Model Project on the Ecosystem Data Management



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豊かな汽水環境のために

Towards a Richer Environment
in Estuaries and Coastal Lagoons

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汽水域多様性解析研究分野
Diversity Research Section

地球上にはきわめて多くの生物が生息し，人類の生存基盤である多様な生態系を形づくっています．沿岸域の開発や集水域からの汚染物質の流入といった人為の影響を特に強く受ける汽水域生態系における多様性の保全は，集水域を含む統合的な管理よってのみ達成されます．

そこで汽水域多様性解析研究分野では，汽水域生態系の保全，人間と自然の共存および汽水域資源の有効利用のための理論的裏付けと長期的視野に立った提言を行うため，さらに汽水域の持続的な発展と未来可能性を追求するため，生物と社会の多様性の形成機構と維持機構に関する以下の調査・研究を進めます．

- 汽水域の複雑な環境を利用した生物の生活史戦略の解明
- 生物多様性を取り巻く劣化した環境の修復技術の確立
- 汽水域における生態系と漁業のかかわりに関する研究
- 汽水域・流域における環境変化と社会の多様性の相互関係の解明

The diversity of life is our most valuable but least appreciated resource. Interactions between the natural environment and human social systems in estuaries and coastal lagoon areas are complex, but the biological diversity in these areas can be maintained by integrated management of the catchment areas.

To conserve and restore degraded environment, we carry out research aimed at:

- surveying the fauna and flora in estuaries and coastal lagoon areas
- creating biological wealth by restoring the degraded environment
- promoting sustainable development
- restoring natural wetlands

変動する環境下での生態系と生物の機能について理解を深めるために
To improve our understanding of how ecosystems and organisms function under changing conditions

Towards a Richer Environment in Estuaries and Coastal Lagoons

汽水域環境変動解析研究分野
Environmental Change Research Section

汽水域の環境は堆積作用や気象変化による短期的変動と，人間による開発の歴史や気候変動などの中・長期的な変動の複雑な組み合わせに支配されていると考えられます．また，汽水域の貧酸素・無酸素環境下での有機物の生成・分解・堆積過程は，地球システム変動に重要な役割を果たしたと考えられる海洋無酸素事件（OAE）の現行モデルとして注目されています．

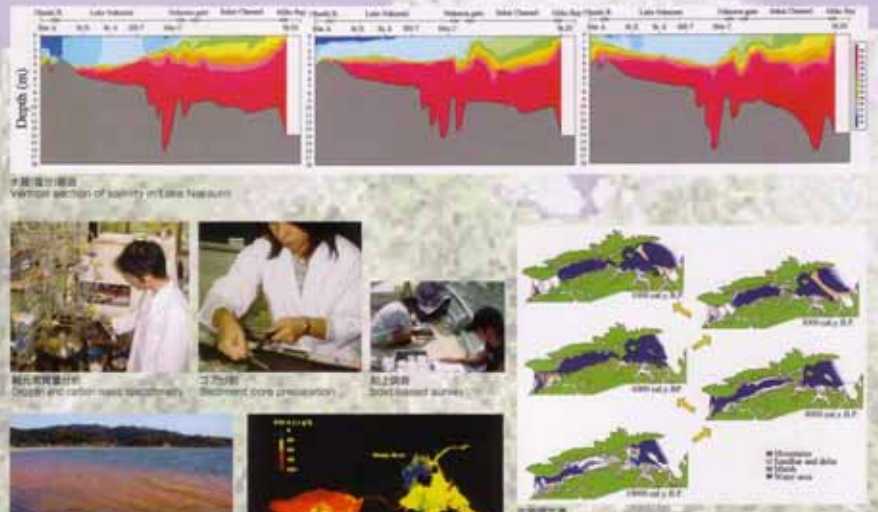
本研究分野では，次の3つの柱に沿って研究を進めていきます．

- 現在起こっている環境変化を記録し，そのメカニズムを解明する「現行過程」の研究
- 地球環境の枠組みにおける炭化水素化合物の固定を念頭に置いた環境情報の堆積物への「保存過程」の研究
- 堆積物から環境変動情報を読みとり，解析する「古環境解読」に関する研究

Environmental change in brackish-water zones is controlled by a complex system incorporating short-term effects, including tidal cycles and changes in weather, and medium- to long-term effects such as global climatic change and the history of human development. The processes of generation, decomposition and accumulation of organic matter in stagnant coastal lagoons form part of the existing Ocean Anoxic Event model, operation of which has played an important role in the change of global systems throughout Earth history.

The main aims of this section are:

- Observation and research of the ongoing processes of environmental change
- Research on the processes and mechanisms in the recording of environmental information in bottom sediments, with emphasis on hydrocarbon accumulation related to global environmental change
- Decoding and analysis of long-term environmental change, based on the records contained in bottom sediments



In the year 2000, the land reclamation project in Lake Nakaumi was officially discontinued, leaving Honjou area unreclaimed. Shortly thereafter, the desalination project was also terminated. In July 2003, the president of the Shimane Prefectural Government expressed a wish to designate the lakes for inclusion in the list of wetlands of international importance, and the lakes were registered as Ramsar sites in 2005.

