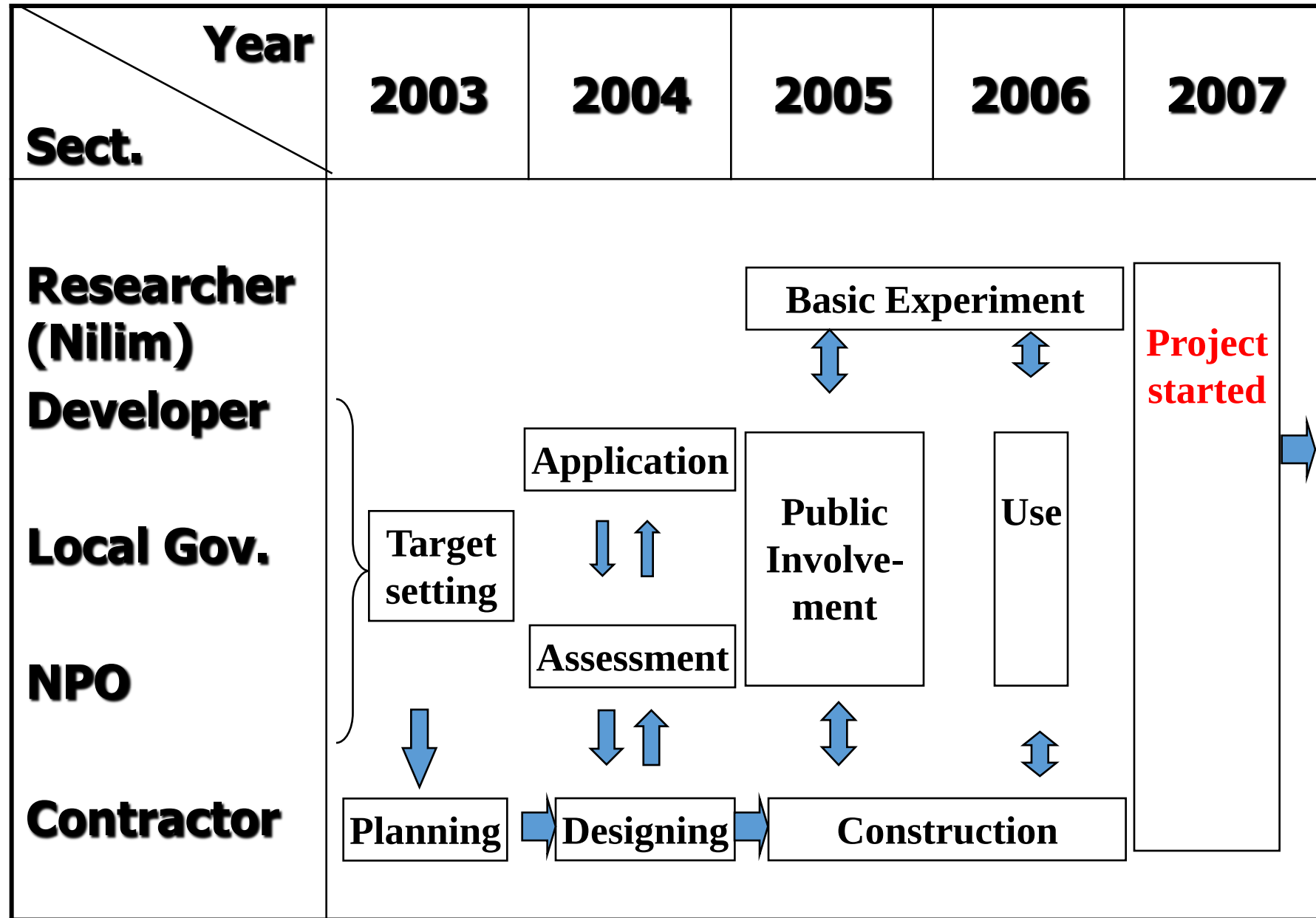
- Habitat creation at canal network
- Public participation for the project

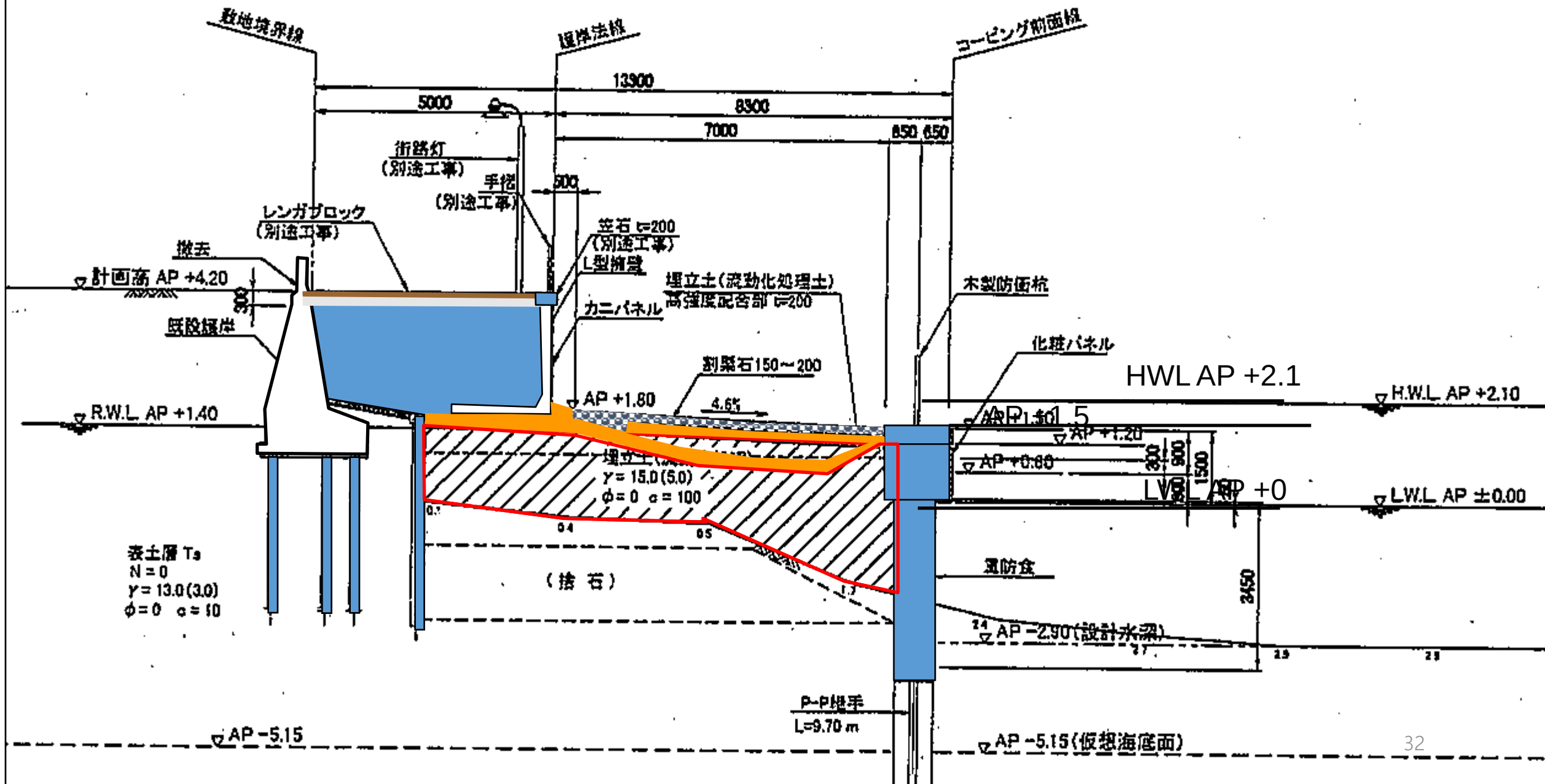


NILIM (Researcher)
Consortium for Shibaura Canal Renaissance
NPO (Stake Holders)
Academia
Research Institutes
Private Sector
Local Gov.

