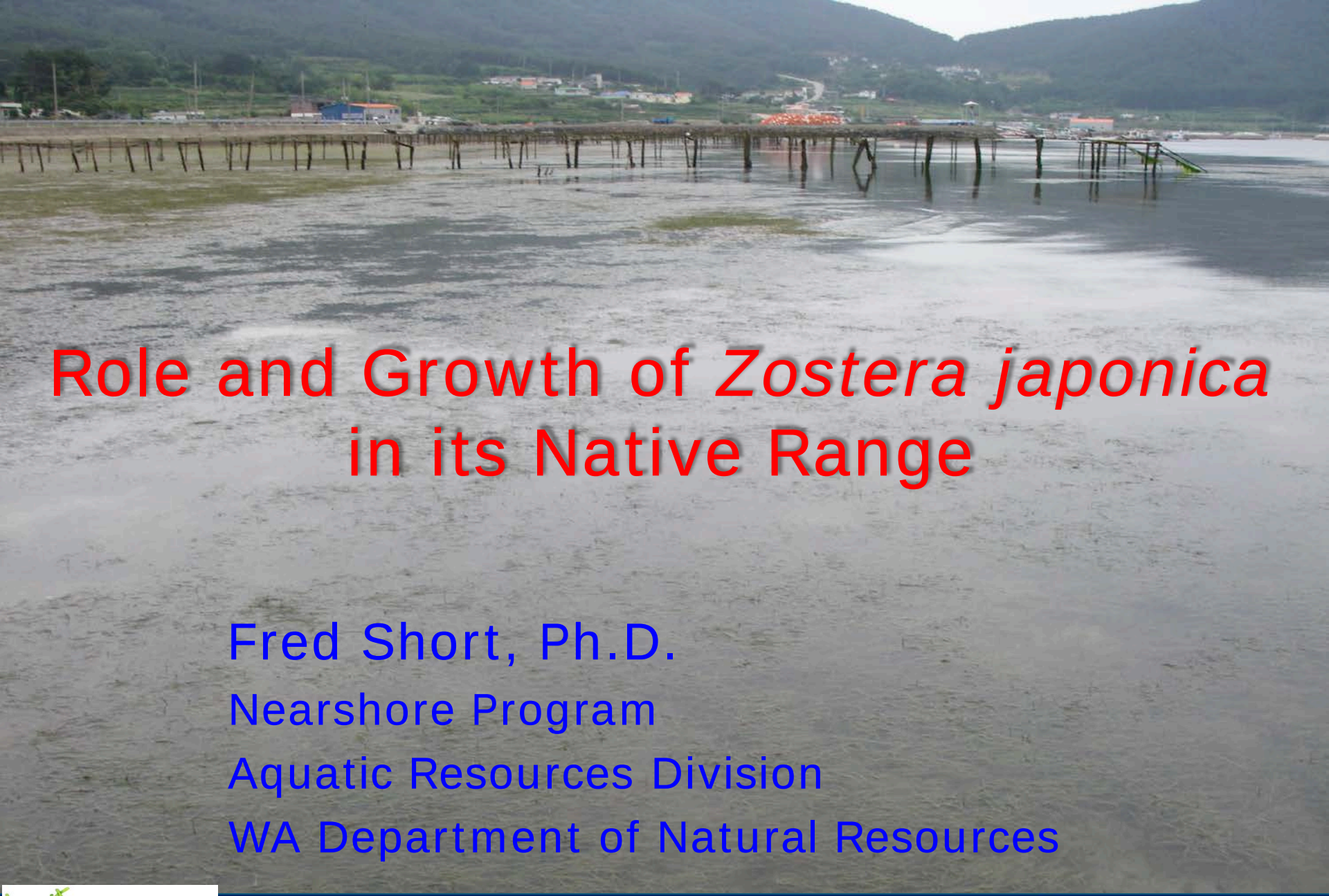


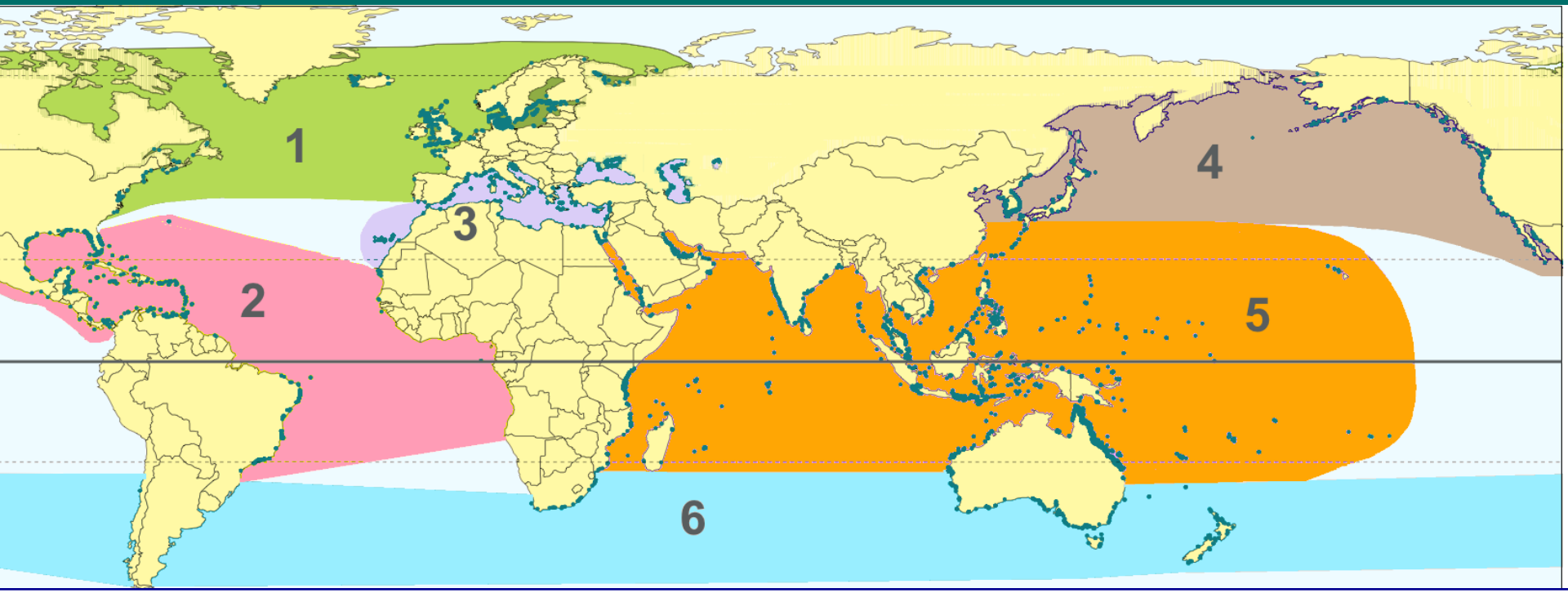
Role and Growth of *Zostera japonica* in its Native Range

Fred Short, Ph.D.

Nearshore Program

Aquatic Resources Division

WA Department of Natural Resources



1. Temperate North Atlantic, 2. Tropical Atlantic, 3. Mediterranean, 4. Temperate North Pacific, 5. Tropical Indo-Pacific, 6. Temperate Southern Oceans