Current environmental problems in Lakes Shinji and Nakaumi

Water bloom

塩分濃度の低い宍道湖を中心に発生

アオコは水面近くに植物プランクトンが大量に発生し、湖面を緑色に変色させる現象です。

Red tide

塩分濃度の高い中海を中心に発生

赤潮は植物プランクトンが大量に発生し、湖面を赤褐色に変色させる現象です。

Blue tide

魚類の斃死（へいし）や水質悪化を招く

強風により湖下層の無酸素水が湖底から沿岸の浅瀬へ移動することにより起こる現象です。無酸素による魚介類の大量へい死を招きます。

Deep hollows causing anoxia

くぼ地が招く水質悪化

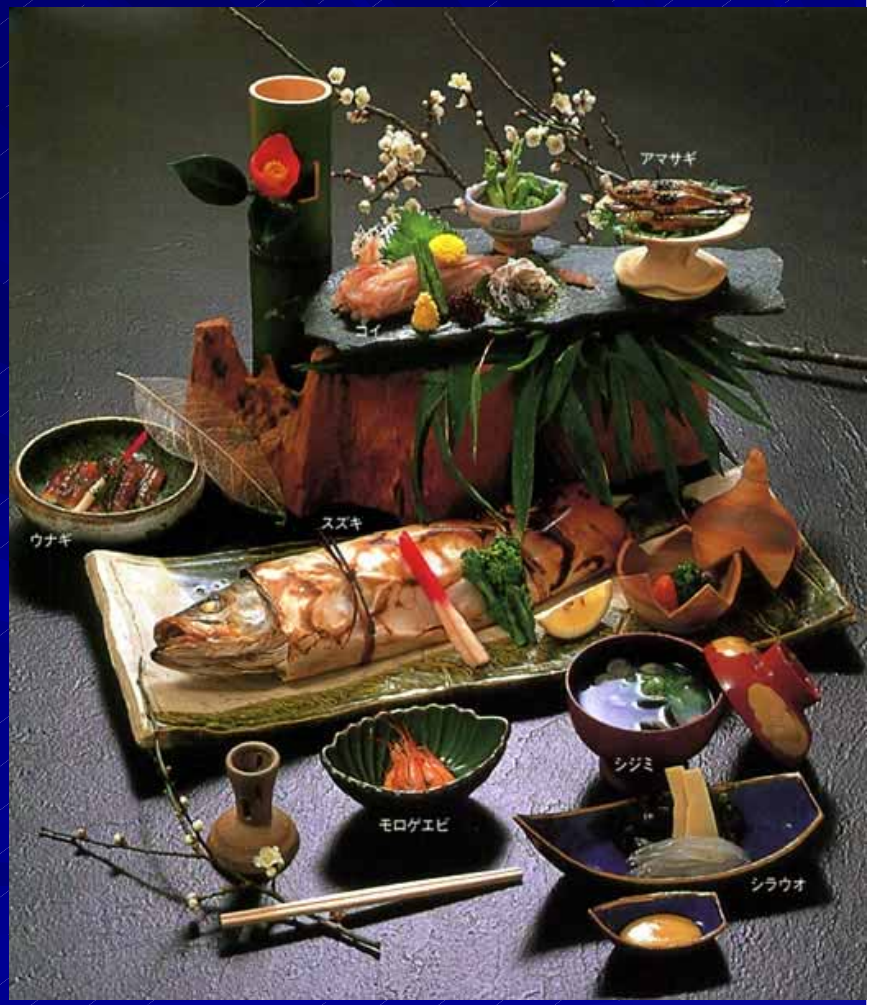
境水道から米子湾にかけ干拓などによる埋立土砂採取のため、深い所では水深14mを超えるくぼ地が点在しています。くぼ地の中は湖水の滞留が長期に続くため、水中の酸素が無い水域となります。酸素が無くなると高濃度の窒素・リンが湖底から溶出するだけでなく硫化水素など魚介類へ悪影響を与える物質も溶出します。

Artificial concreted bank

人工的な湖岸への改変で植生帯や浅場が減少

湖岸の植生や、浅場に生息する魚介類・鳥類による自然の浄化機構が失われつつあります。

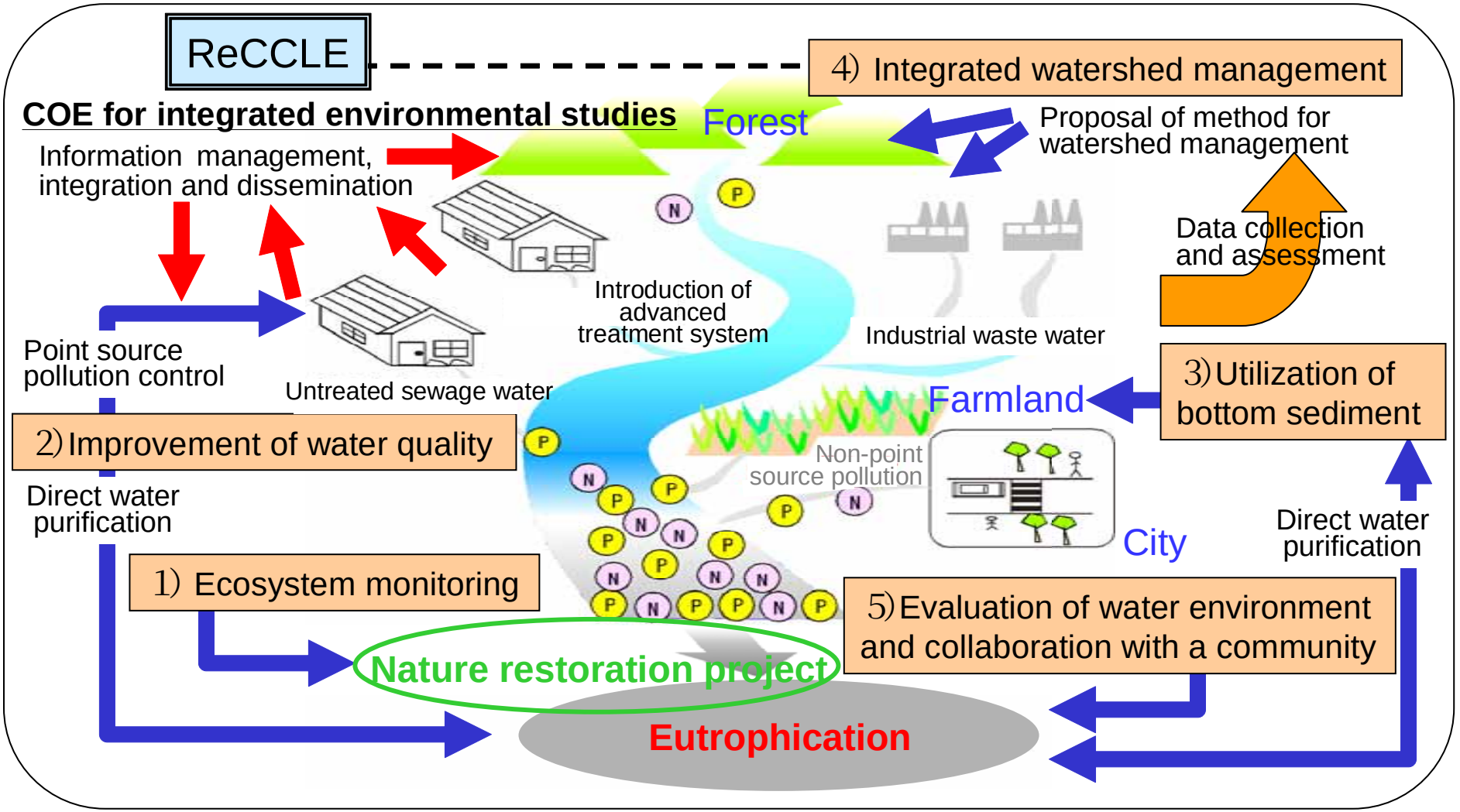
In Lake Shinji, there are still large productions of shijimi (*Corbicula japonica*)



Seven delicacies of Lake Shinji

Thus, we are now restoring/rehabilitating Lake Nakaumi and conserving Lake Shinji

Establishment of a COE for environmental studies of estuaries and coastal lagoon systems



Topics that will be addressed by the COE, to be established by the integration of advanced technology and collaborative ecosystem monitoring

JaLTER

JaLTER (Japan Long-Term Ecological Research) network was established in November 2006 to provide scientific knowledge which contributes to conservation, advancement and sustainability of environment, ecosystem services, productivity and biodiversity for a society by conducting long-term and interdisciplinary research in ecological science including human dimensions.

