出國報告（出國類別：其他）

出席「Metacat & Morpho workshop」工作坊擔任講師報告

目　次

一、目的

　　本出國案件爲泰國國際長期生態研究網絡 (THAI-ILTER) 主持機構國立農業大學 (Kasetsart University) 爲推動生態資訊管理實務，故舉辦 Metacat & Morpho 生態資訊管理系統建置及資料建檔工作坊。THAI-ILTER 爲國際長期生態研究網絡 (International Long-term Ecological Research Network, ILTER) 組織成員之一，該網絡成員亦曾派員赴台參加我方主辦之生態資訊管理課程，對方基於以往合作經驗，來函邀請我方前往協助該國舉辦之生態資訊管理工作坊教學。本次赴泰國協助舉辦教學工作坊，除有助於國際生態研究資訊管理觀念及相關資訊技術之推廣外，亦可增進我方與泰國長期生態研究網絡之學術交流。

二、過程

一、課程地點及日程：

　　本次工作坊於泰國曼谷國立農業大學森林系舉辦，爲期共 5 天。

日期	起訖地點	工作任務
9/4(二)	台北-曼谷	去程
9/5(三)	曼谷	擔任課程講師
9/6(四)	曼谷	擔任課程講師
9/7(五)	曼谷	擔任課程講師
9/8(六)	曼谷-台北	擔任課程講師：返程

二、課程內容：

　　抵達國立農業大學當日下午，即開始協助架設 THAI-ILTER 官方 Metacat 生態資訊資料庫主機，以供本次課程實際操作以及後續上線運作之用。當日並與本次工作坊負責人 Dr. Yongyut Trisurat 討論四天的課程綱要以及上課流程。

1. 課程第一天 (9 月 5 日)

　　早上研習工作坊正式開始。先由馬來西亞林業試驗所 (Forest Research Institute Malaysia, FRIM) 生態資訊管理人員 Omarali Abdul Rahim 介紹生態資料管理的基本觀念，接著由我方介紹生態資料管理、倉儲及分享之重要性，以本所推廣生態資訊管理業務及生態資訊倉儲實務經驗為例，介紹台灣目前生態資訊系統現況，並與泰國當地研究人員進行問題討論及經驗交流。接著，正式進入生態資訊管理課程，首先介紹生態後設資料語言 EML (Ecological Metadata Language) 之概念及其應用方式。下午，開始進行生態後設資料編輯軟體 Morpho 的介紹及安裝，帶領完學員們安裝軟體後，進行初步的系統運作原理及軟體介面操作方式的簡介。

2. 課程第二天 (9 月 6 日)

　　本日開始介紹生態後設資料之建置流程，並帶領學員使用範例資料進行 Morpho 軟體實際操作練習。本日的教學進度是產生描述生態研究資料集後設資訊 (metadata) 的 EML 文件 (EML document)。這部份的步驟共分為 15 步驟。Morpho 使用逐步引導的方式讓使用者完成包括研究題目、摘要、關鍵字、研究人員資訊、研究地點、研究時間、研究分類群、研究方法…等資訊的填寫工作。學員們須能順利使用範例資料進行 EML 文件之各個欄位填寫，完成後儲存於電腦中，並須能順利上傳至 THAI-ILTER 官方 Metacat 主機中。完成範例資料的建置練習後，學員們亦嘗試使用自己帶來的研究資料進行文件建置。此步驟同時亦驗證了 Morpho 軟體及 Metacat 資料庫對於泰文的相容性，學員使用泰文填寫後設資料欄位進行存檔及上傳皆沒有出現問題。

3. 課程第三天 (9 月 7 日)

　　接續前一日的教學內容，本日進行生態研究資料原始數據之後設資料描述，以及數據匯入之操作教學與練習。這部分是生態後設

資料集中最複雜，最需要詳細說明的步驟。課程內容從數據資料的測量尺度 (measurement scale) 判斷、原始數據檔格式轉換（從 Excel 檔轉換為純文字檔）、檔案雙位元編碼格式轉換…等，對於電腦操作較為不熟悉的研究人員來說，需要較多的時間進行說明及練習。學員完成資料格式轉換、後設資料填寫、匯入原始數據並完成存檔後，至此才算完成一份完整生態研究資料集的建檔工作。除了範例資料的操作練習之外，學員們也嘗試使用自己所擁有的研究數據進行資料匯入操作。