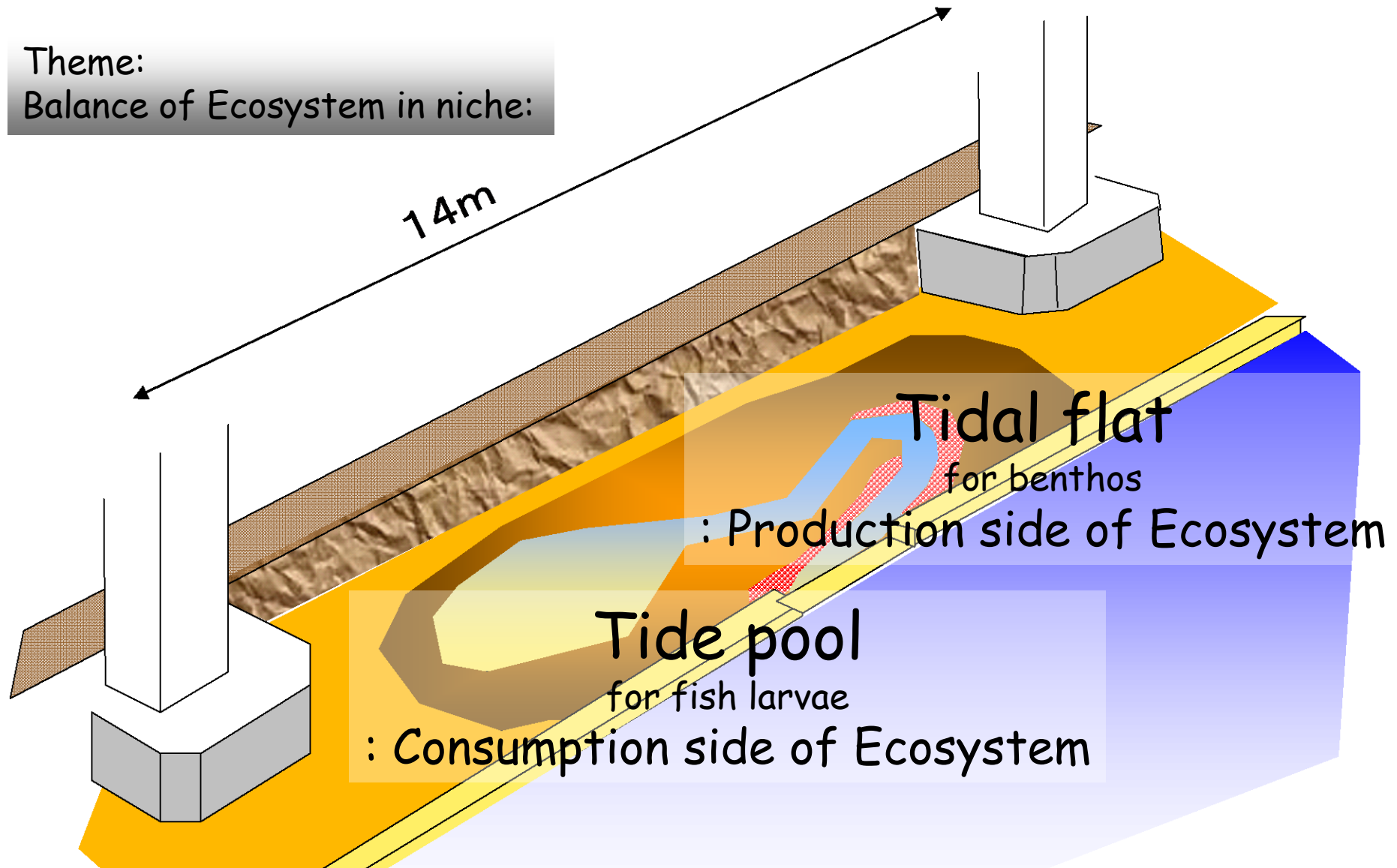
Port Bureau of Tokyo. (Decision maker)
JV Kajima & Ikeda (Contractor)

Time Table and Interrelation of Stakeholders





Concept of Habitat Creation on Seawall





Before April 2005



Construction Oct. 2005



High Tide



Low Tide

Completion of Seawall Terrace March
2007



Tide Pool

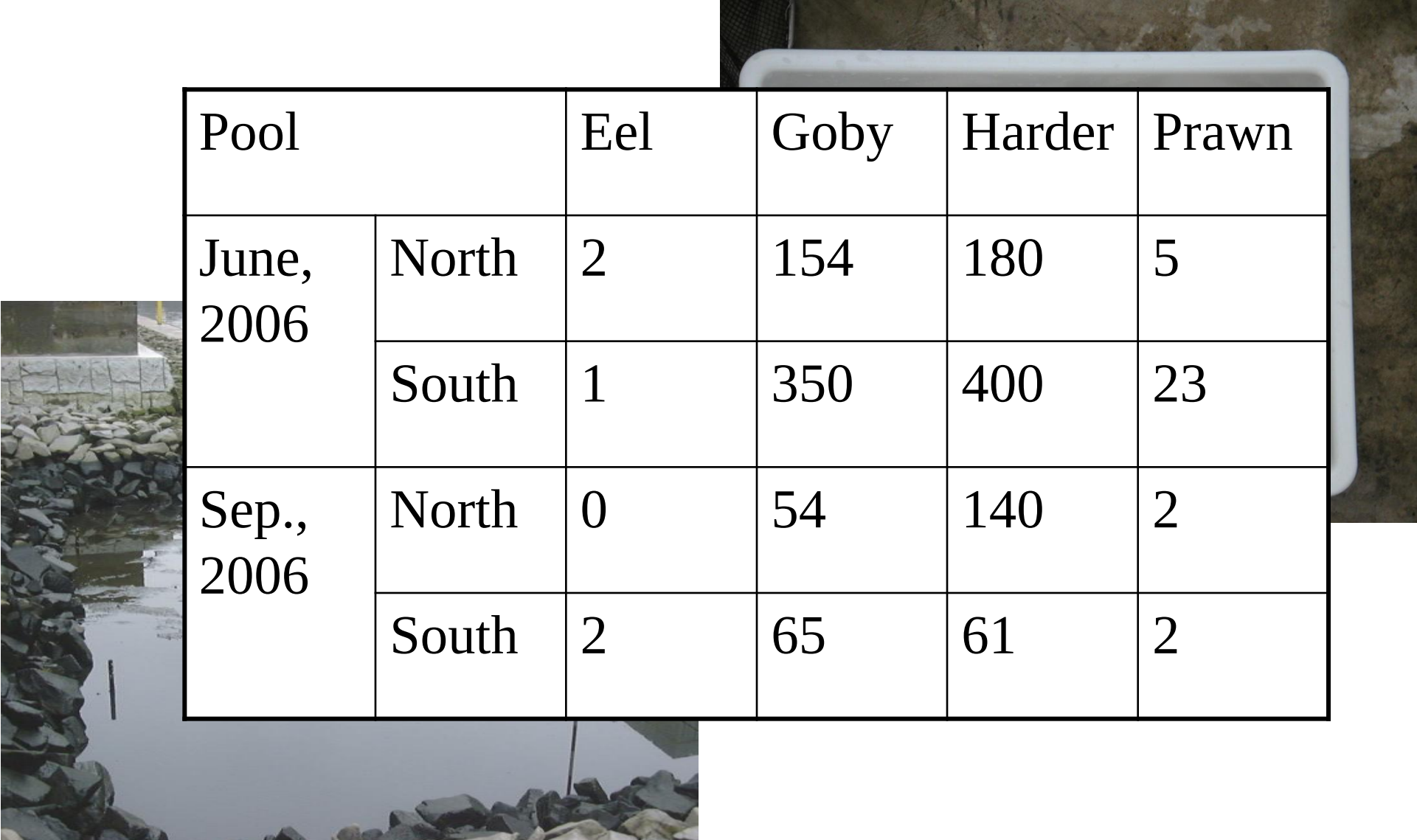
Monitoring
July, Sep. 2006





Fish census in the pool !