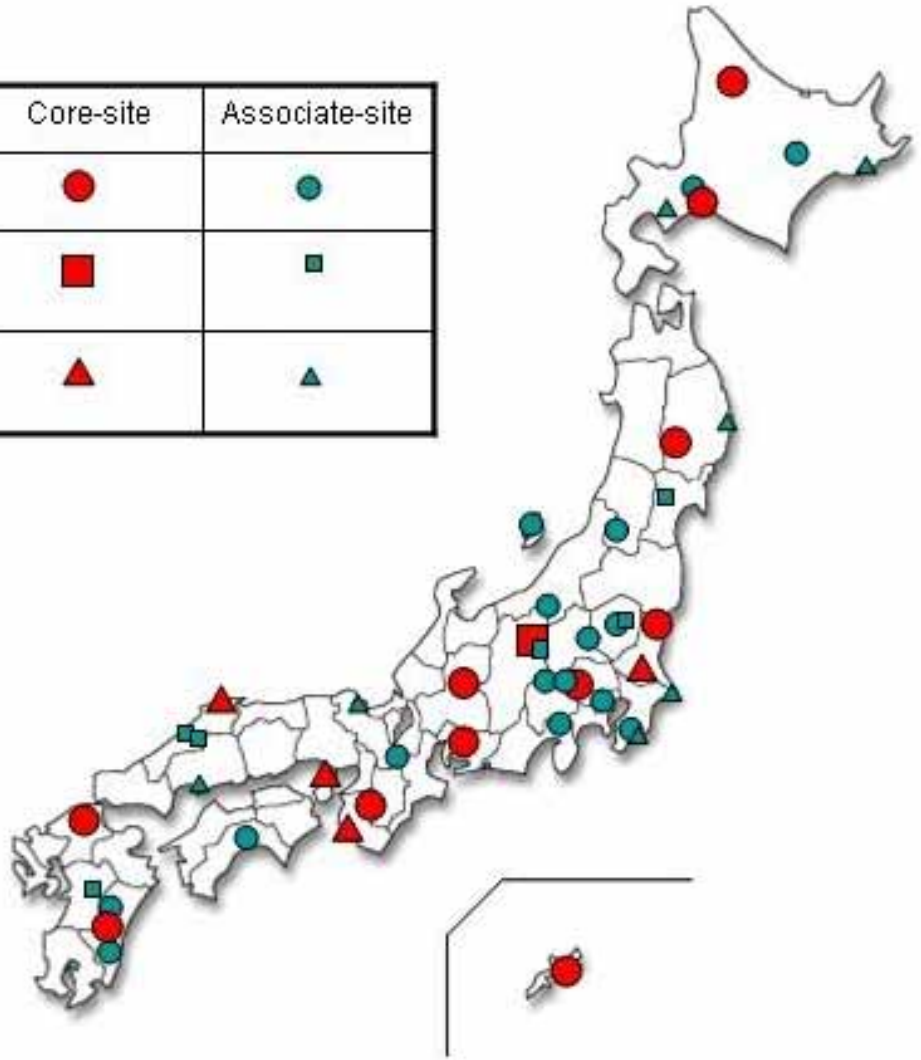
The JaLTER became an official member of the International Long-Term Ecological Research (ILTER) network in August 2007.

Goals of JaLTER

- Creation of general knowledge based on multidisciplinary long-term and large-scale research
- Creation of well-designed database to exchange and share original data to support scientific communities, general public people and policy makers, and to find better solutions for critical ecological and environmental problems
- Promotion of education regarding long-term and large-scale changes of ecosystem and environment
- Facilitation of collaboration and coordination among scientists of long-term ecological researches.