Global seagrass distribution shown as blue points and polygons (data from 2005 UNEP-WCMC) and geographic seagrass bioregions.

Short, F.T., W.C. Dennison, T.J.B. Carruthers, M. Waycott. 2007. Global Seagrass Distribution and Diversity: A Bioregional Model. Journal of Experimental Marine Biology and Ecology 350:3-20.

Seagrass Bioregions

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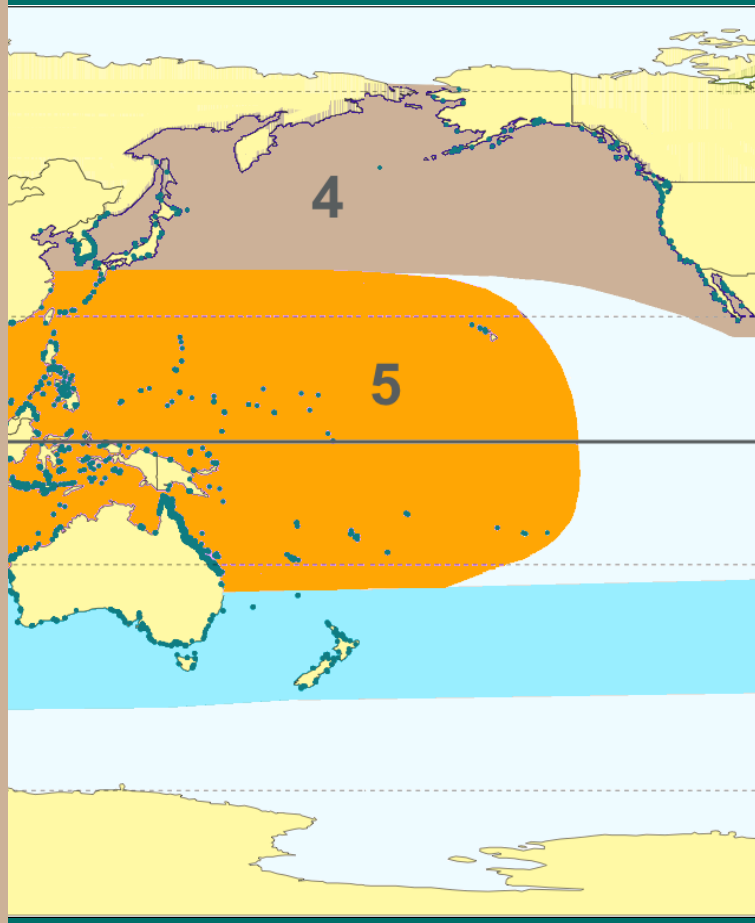
4. Temperate North Pacific (16 species)