a nursery for juvenile fish



Pool		Eel	Goby	Harder	Prawn
June, 2006	North	2	154	180	5
	South	1	350	400	23
Sep., 2006	North	0	54	140	2
	South	2	65	61	2

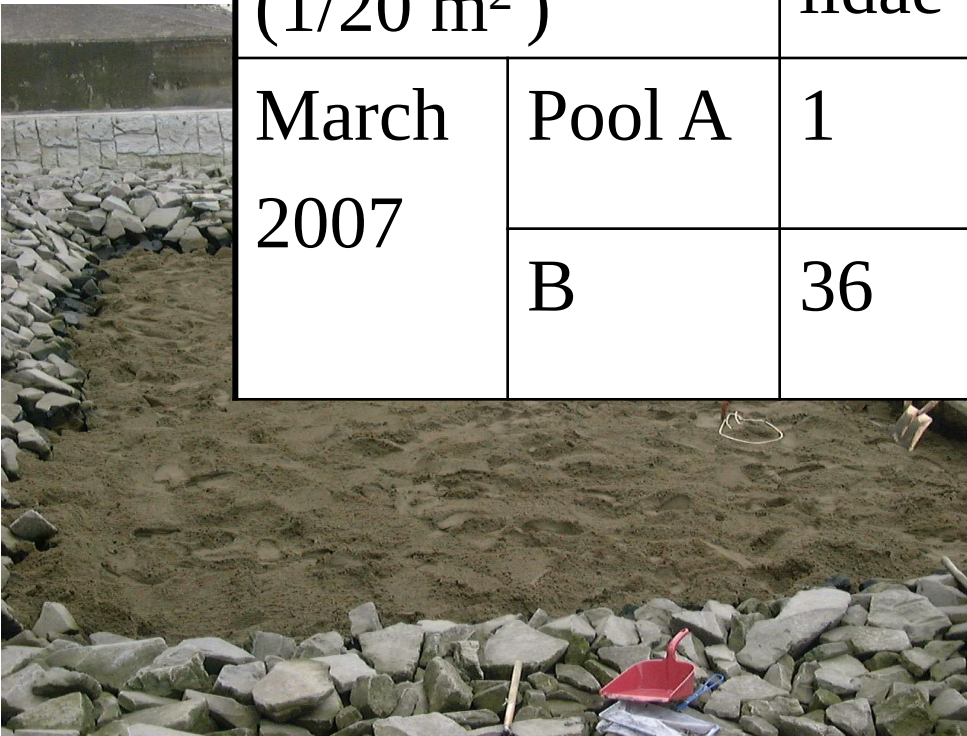




Tidal Flat Creation Sep. 2006

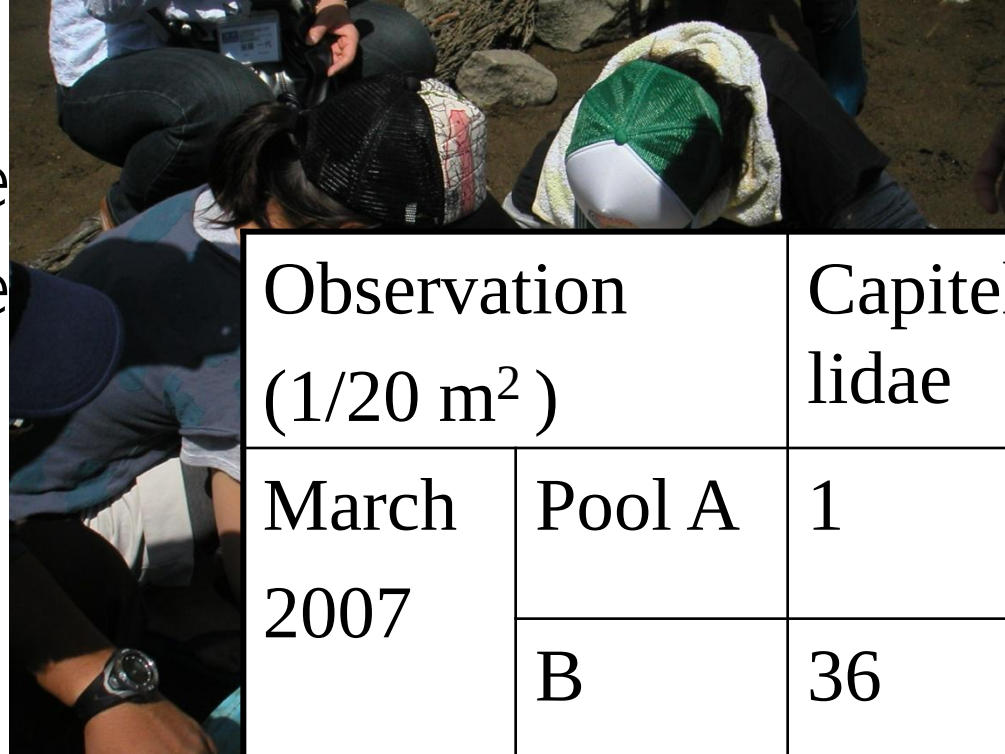
Benthos

Observation (1/20 m ²)		Capitel lidae	Sand Worm	Spio
March 2007	Pool A	1	2	12
	B	36	2	20

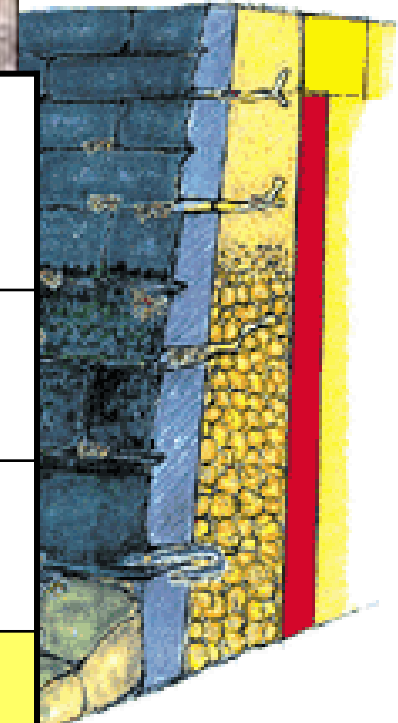


Benthos watch

- Se
- Se



Observation (1/20 m ²)		Capitel lidae	Sand Worm	Spio
March 2007	Pool A	1	2	12
	B	36	2	20
June 2007	B	-	37	-



a Co. Ltd.