Distribution map of JaLTER sites

	Core-site	Associate-site
Forest	●	●
Grass land	■	■
Lake and estuary	▲	▲

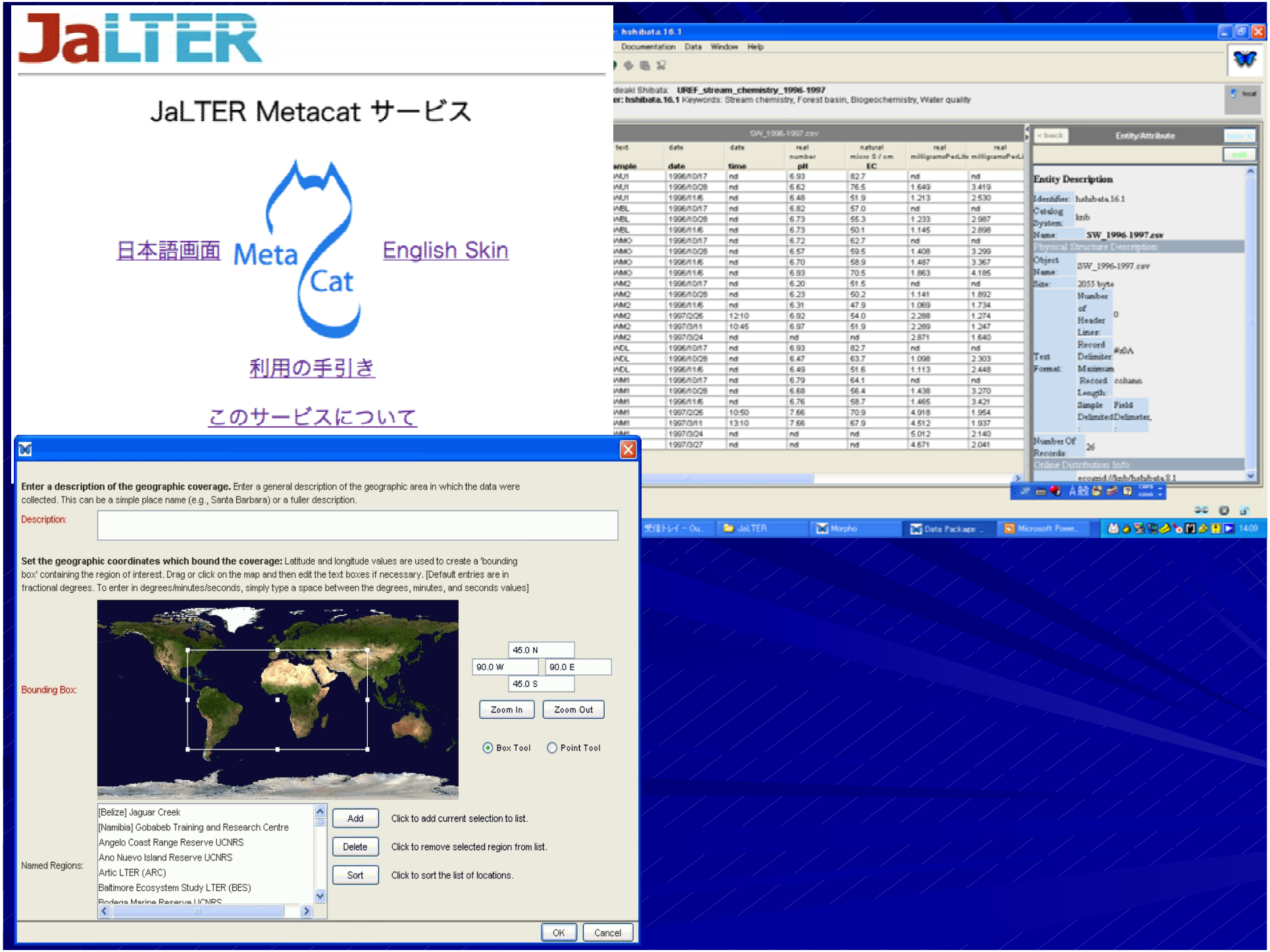


JaLTER site network (April 2008)

JaLTER Database

- JaLTER database is developed to archive various kinds of ecological and related data in open metadata catalogues for promotion of further long-term and interdisciplinary network researches.

- JaLTER information management committee take roles of planning, discussion and establishment of data management strategy, data policy and technical development. EML (Ecological Metadata Language) and Metacat (Metadata Database) is utilized same as in International LTER (ILTER).


JaLTER
JaLTER Metacat サービス
日本語画面
Meta Cat
English Skin
利用の手引き
このサービスについて
Enter a description of the geographic coverage. Enter a general description of the geographic area in which the data were collected. This can be a simple place name (e.g., Santa Barbara) or a fuller description.
Description:
Set the geographic coordinates which bound the coverage: Latitude and longitude values are used to create a 'bounding box' containing the region of interest. Drag or click on the map and then edit the text boxes if necessary. [Default entries are in fractional degrees. To enter in degrees/minutes/seconds, simply type a space between the degrees, minutes, and seconds values]
Bounding Box:
45.0 N
90.0 W
90.0 E
45.0 S
Zoom In
Zoom Out
Box Tool
Point Tool
Named Regions:
[Belize] Jaguar Creek
[Namibia] Gobabeb Training and Research Centre
Angelo Coast Range Reserve UCNRS
Ano Nuevo Island Reserve UCNRS
Artic LTER (ARC)
Baltimore Ecosystem Study LTER (BES)
Add
Click to add current selection to list.
Delete
Click to remove selected region from list.
Sort
Click to sort the list of locations.
OK
Cancel
Entity/Attribute
Entity Description
Physical Structure Description