Halodule wrightii (Mexico)
Halophila decipiens (Mexico)
Halophila ovalis (Japan)
Halophila euphlebia (Japan)
Halophila nipponica (Japan & S. Korea)
Phyllospadix iwatensis
Phyllospadix japonicus
Phyllospadix serrulatus
Phyllospadix scouleri
Phyllospadix torreyi
Ruppia maritima
Zostera asiatica
Zostera caespitosa
Zostera caulescens
Zostera marina
Zostera japonica



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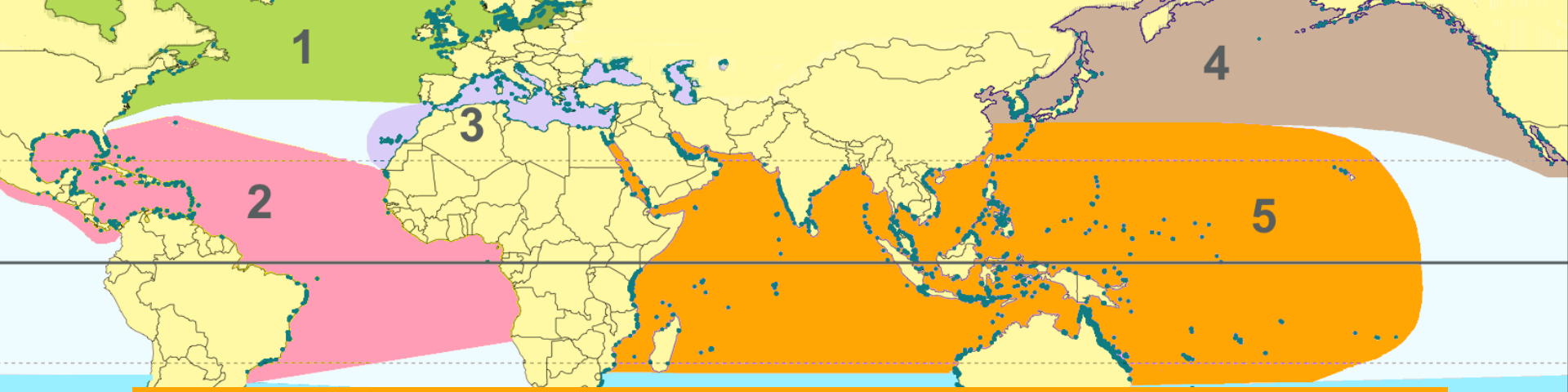

5. Tropical Indo-Pacific (25)

Cymodocea serrulata
Cymodocea rotundata
Cymodocea angustata
Enhalus acoroides
Halodule uninervis
Halodule pinifolia
Halodule wrightii
Halophila beccarii
Halophila capricorni
Halophila decipiens
Halophila euphlebia
Halophila hawaiiana
Halophila minor
Halophila ovalis
Halophila ovata
Halophila spinulosa
Halophila stipulacea
Halophila tricostata
Ruppia maritima
Syringodium isoetifolium
Thalassodendron ciliatum
Thalassia hemprichii
Zostera capensis
Zostera muelleri (Z. capricorni)
Zostera japonica

Seagrass Species

Zostera marina

- Flat leaves to 3m with a rounded leaf tip and creeping rhizome
- Seeds 3-4mm brown and ridged
- 5+ leaf veins

Zostera japonica

- Flat leaves to 30cm with notched uneven leaf tip and thin rhizome
- No erect stems
- 3 leaf veins

Phyllospadix torreyi

- Rolled leaves to 200cm with rounded to slightly notched tip
- 3 leaf veins

Phyllospadix serrulatus

- Flat leaves to 40cm with rounded/flattened tip with serrated leaf edges
- 5-7 leaf veins

Phyllospadix scouleri

- Flat leaves to 200cm with rounded/flattened/notched tip and rhizome internodes with yellow/gray fibers
- 3 leaf veins

Ruppia maritima

- Flat very thin leaves 3 to 25 cm
- Blades gradually taper to a point
- Very thin rhizome
- Flowers on stem with few coils

Temperate Pacific Northwest

Humboldt Bay, CA

Zostera japonica Global Distribution

Short F. and R. Coles. 2003. The World Atlas of Seagrasses. U. Cal. Press.