Construction of Pool



17th June 2007





Fascine (Wooden pile) for pool



Prawn habitat with Fascine (Wooden pile)



Study at in and out



Study at in and out



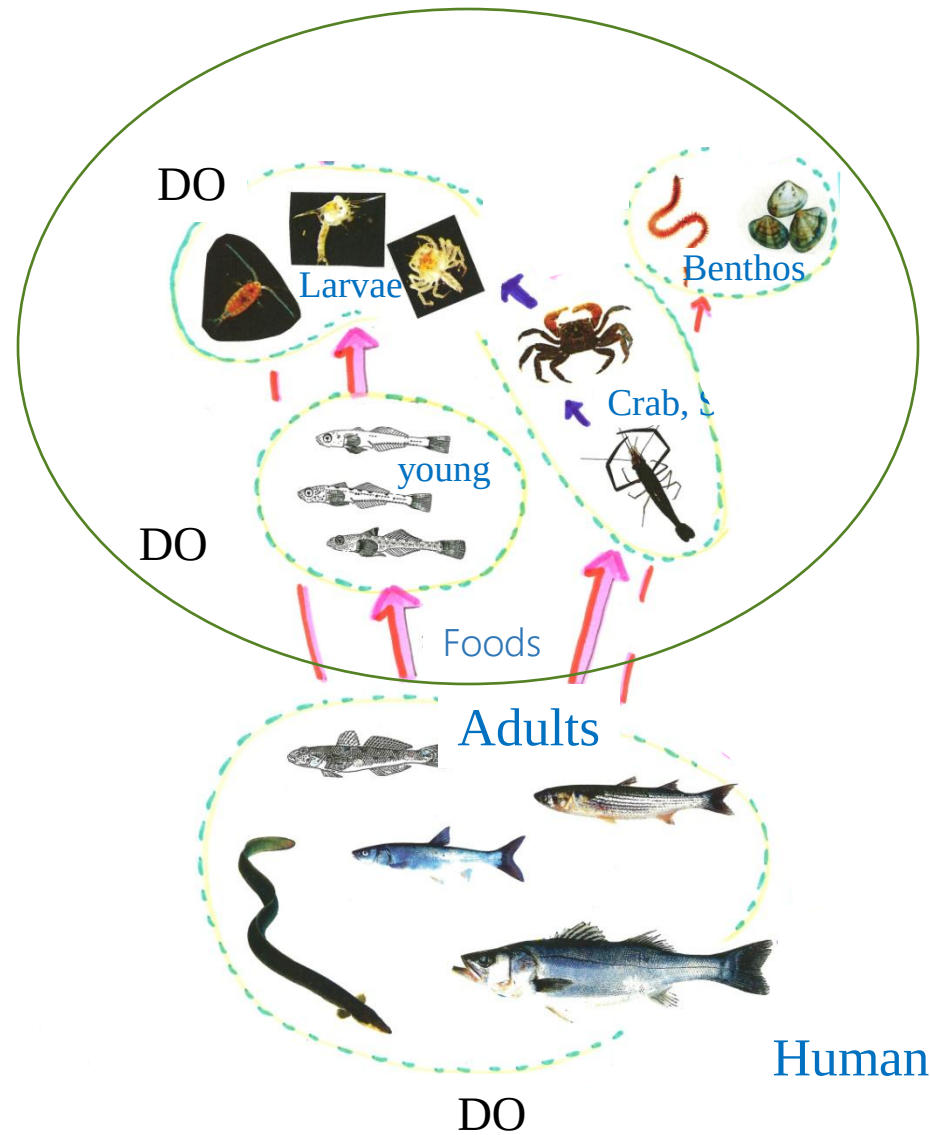
Study at in and out
makes monitoring ready!



Study at in and out
makes monitoring ready!







Food Web of the wetland

A School visits





30-40 school kids in the pool



Program for life!

a touching pool Fun! Fun!
Fun!



Urban Wetland with
Public Involvement is a
New and Useful concept.