4. 課程第四天 (9 月 8 日)
   本日是工作坊的最後一天，課程只有上午部分。最後僅針對 Morpho 軟體的進階功能，資料備份方法進行補充說明。完成課程介紹後並進行了簡短的結業式。

三、心得

　　本次前往泰國擔任 Metacat & Morpho 生態資訊管理課程講師。四天課程中，與該校研究人員及泰國自然保育主管單位人員多有互動。除了工作坊本身的生態資訊管理課程介紹以外，休息時間的交流過程，透過談話也了解到，泰國對於生態研究資訊管理的觀念及風氣也正處於剛起步之階段。研究人員對於研究資料的分享，一方面對於建檔、上傳等電腦操作程序並不熟悉，另一方面對於上傳的資料是否會被不當使用亦仍存有不確定之心態。這些問題在我方推行生態資訊管理之實務經驗中，也都遭遇過類似的瓶頸。藉由此次與泰方的交流，除了生態資訊管理資訊技術之推廣外，對於資料倉儲分享之觀念，也能夠透過面對面的交談，分享我方在這方面的心得與建議。

四、建議

　　本次赴泰國協助舉辦教學工作坊，有助於生態研究資訊管理觀念及資訊技術之推廣。而泰國長期生態研究網絡之生態資訊管理工作仍處於起始階段，如能透過後續更積極的技術與經驗分享，可增進我方與泰國長期生態研究網絡之學術交流。

五、附錄：「**Metacat & Morpho workshop**」工作坊 教材簡報

Biological Ecological Sciences

RESEARCH
EDUCATION

Collaboratories and Manpower
Observatory Networks | Information Management System | Synthesis Hubs and Nodes
Fundamental Research
Cyberinfrastructure

Necessary of information manage system

Primary data

Management, Archiving, & Curation
Discovery, Retrieval, & Integration
Analysis, Synthesis, & Forecasting

Knowledge

Informatics

An Eco-cyberinfrasturcture vision

Data management
Data collecting
Data transfer
Data application

An international envolved platform

Technical application of ecoinformatics

Software tools | Information exchage standard

Biodiversity | Ecology | Biology

Integrate and Synthesize Information Automation (Scientific workflow)

Information Sharing
• *Machine handle (Web Service Grid Computing)*
• *Data exchange (XML) /Networking*

Information Management
• *Storage Resource and technology (Broker)*
• *Safe Backups (Complete metadata)*

Data Collection
• *Statistics (QA/QC)/DBMS*
• *Documentation of data (Metadata)*

Darwin Code
Ecological Metadata Language
Life Science Identification (LSID)

Softwares implementation and application

Morpho → MetaCat / SRB → Kepler

Metacat-based ecoinfomation management in Taiwan

EML
NGIS Metacat
林試所 Metacat
分散的雲端連結系統
國科會 Metacat
國家公園 Metacat
農試所 Metacat
營建署 Metacat

Non-centralized data-infomation management system

Internet
Forest
User-1 User-2 User-3
Agriculture
National Park
NGIS
Authentication
Database Server ↔ Metadata Server

Data sharing:
the basement of
management policies

Raw data + metadata
= data

The features of the Web
Link, open public, sharing

The "traditional" cycle of data usage

Publications
Raw Data
Analysis and modeling
Collection
Problem
Planning

The new route of data usage

Publications
Archive of Data
Collection
Analysis and modeling
Selection and extraction
Original Observation
Secondary Observation
Planning
Problem Definition (Research Objectives)
Planning

Synthesis, publish, and knowledge re-generation

User-1 User-2 User-3

Example: Distribution pattern modeling of Taiwan Fir (Abies kawakamii)

(Abies Kawakamii)

How Taiwan Fir distribution will be influenced by global warming effect?

Taiwan Fir Distribution Predicted

1990   2020   2050

Any Single Problem Requires Many Data Sets
Any Single Data Set Serves Many Applications

THE GLOBAL EARTH OBSERVATION
SYSTEM OF SYSTEMS

INFORMATION
FOR THE BENEFIT
OF SOCIETY

感謝參與

Introduction of Ecological Metadata Language

Chen, Chien-Wen
2012,Sep,5

Why data archiving?