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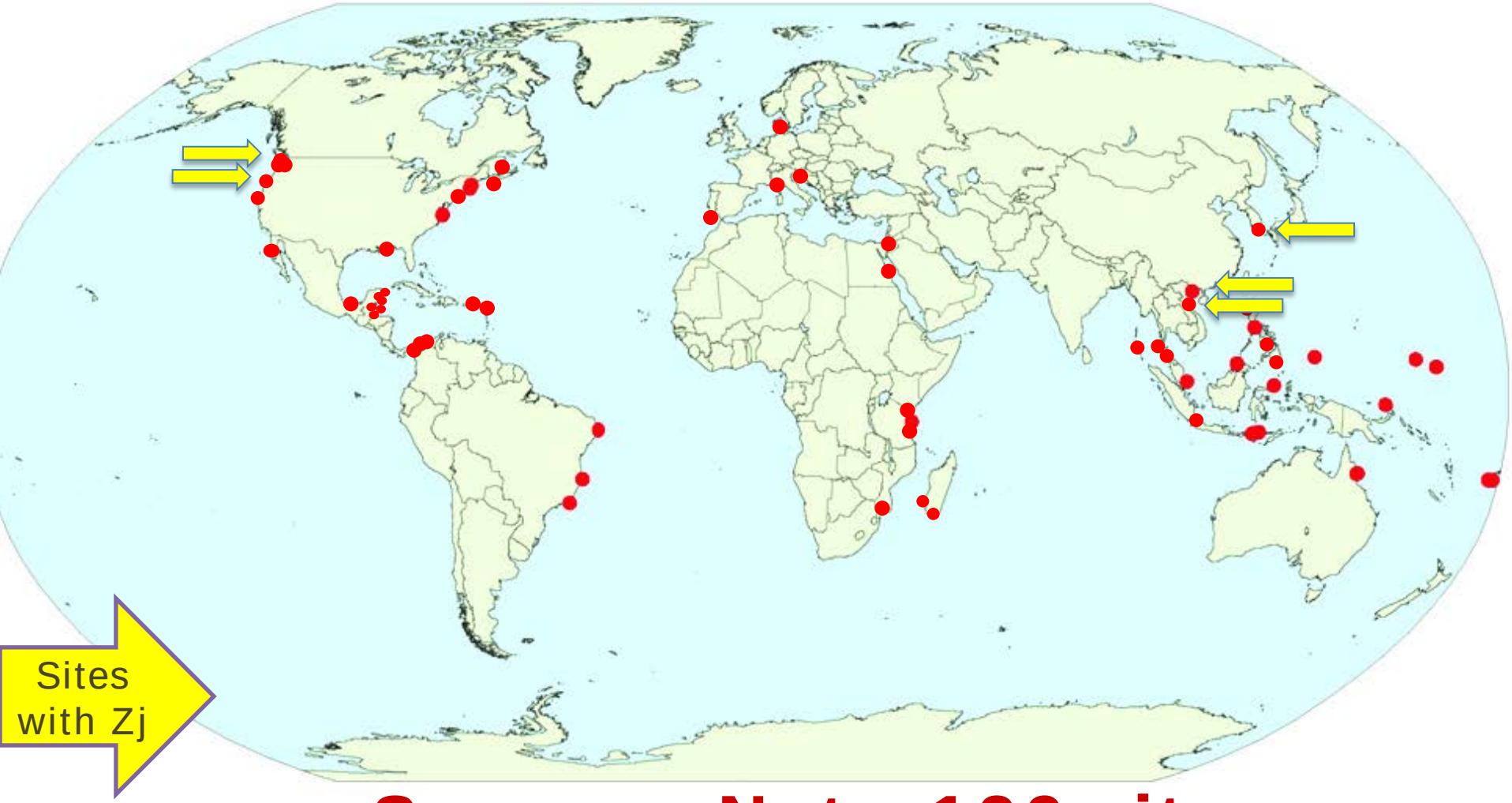

SeagrassNet - 129 sites

Global Seagrass Monitoring

www.SeagrassNet.org

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Russian Federation
Mongolia
N Korea
Japan
China
S Korea
Pacific
Ocean
Vietnam

Asia

Zostera japonica in **Korea**

Clam harvest on *Z. japonica*

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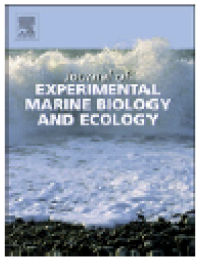