Blue economy as Global Target

Ocean Crisis

SDGs

BE concept and Effects

5-6 June, 2017



THE
OCEAN
CONFERENCE
UNITED NATIONS, NEW YORK, 5-9 JUNE 2017

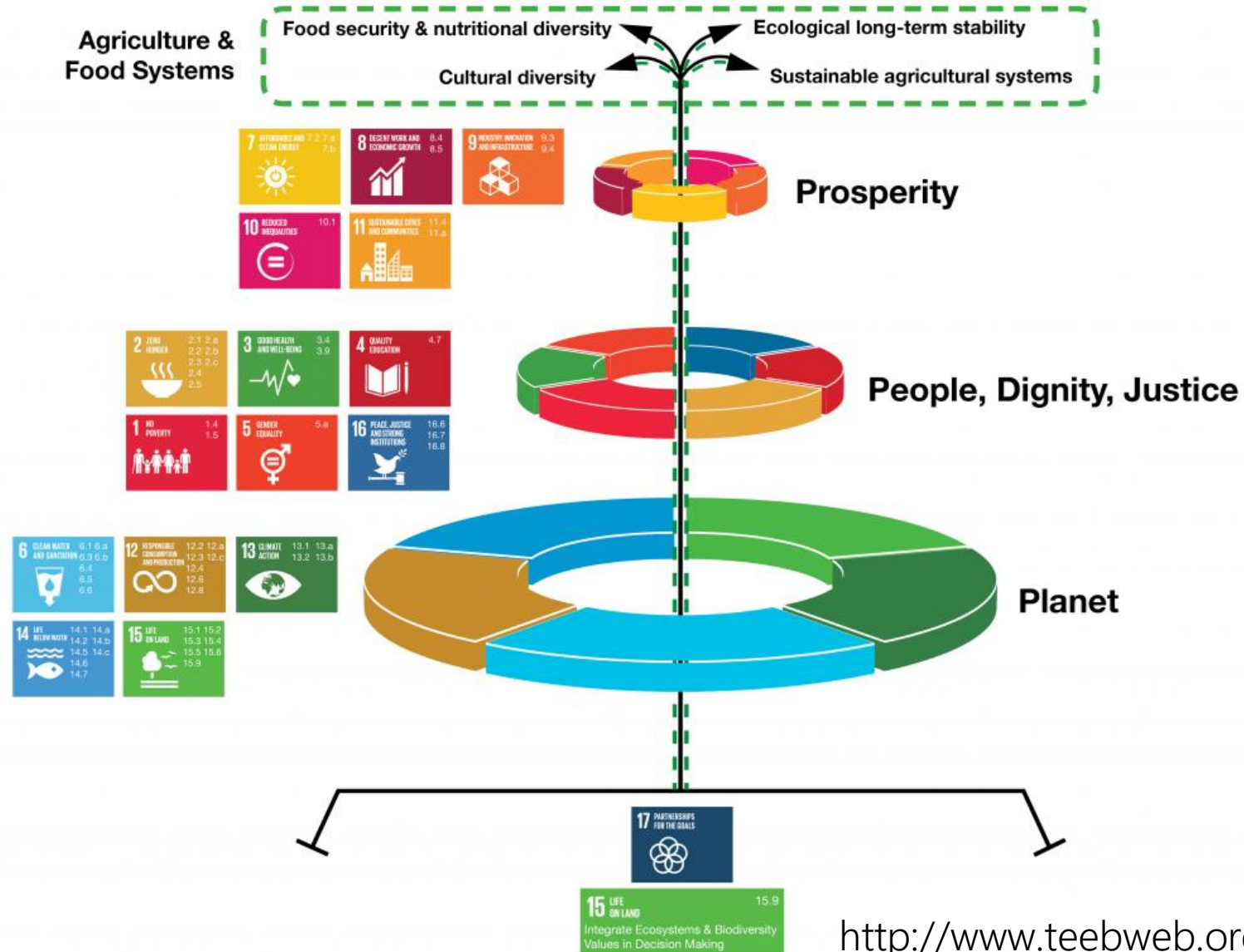


SUSTAINABLE DEVELOPMENT GOALS

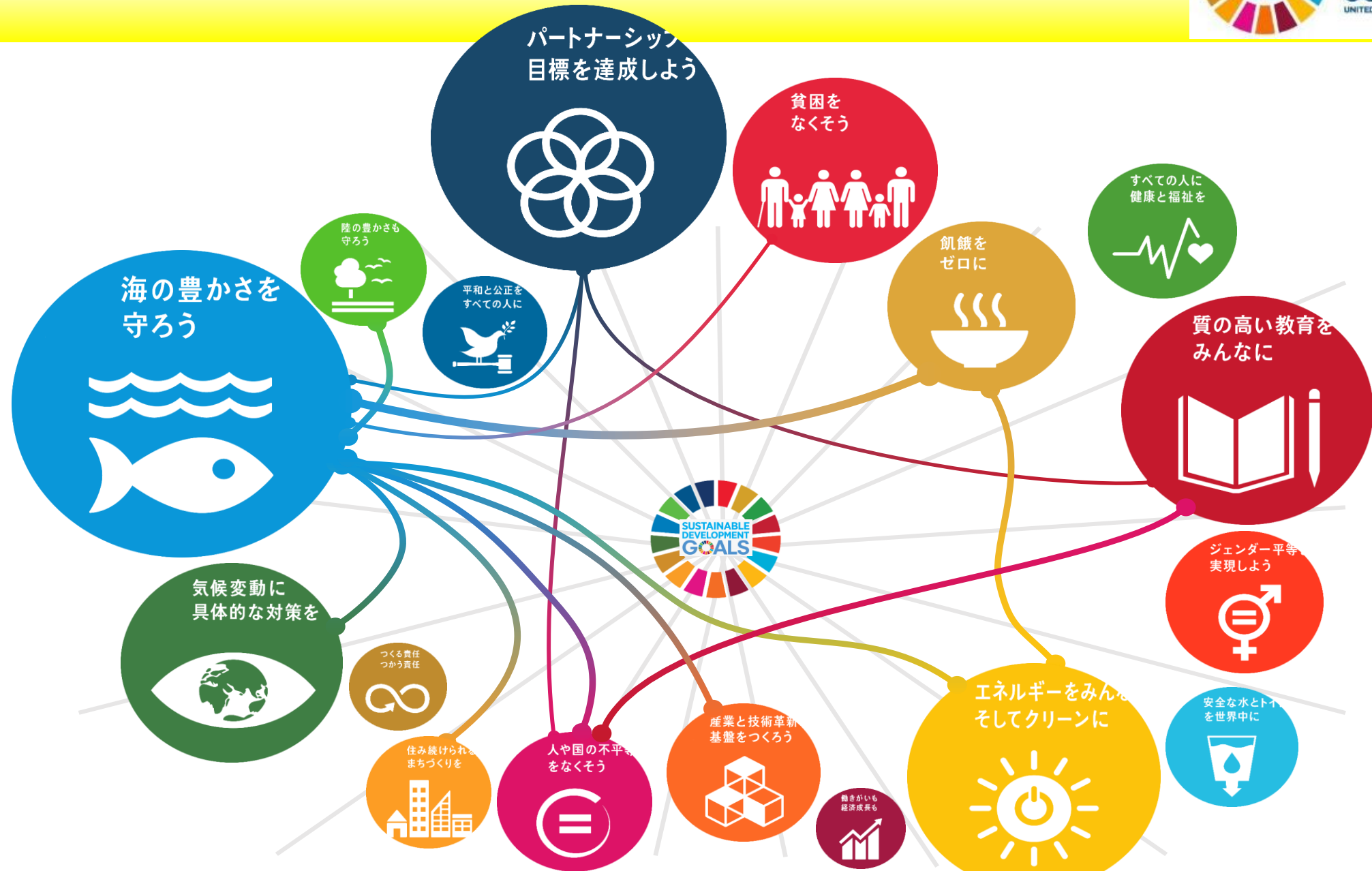
17 GOALS TO TRANSFORM OUR WORLD



Co- benefits of SDGs

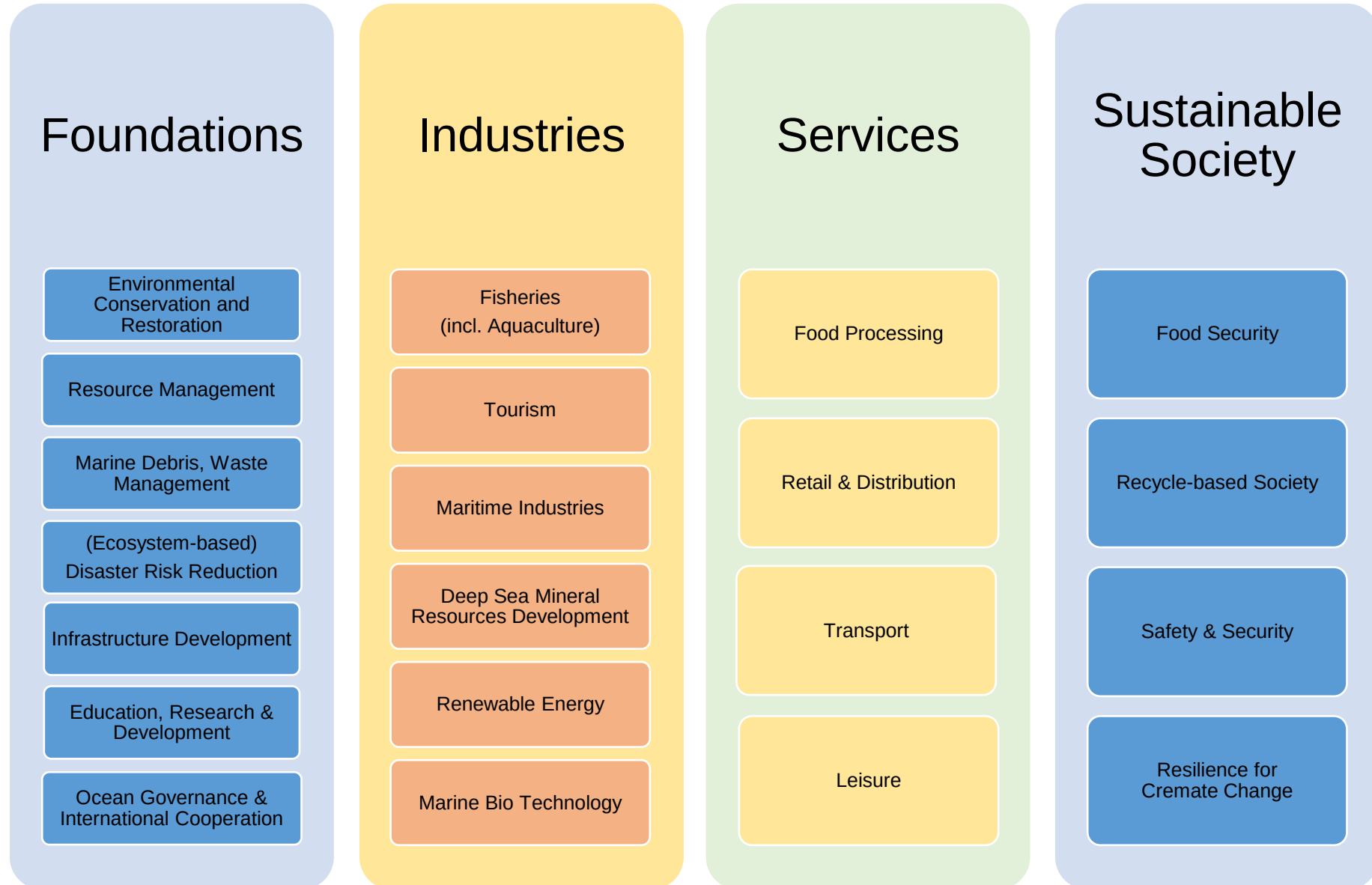


Co- benefits of SDGs

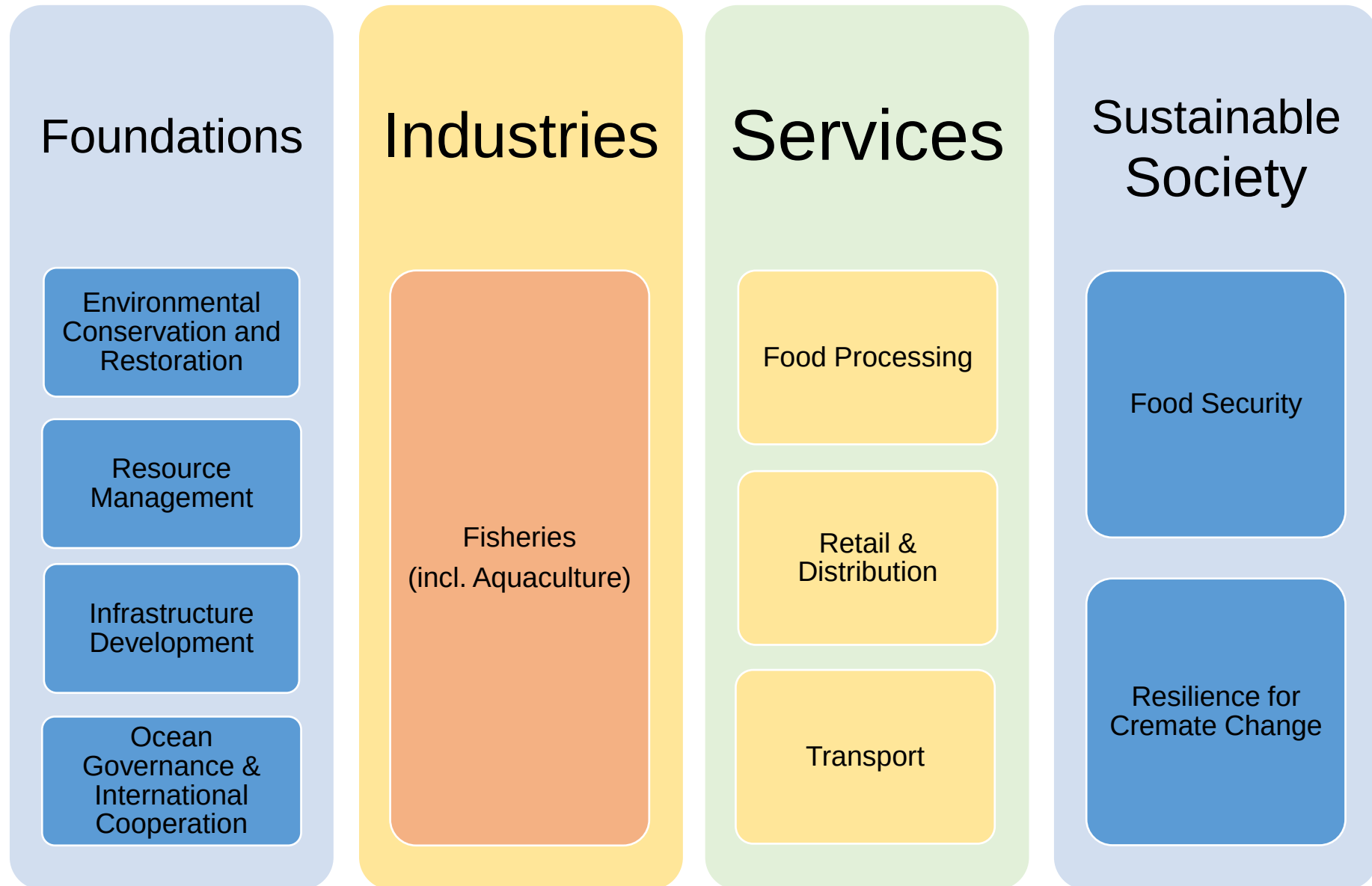




Blue Economy



Blue Economy **for Fisheries**