- Preserve datasets, re-use of data, elevation of the value of datasets
- Sharing, integration, synthesis of research datasets can promote the coopration for long-term, large scale research topics
- data publishing, data paper, data citation

Publishing data papers
– data provider get reward from data publishing
- A new creature in the biodiversity world: the data paper (http://blog.datadryad.org/2011/06/03/a-new-creature-in-the-biodiversity-world-the-data-paper/)
- PenSoft data publishing guideline (http://www.pensoft.net/page.php?P=23)
- International repositories of data KNB (http://knb.ecoinformatics.org/index.jsp) GBIF (http://www.gbif.org/) Dryad (http://www.datadryad.org/)

ESA Ecological Archive
http://esapubs.org/archive/archive_D.htm

Ecological Research
http://www.springer.com/life+sciences/ecology/journal/11284

Ecological Research
http://www.springerlink.com/content/0912-3814/?MUD=MP&k=data+paper


Data archive

- Metadata
  - Data content description and definition of the fields in tables
- Standard
  - W3C validated exchange protocol
- Tool
  - Improvement of dataset describing and archiving

What is 'Metadata'?

- Meta
  - after, beside, between, beyond, or with
- Metadata:
  - Information about data
  - Data description
  - Data about data

  "higher level information that describe the content, quality, structure, and accessibility of a specific data set"
  Michener et al., 1997
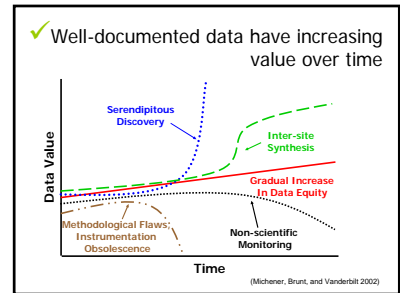

Characteristics of Research Data
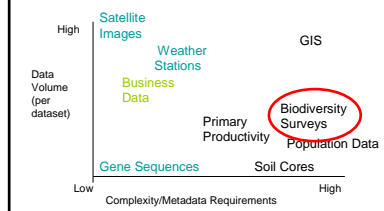
Why metadata is important?

	Date (YYYYMMDD)	Temp (°C)	Precip. (mm)
Obs. #1	20040928	29.4	18.4
Obs. #2	20040929	29.7	4.2
Obs. #3	20040930	28.9	21.3

Metadata   **Data**

Genus	Species	Common Name	Observer	Date
Quercus	alba	White Oak	Jones, D.	15-Jun-1998
Quercus	alba	White Oak	Smith, D.	12-Jul-1935
Quercus	alba	White Oat	Doe, J.	15-Sep-1920
Quercus	rubra	Red Oak	Fisher, K.	15-Jun-1998
Quercus	rubra	Red Oak	James, J.	15-Sep-1920

✓ Well-documented data have increasing value over time

(Michener, Brunt, and Vanderbilt 2002)

Metadata – Two examples

Benson, Barbara
Trout Lake Temperature
Water temperature data was collected hourly at Trout Lake

Trout Lake Temperature
Water temperature data was collected hourly at Trout Lake from January 1, 2005 to December 31, 2005
Collected by Barbara Benson

Both metadata documents are readable by humans, can't be processed by a computer into new forms because both the content and structure are different

---

Metadata – Content Standardized

Originator: Benson, Barbara
Trout Lake Temperature
Water temperature data was collected hourly at Trout Lake
Start Date: January 1, 2005
End Date: December 31, 2005

Trout Lake Temperature
Water temperature data was collected hourly at Trout Lake
Time period: January 1, 2005 to December 31, 2005
Originator: Benson, Barbara

Now both metadata documents have the same content – title, originator, etc. but it still can't be automatically processed by a computer because the structure is different

---

Metadata – Structure Standardized

```
<title>Trout Lake Temperature</title>
<originator>
<namelast>Benson</namelast>
<namefirst>Barbara</namefirst>
</originator>
<abstract>Water temperature data was collected hourly at Trout Lake</abstract>
<date>
<start>January 1, 2005</start>
<end>December 31, 2005</end>
</date>
```

```
<title>Trout Lake Temperature</title>
<originator>
<namelast>Benson</namelast>
<namefirst>Barbara</namefirst>
</originator>
<abstract>Water temperature data was collected hourly at Trout Lake</abstract>
<date>
<start>January 1, 2005</start>
<end>December 31, 2005</end>
</date>
```

With standardized content and structure, computers can automatically extract information from the metadata.