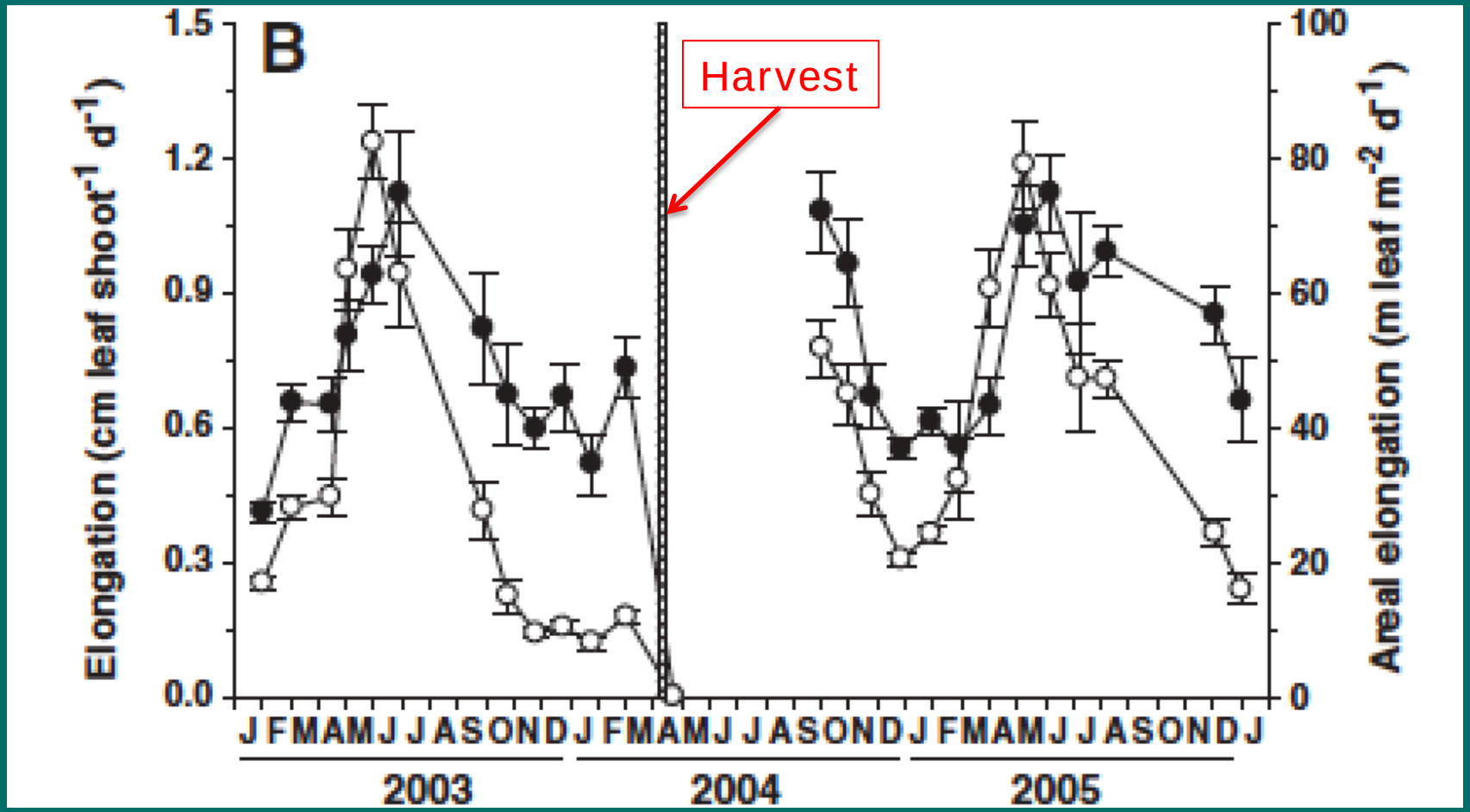
Rapid recovery of the intertidal seagrass *Zostera japonica* following intense Manila clam (*Ruditapes philippinarum*) harvesting activity in Korea

Sang Rul Park [a,1], Young Kyun Kim [a], Jong-Hyeob Kim [a], Chang-Keun Kang [b], Kun-Seop Lee [a,*]

[a] *Department of Biological Sciences, Pusan National University, Pusan 609-735, Republic of Korea*
[b] *Ocean Science and Technology Institute, Pohang University of Science and Technology (POSTECH), Pohang 790-784, Republic of Korea*