Establishment of Metadata Database

DB Server

Search/Retrieve

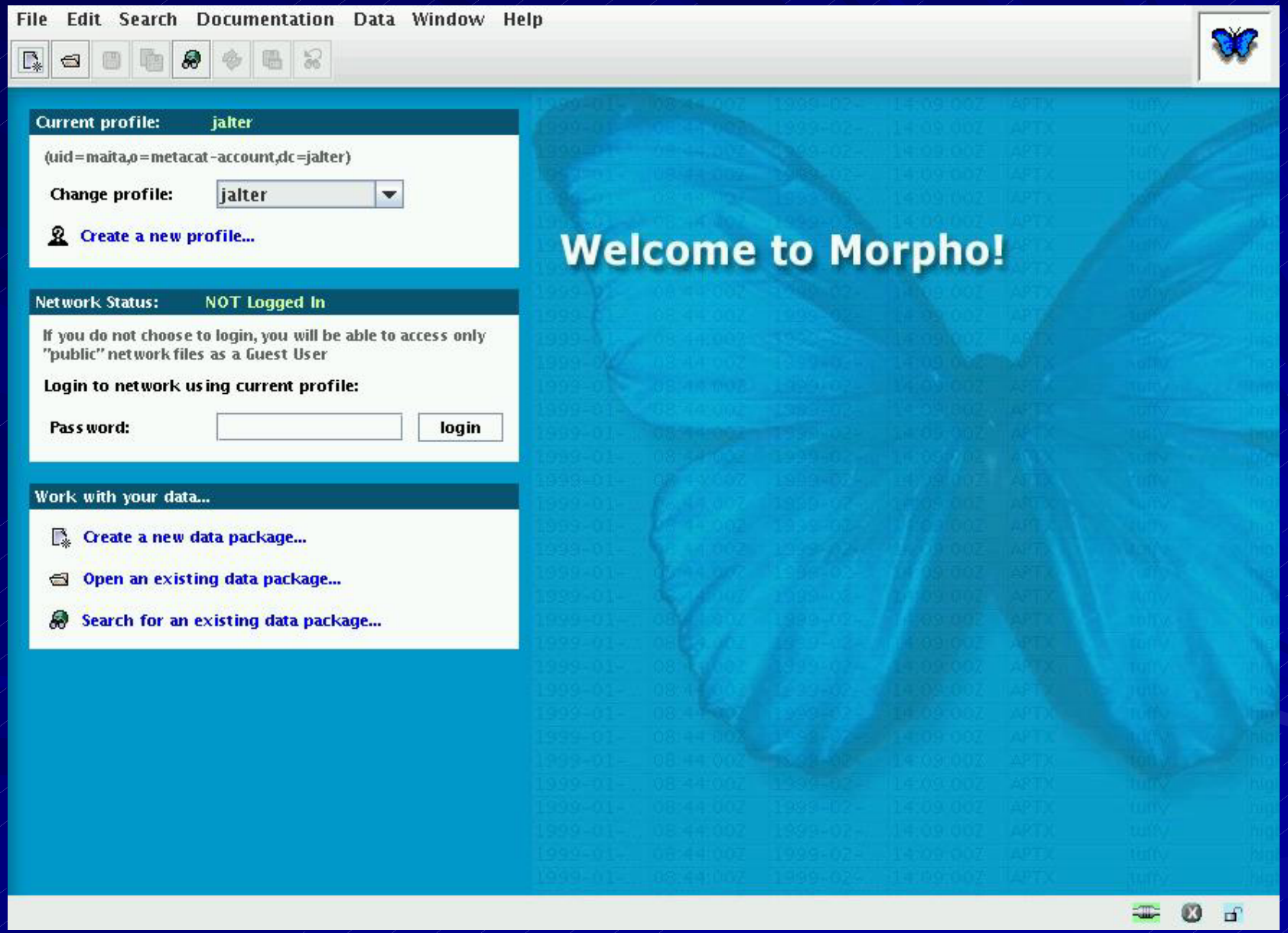
WEB Browser

Data Input

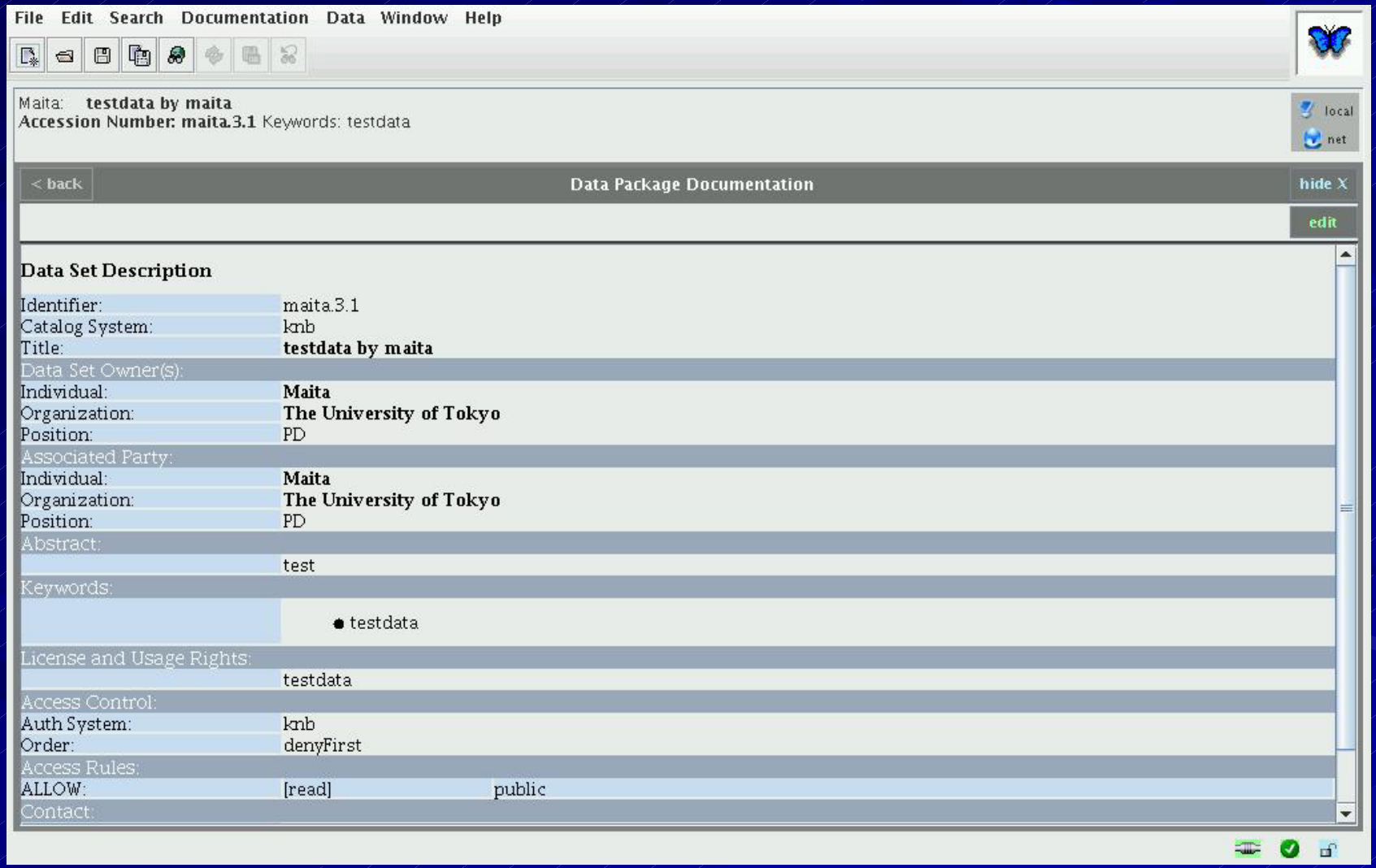
Morpho

Data Input Software

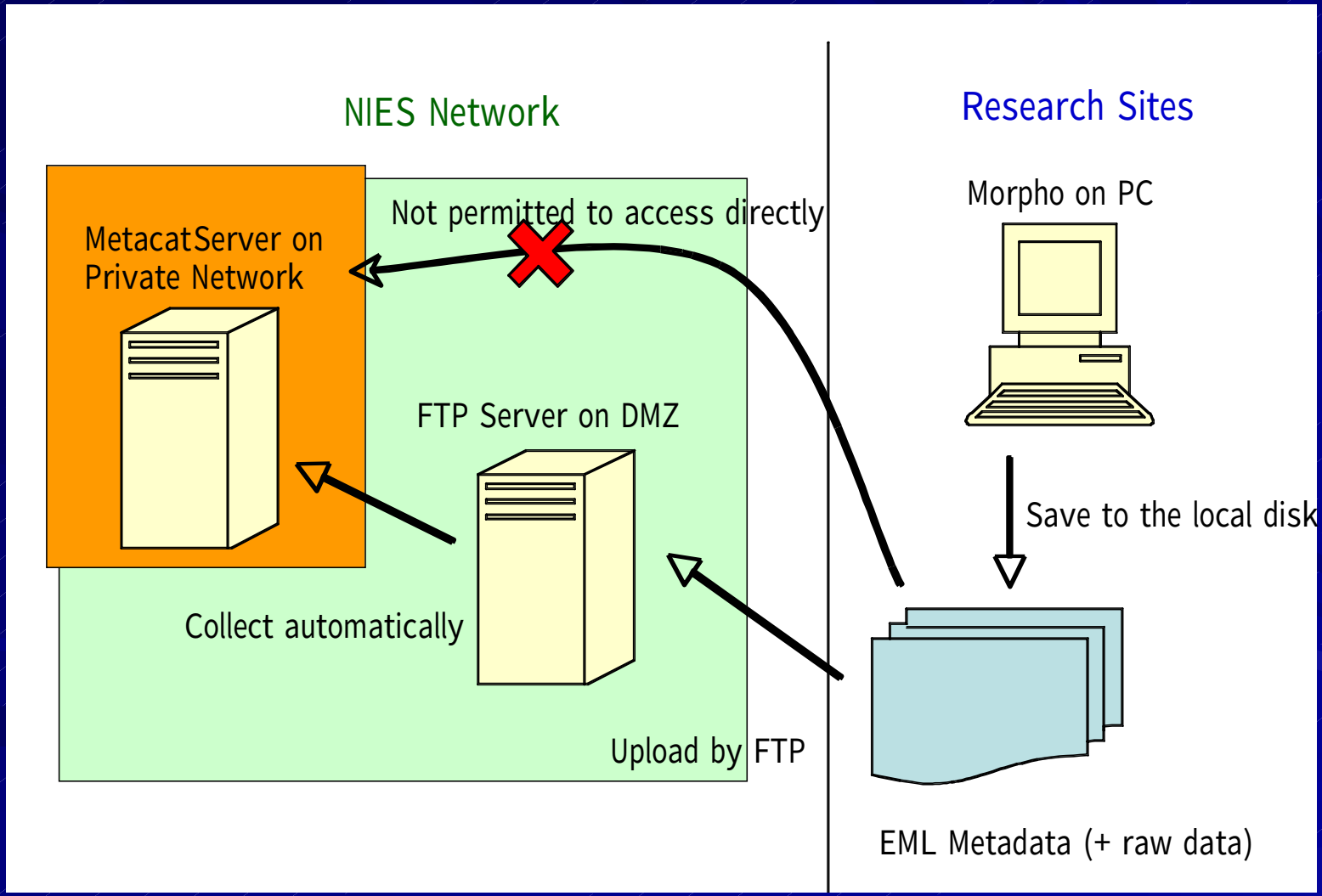
Morpho Data Management Software



Morpho Data Management Software



Procedure to collect ecological dataset from research sites of JaLTER



ファイル(F) 編集(E) 表示(V) 移動(G) ブックマーク(B) ツール(T) ヘルプ(H)

http://japolo.guardianworld:8180/knb/