Blue Economy for sustainable developments

Re-cycle based
Society

Food security

Renewable Energy

Transport

Retail / Distribution

Food Processing

Shipping

Leisure

Tourism

Environment Conservation/
Restoration

Infrastructure

Fisheries

Environment Conservation/
Restoration

Eco-DRR

Transport

Ocean Governance

International Cooperation

Fisheries

Resource Management

Deep Sea Mining

Resource
Management

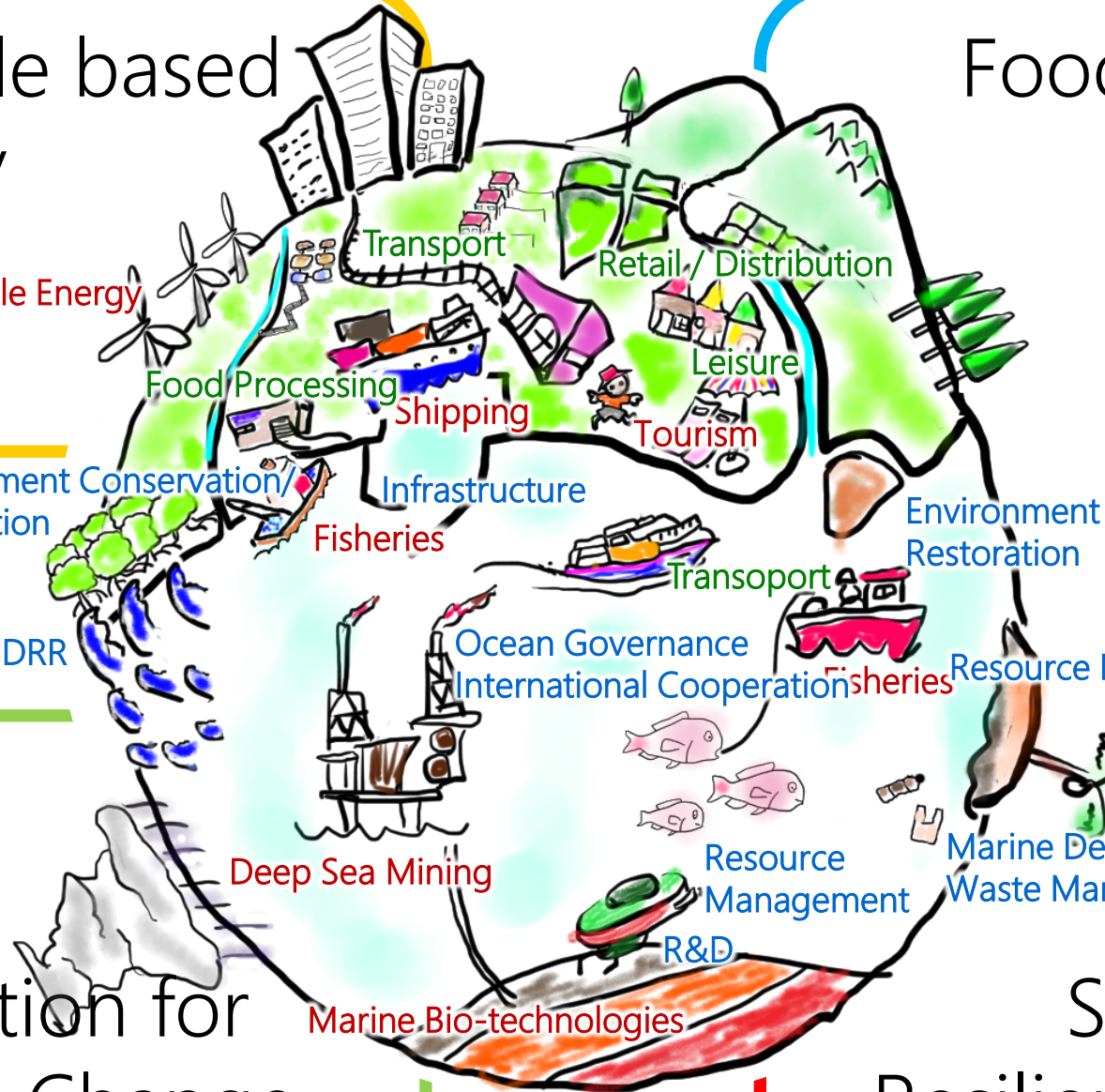