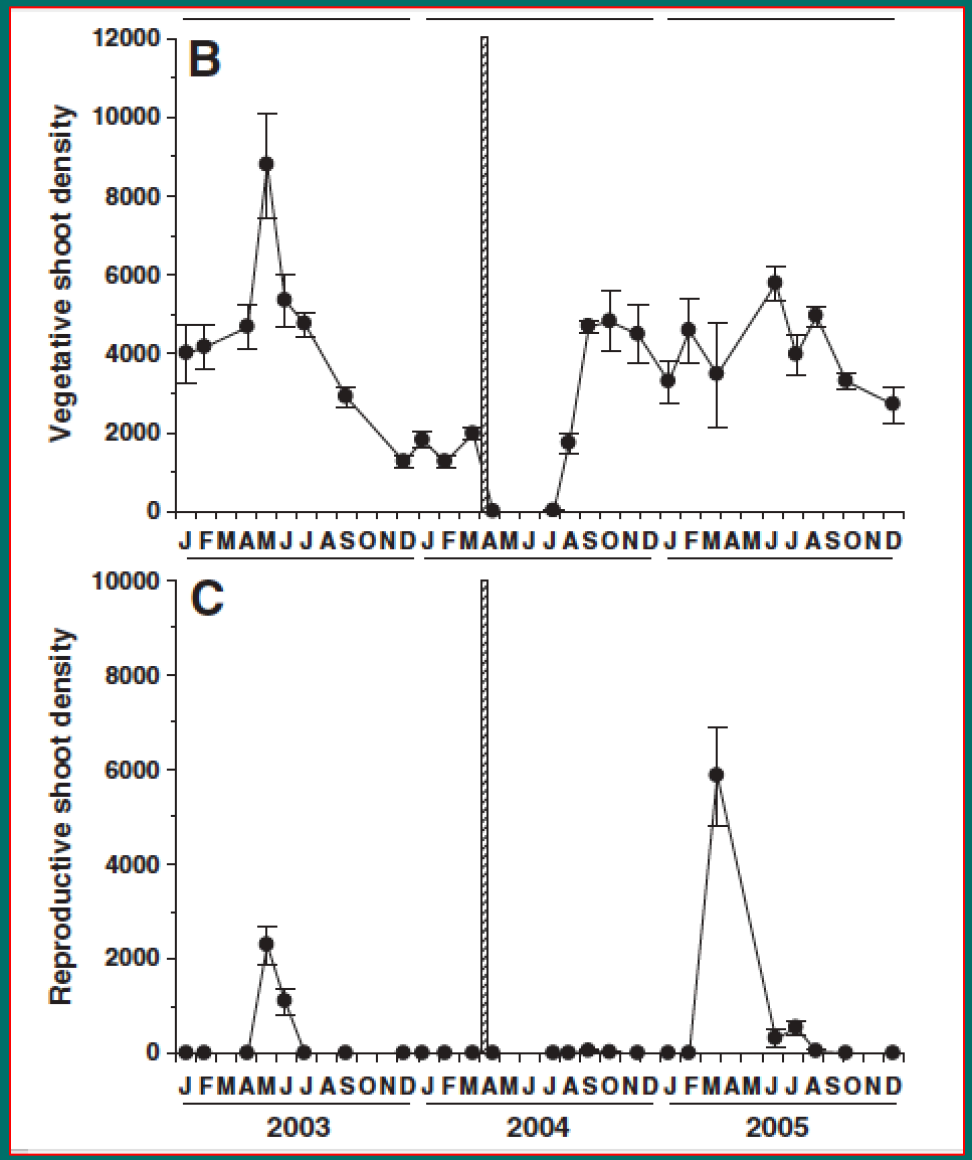
Park, et al 2011

Z. Japonica growth before and after Manila clam harvest

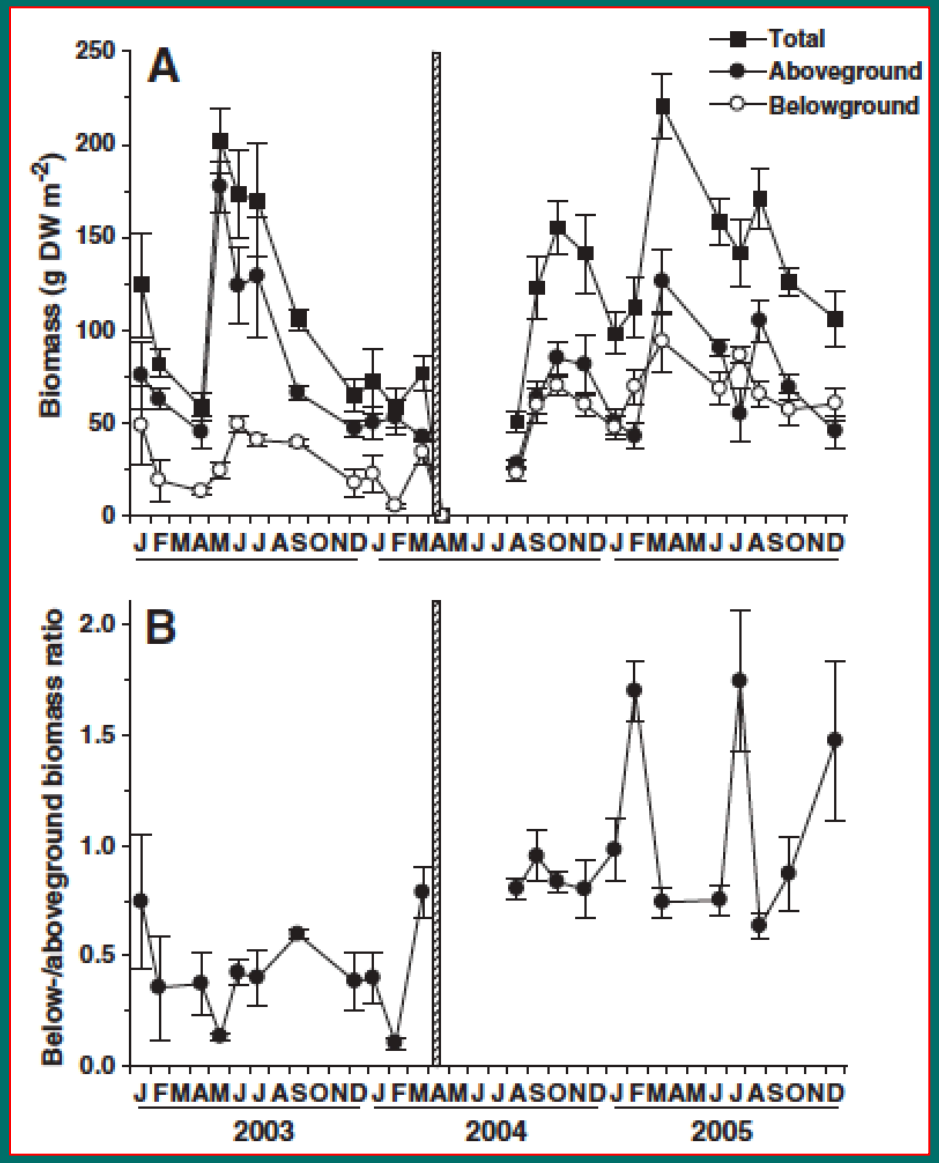


Park, et al 2011

Shoot Density