Some other metadata standards

- FGDC Metadata Standard
- NBII Biological Data Profile
- ISO Metadata Standard

Others:
- Dublin Core
- Darwin Core
- Global Change Master Directory
- Global Information Locator Service
- National Environmental Data Referral Service
- Ecological Metadata Language (EML)

Example profile
- Dublin Core - Museum

Number of elements: 1-1000's

Abridged History of EML

Early ecological metadata work in LTER and elsewhere

TFRI get envolved
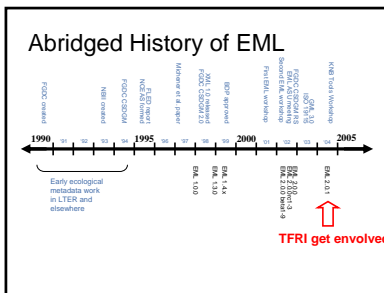
Goals of EML

- Address lack of dataset documentation
- Provide structure to traditionally unstructured information
- Aid transition toward synthetic research
- Enable both human-readable and machine-readable metadata
- Enable long-term archives
- Simple transfer format – ascii text document
- Conform to accepted Internet-based standards for the implementation of EML (XML, XML Schema)
- Community-driven development process
- Intended to be both **ancillary** and **integral** to processing data

Benefits of EML

- Scalable modulized stardand
- Capability of integrating with other present metadata standards
- Well equipped with software
- Validated as information technique standard
- Prevailing data exchange standard of ecological research communities

EML Development & Distribution

- Open Source project, welcomes contributions
- Developed by members of the community eml-dev@ecoinformatics.org
- Currently at Release 2.1.0，Releases of EML are downloadable:
  http://knb.ecoinformatics.org/software/eml/

The Knowledge Network for Biocomplexity

KNB Home Data People Informatics Biocomplexity Education Software

Software

Ecological Metadata Language (EML)
Download EML

Ecological Metadata Language (EML) is a metadata standard developed by the ecology discipline and for the ecology discipline. It is based on prior work done by the Ecological Society of America and associated efforts. EML is implemented as a series of XML document types that can be used in

EML 2.1.0 modules

- eml
- eml-access
- eml-attribute
- eml-constraint
- eml-coverage
- eml-dataset
- eml-dataTable
- eml-entity
- eml-literature
- eml-methods
- eml-party
- eml-physical
- eml-project
- eml-protocol
- eml-resource
- eml-software
- eml-spatialRaster
- eml-spatialReference
- eml-spatialVector
- eml-storedProcedure
- eml-text
- eml-unitTypeDefinitions
- eml-view

EML modules: a wrapper container
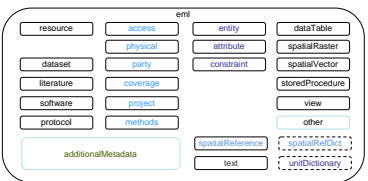
Completeness level of EML

1. Identification
2. Discovery
3. Evaluation
4. Access
5. Integration

Completeness level of EML

Completeness Level	Description and Major Elements Added
Lv. 1: Identification	1. Title 2. Abstract 3. Keywords 4. Owner 5. Associated Parties
Lv. 2: Discovery	6. Contacts 7. Usage Rights

Lv. 3: Evaluation	8. Research project information
	  • Methods
	  • Temporal Coverage
	  • Geographic Coverage
	  • Taxonomic Coverage

Completeness level of EML

Completeness Level	Description and Major Elements Added
Lv. 4: Access	9. Attribute list 10. Attribute definition 11. Measurement scale
Lv. 5: Intregration	12. raw data

Elements describing project metadata and raw data

- **Project description (metadata)**
  - Title, Abstract
  - Keywords
  - *Persons and Organization*
  - Owners, contact persons, associated parties
  - *Research information*
  - Usage Rights
  - Geographic Coverage
  - Temporal Coverage
  - Taxonomic Coverage
  - Methods
  - Access Rules

Elements describing project metadata and raw data

- **Raw data**
  - Description of datatables
  - Attribute list
  - Attribute definition
  - Measurement scale
  - Raw data physical file(s)

Editing/management tool and archiving system

Morpho
- Metadata editor

Metacat
- Data archiving system

An Example Using EML Document

Introduction and installation of Morpho

Chen, Chien-Wen
2012,Sep,5

What's Morpho?