移動

JaLTER root 最新ニュース

Data Catalog Search

Home

データの検索

You are NOT logged in (**Login**)。ログインしなくてもデータカタログを検索することはできますが、その場合は公開データ(public data)のみアクセスできます（"ログインおよび登録"を見てください）。
データセット検索のための語句（例・生物多様性）を入力するか、下のリンクを使ってカテゴリごとに閲覧してください。

Search Data Catalog » より進んだ検索 «

分類

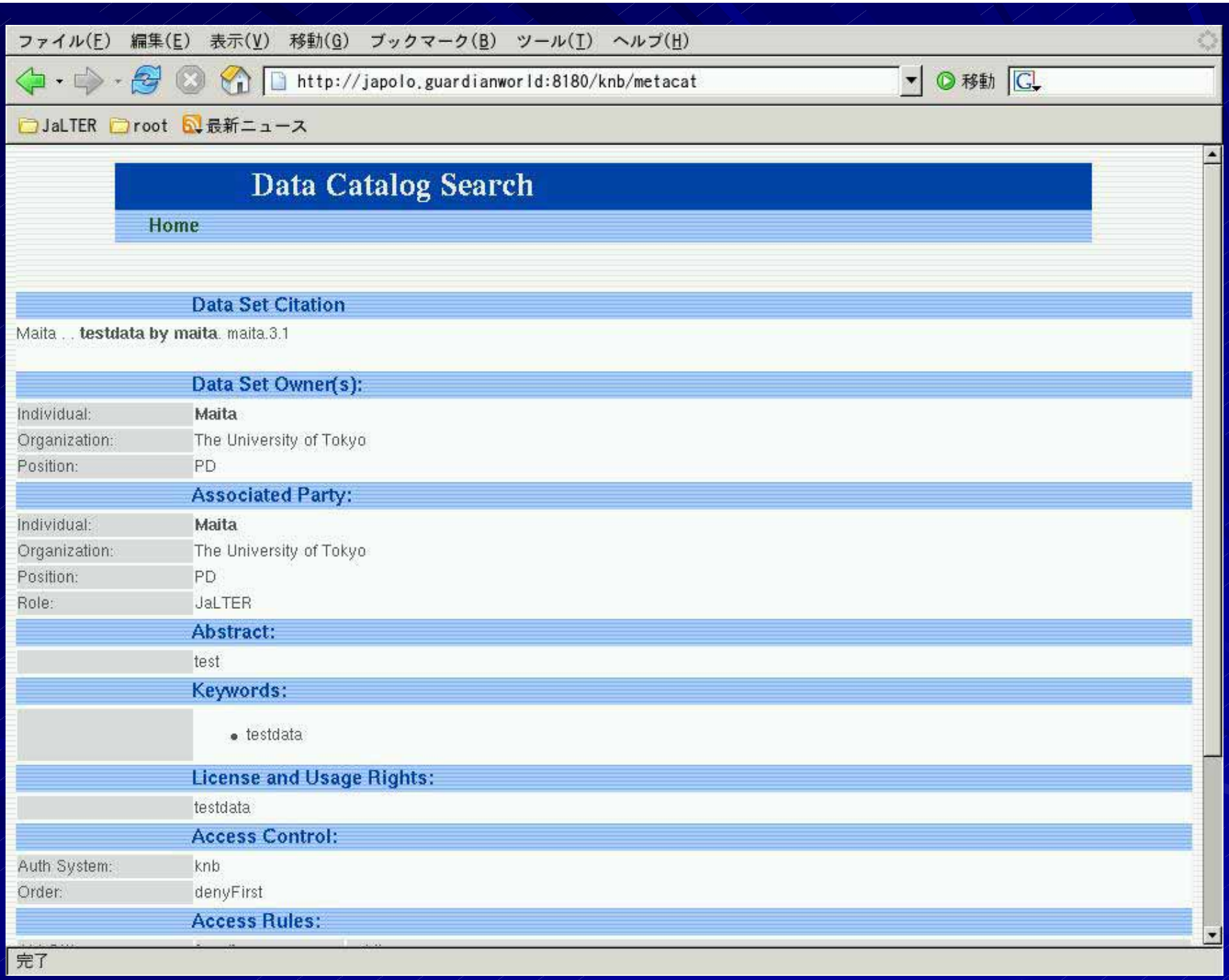
植物(Plant), 無脊椎動物(Invertebrate), 哺乳動物(Mammal), 鳥類(Bird), 爬虫類(Reptile), 両生類(Amphibian), 真菌類(Fungi), 細菌(Microbe), ウイルス(Virus)