Biomass



Park, et al 2011

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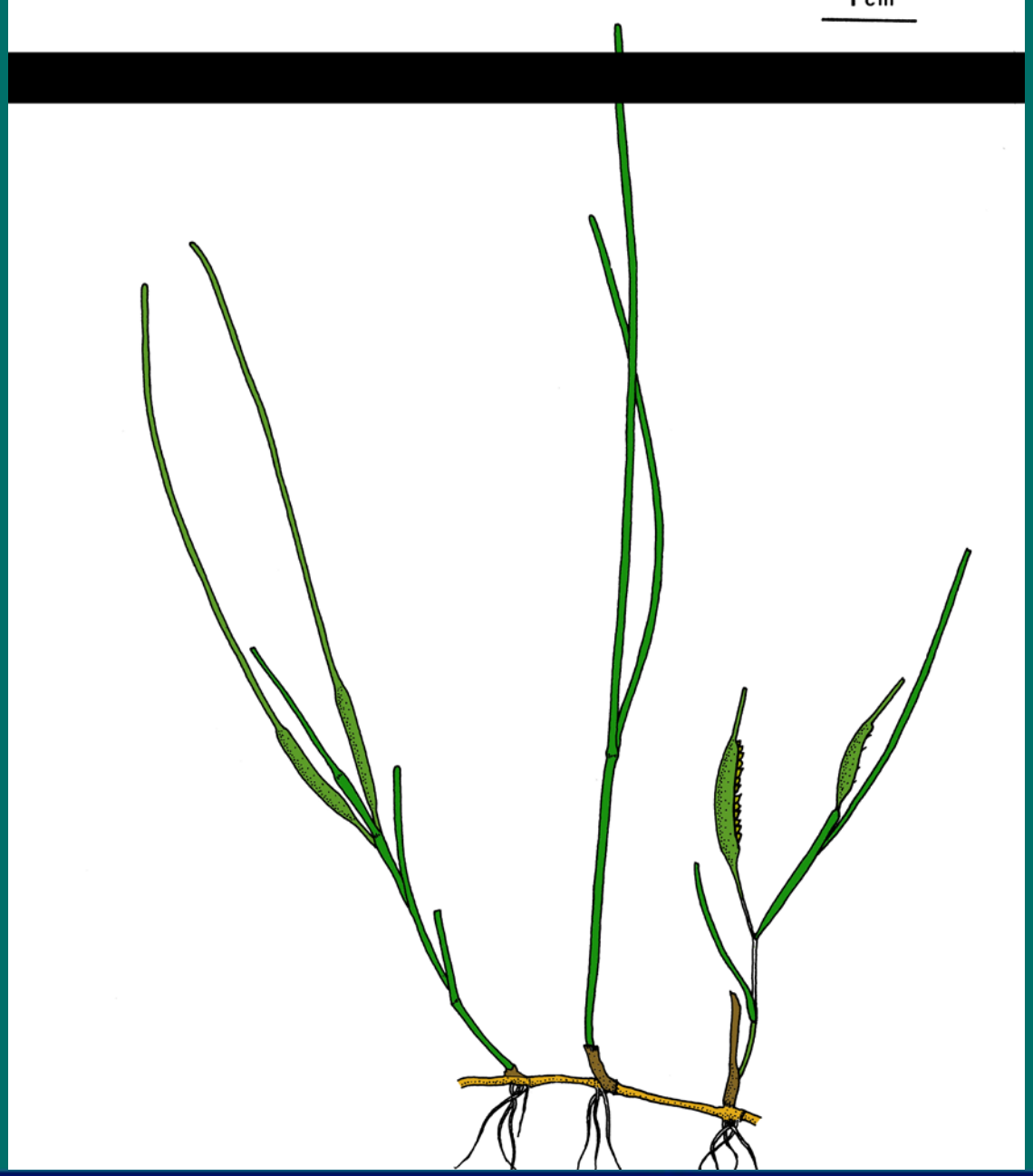
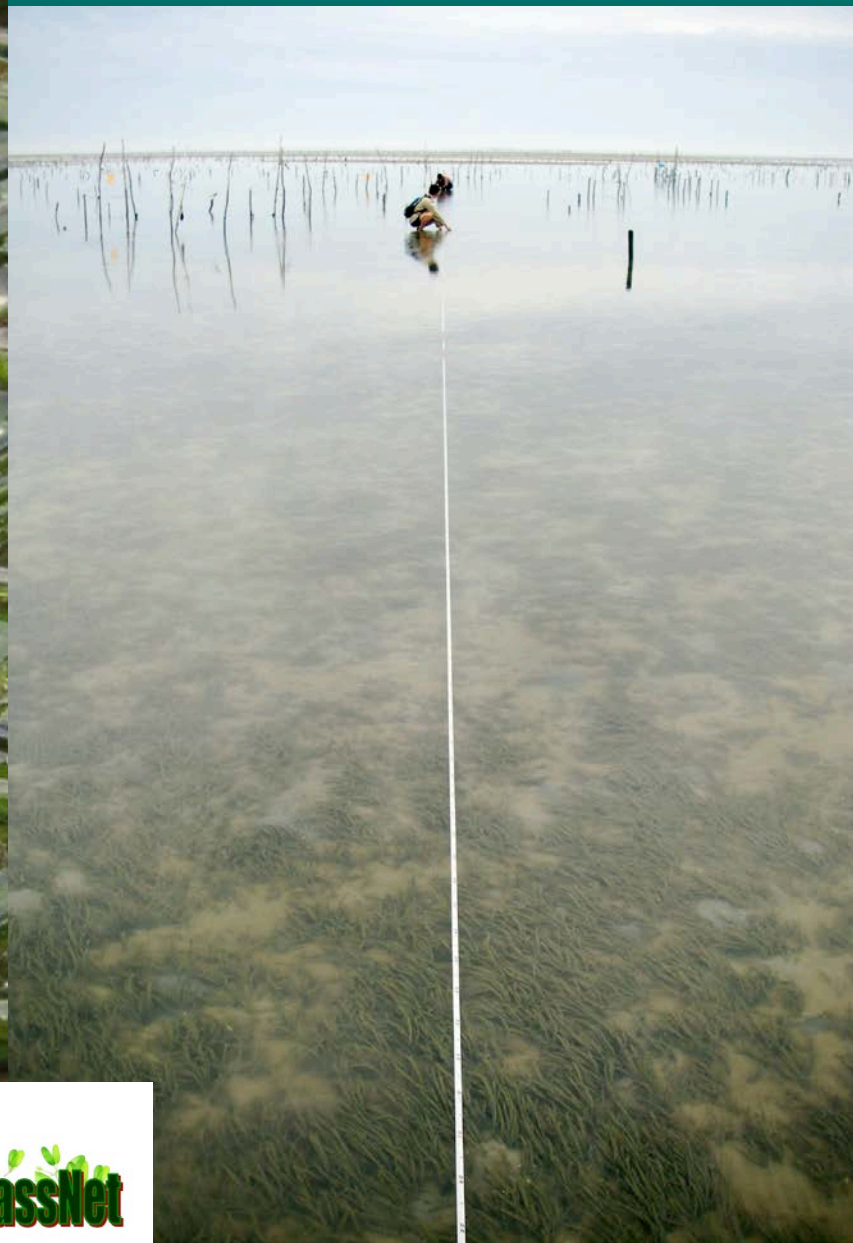
Zostera japonica flowering shoot in Korea

Zostera japonica
Plant with flowering shoots



China



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Vietnam

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