- Graphical user-interfaced Metadata editing tool for scientists
- Java base software
- Multi-language compitabale
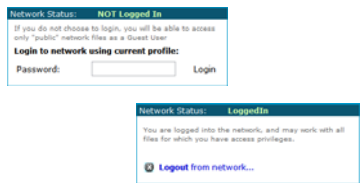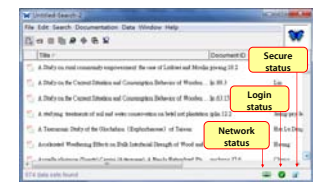 - English, Chinese, Franch, Spanish, Portuguese, Japanese so far.


Morpho Page

3
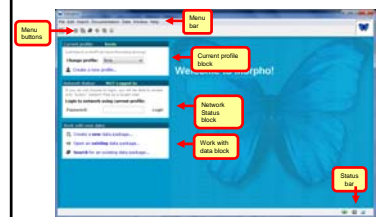
Current profile block

4
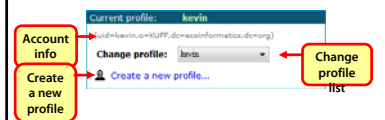
Network status block

5

Status bar

6

Status bar

- **Network statue**
  - **Connected with Metacat server**
  - **Not connect with Metacat server**

- **Login status**
  - **User has logged into Metacat server**
  - **User doesn't log into Metacat server**

- **Secure protocol**
  - **Using secure protocol connecting to Metacat**
  - **Using normal protocol connecting to Metacat**

7

Work with data block

8

Menu bar: File

9
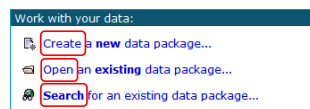
Menu bar: Edit
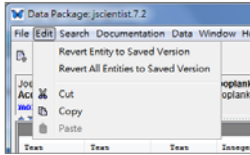
10

Menu bar: Search
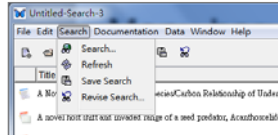
11

Menu bar: Documentation
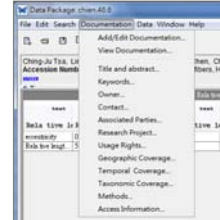
12

Menu bar: Data
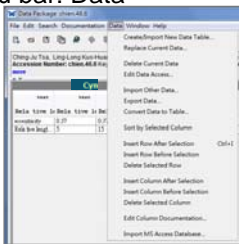
13

Menu bar: Window
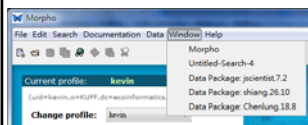
14

Menu bar: Help

Morpho User Guide:
C:\Program Files\morpho-
1.9.1\docs\user\late\MorphoUserGuide.pdf

15

Menu bar

button	Description
	Create a new data package
	Open a existing data package
	Save data package
	Duplicate data data package and save locally
	Search for data package
	Refresh, Save search, Revise search
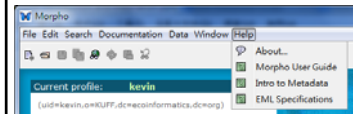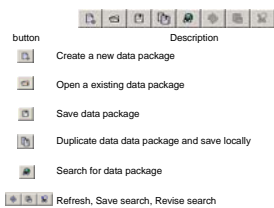
16

Morpho installation

System requirement

- **More than 256 MB physical memories**
- **CPU frequency higher than 700 MHz**
- **Instaled Java 1.6 or newer version**

Install Java 1.6

- **Download the JRE installation file of Java SE 6 / 7 from**
  http://www.oracle.com/technetwork/java/javase/downloads/index.html

Install Morpho (1/9)