生息地

高山(Alpine), 水中(Aquatic), 海岸(Beach), 水底(Benthic), 沙漠(Desert), 入江(Estuary), 森林(Forest), 草地(Grassland), 海(Marine), 山岳(Montane), 海洋(Oceanic), サバンナ(Savanna), 灌木地(Shrubland), 陸上(Terrestrial), ツンドラ(Tundra), 都市(Urban), 湿地(Wetland)

Data Catalog Map

完了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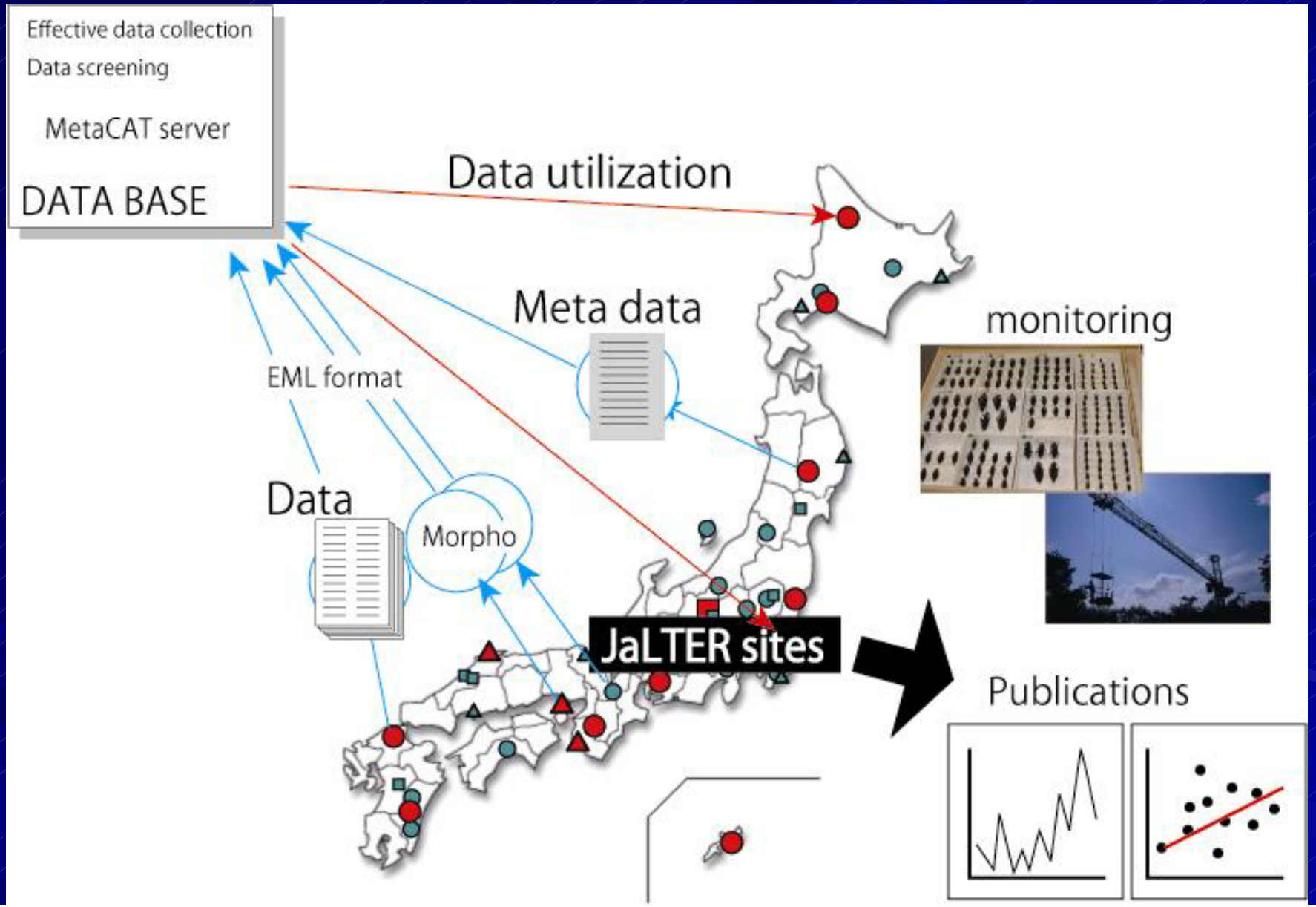
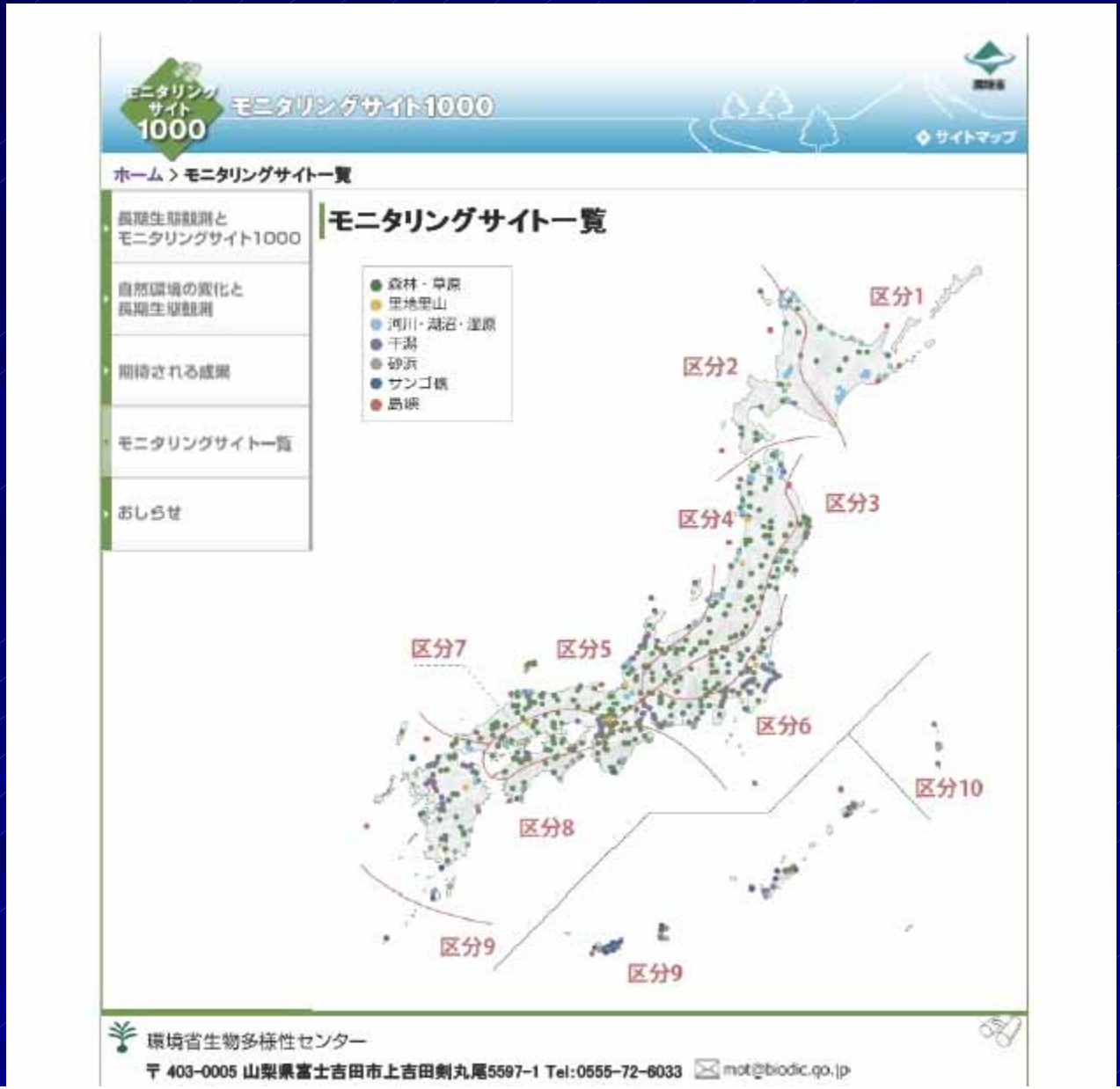
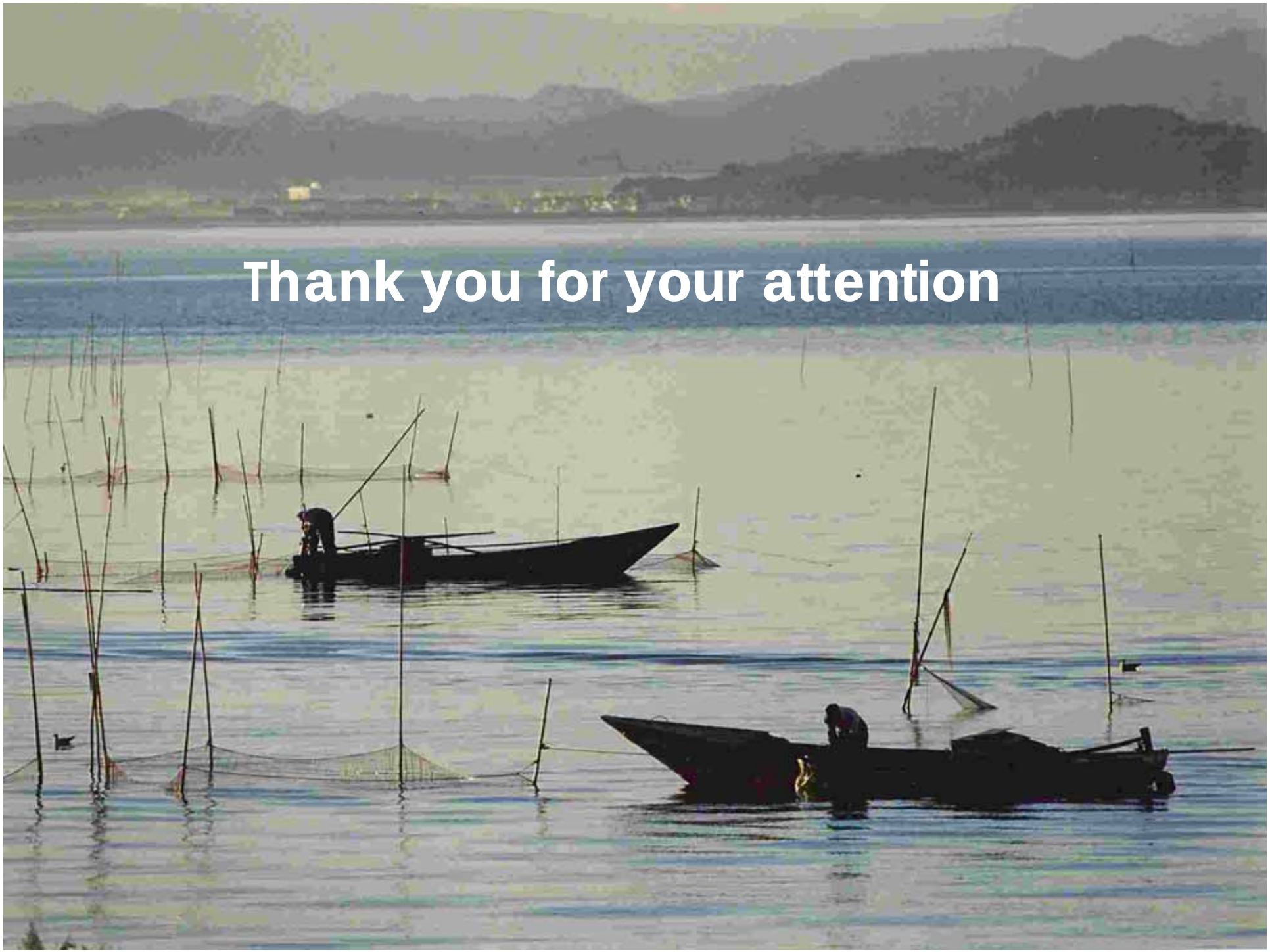
http://japolo.guardianworld:8180/knb/metacat
移動
JaLTER
root
最新ニュース
Data Catalog Search
Home
Data Set Citation
Maita . . testdata by maita. maita.3.1
Data Set Owner(s):
Individual: Maita
Organization: The University of Tokyo
Position: PD
Associated Party:
Individual: Maita
Organization: The University of Tokyo
Position: PD
Role: JaLTER
Abstract:
test
Keywords:
testdata
License and Usage Rights:
testdata
Access Control:
Auth System: knb
Order: denyFirst
Access Rules:
完了

Structure of JaLTER database



Cooperation with Monitoring Site 1000




Thank you for your attention