Marine Debris
Waste Management

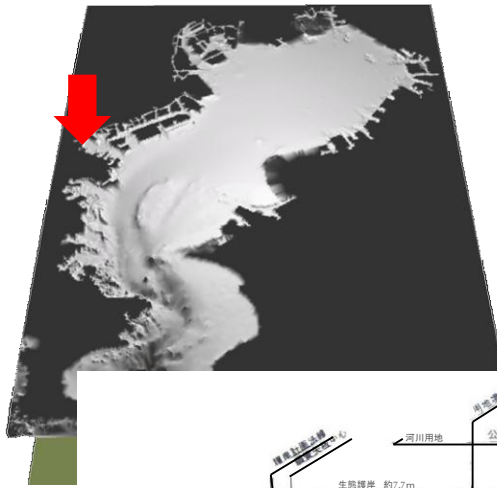
R&D

Marine Bio-technologies

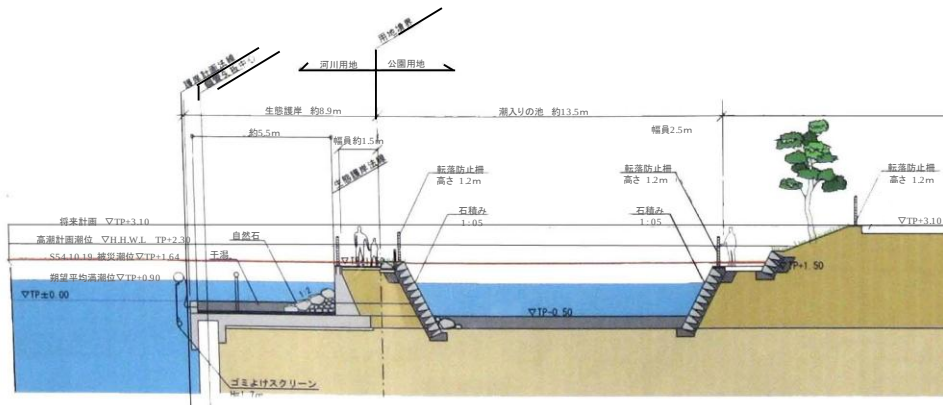
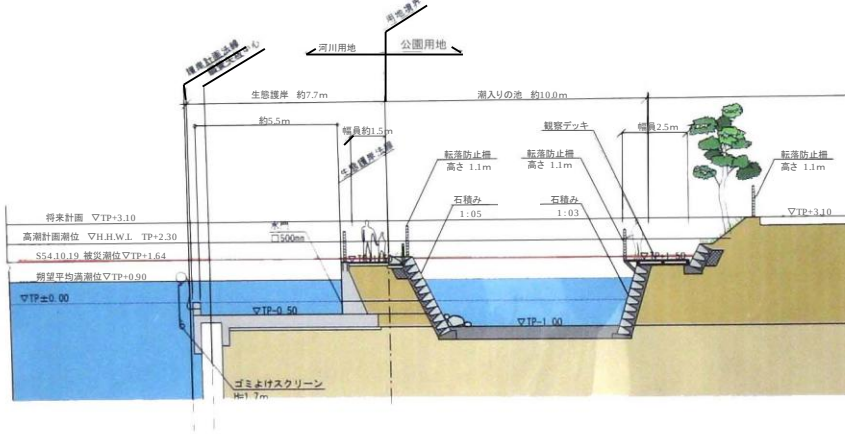
Adaptation for
Climate Change

Safety and
Resilient Society





New Park Planning at Katabira River (帷子川) Mouth with Public Participation



Sea Side Park Plan with a Tidal Pool

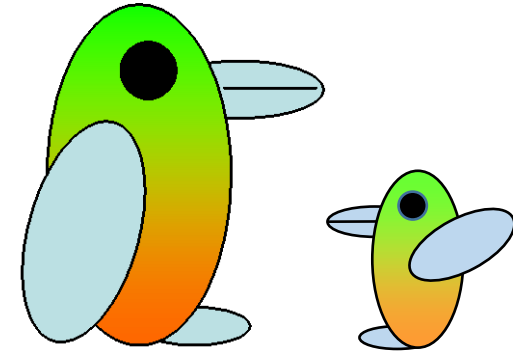
New Park Planning at Katabira River (帷子川) Mouth with Public Participation