- **Download the Morpho installation file from KNB website**
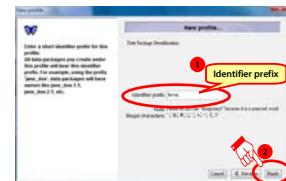 http://knb.ecoinformatics.org/software/index.jsp
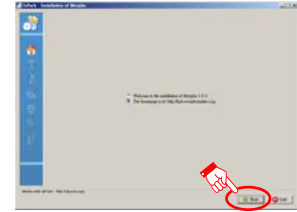
Install Morpho (2/9)

Install Morpho (3/9)
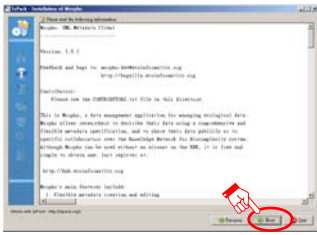
Install Morpho (4/9)

Installation path
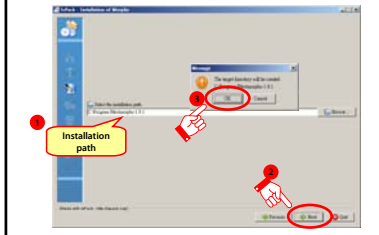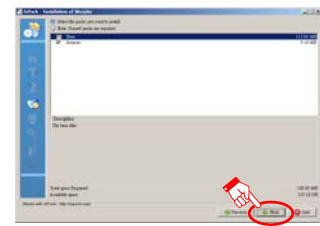
Install Morpho (5/9)

Install Morpho (6/9)
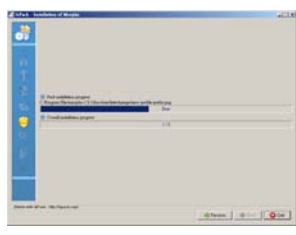
Install Morpho (7/9)

Install Morpho (8/9)

Install Morpho (9/9)

Execute Morpho program

Create a temperary profile

Create a temperary profile (2)

Create a temperary profile (3)

Create a temperary profile (4)

Modify Metacat URL (1)

Modify Metacat URL (2)

http://158.108.68.35/kuff/metacat

Create a new profile (1)

Create a new profile (2)

Input the Name of profile

Create a new profile (3)