Public Participation

Variation of Joy

- Search
- Surprise
- Proud of it

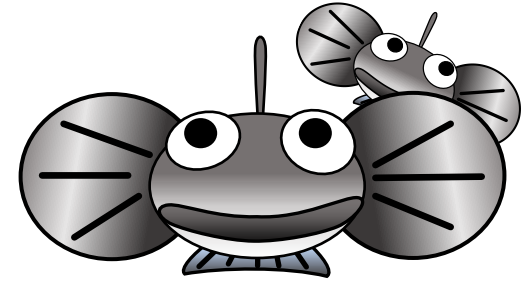


Clue for Enjoy

- Do the same
- Do the deference
- Rely and look after

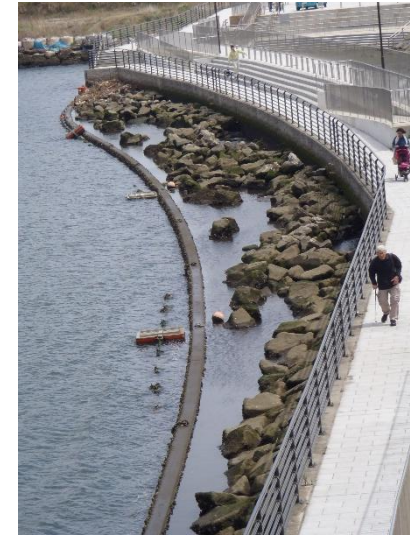


Some secrets ■ ■ ■



Ecosystem Establishment

- Habitats
- Water circulation
- Oxygen and Temperature

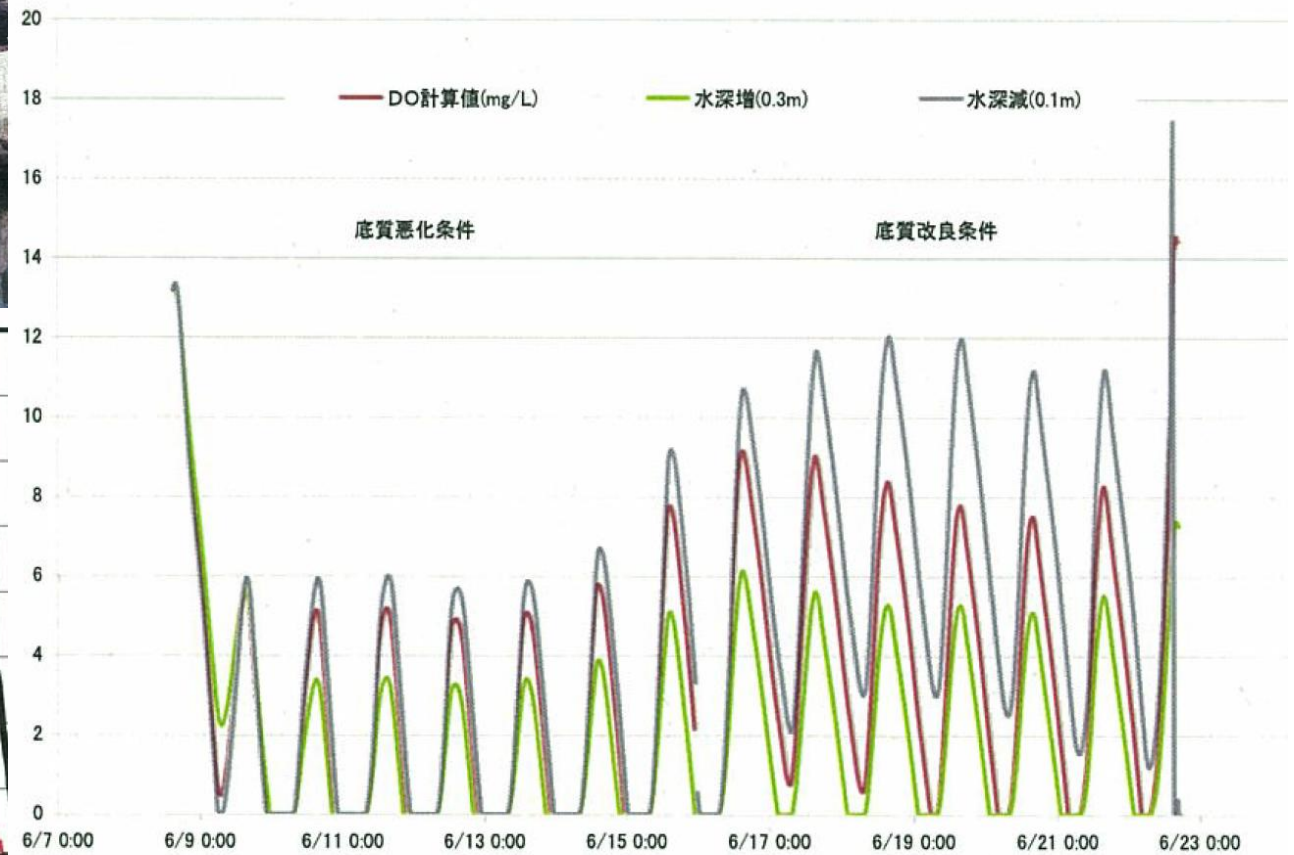
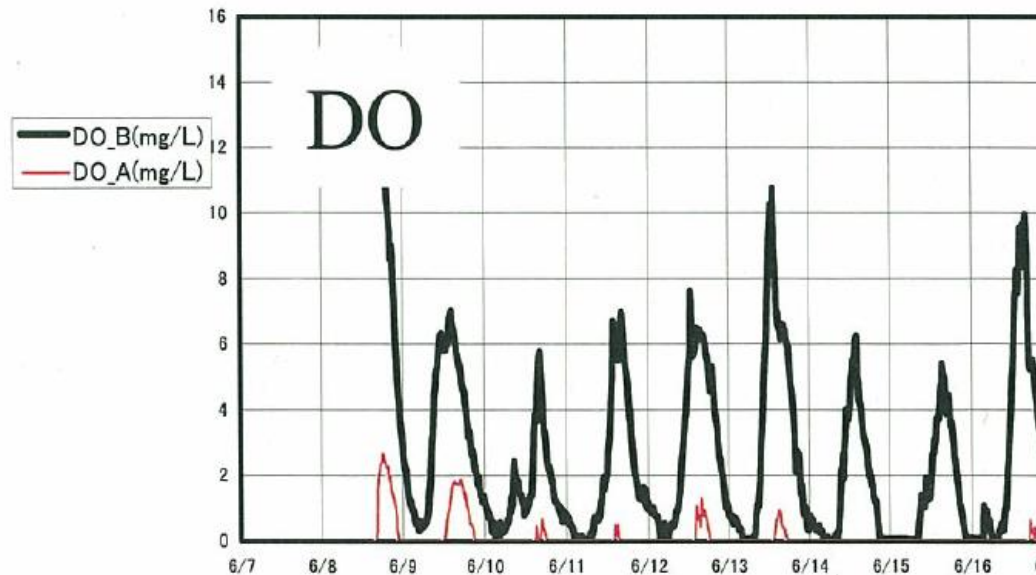
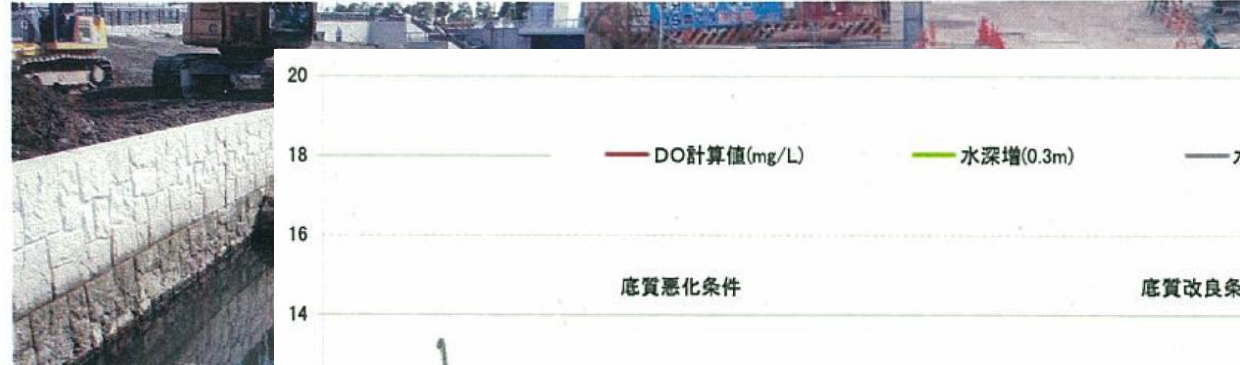
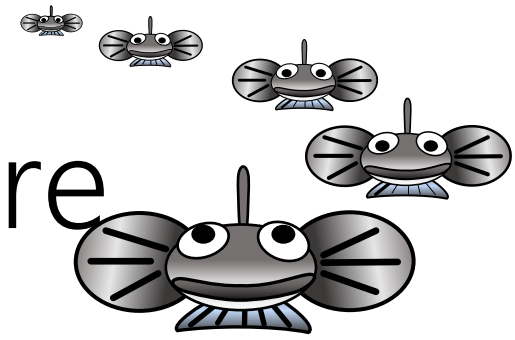


Access

- Steps, Slopes
- Safety net
- Water, Shade, Toilet



Oxygen and Temperature



上流側: A 赤線



Global

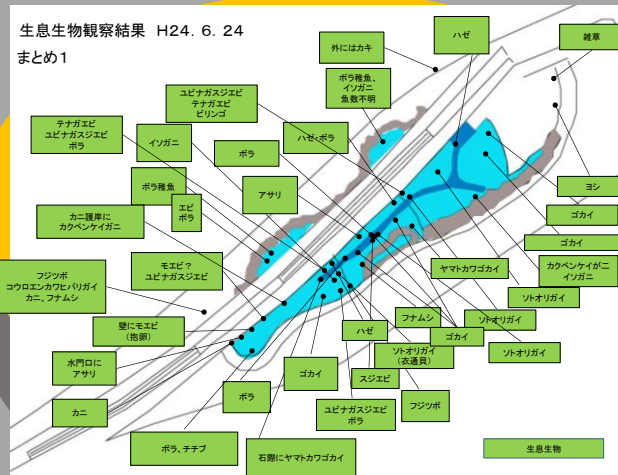
Regional

Local

Human Well-being &

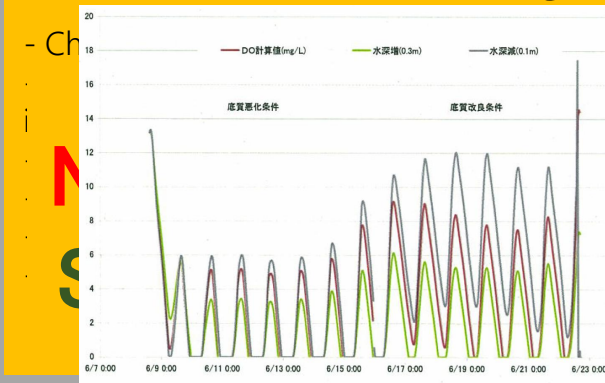


Indirect Drivers of Change



Biodiversity

Direct Drivers of Change





Start from here!

Act /w people

Understand /w Science

Get Interest /w Joy