Input your account

Choose organization

Hit "Refresh" button to retrieve the organization from your Metacat server

38
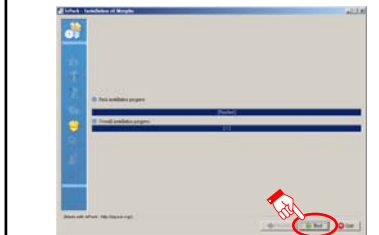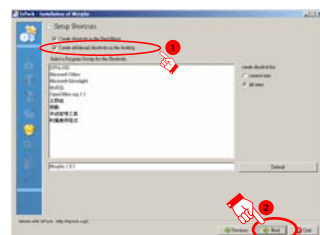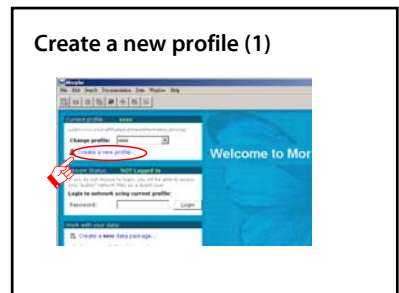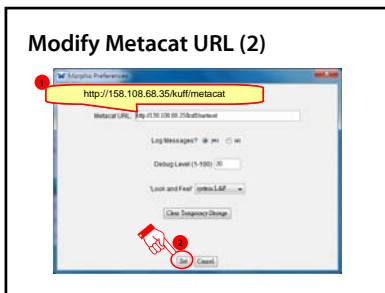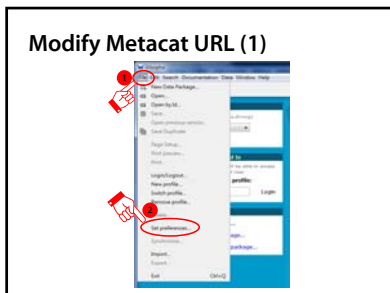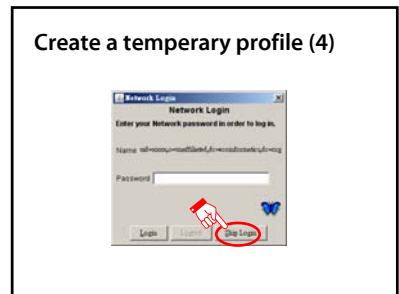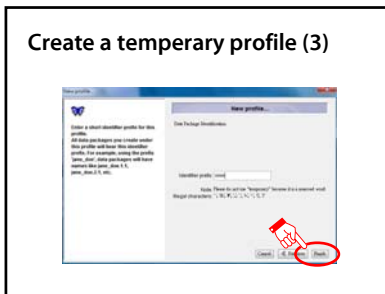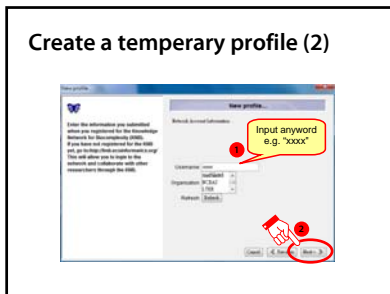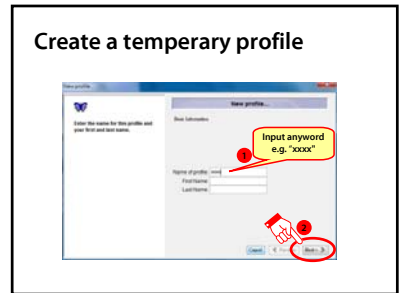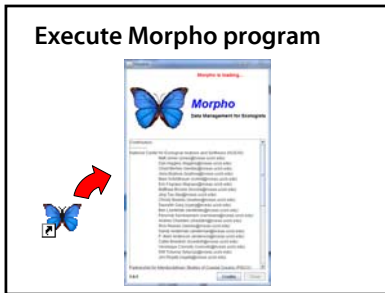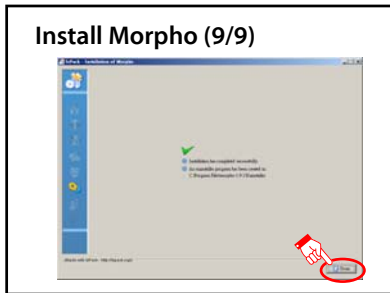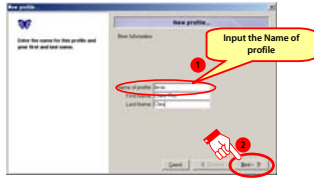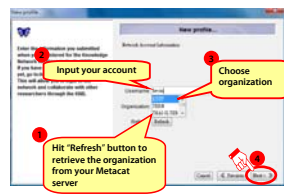
Create a new profile (4)

Identifier prefix

Try to login into Metacat

type password
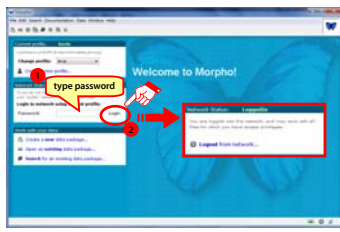
Morpho practice:
Creating / editing data package

Chen, Chien-Wen
2012,Sep,6

Create data package

Create data package
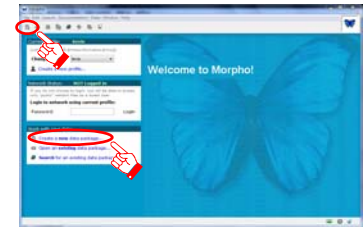
Create data package (1/15)

Pause the entry and save to temporary
Cancel the entry
Current step
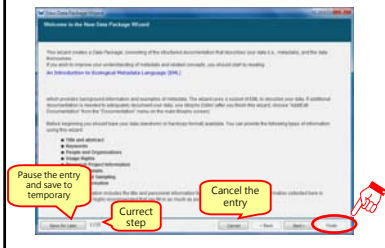
Create data package (2/15) – Title & abstract

Required field
Title
Abstract
Use "ctrl+c", "ctrl+v" to edit
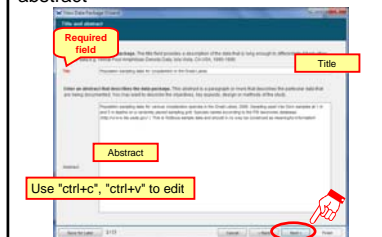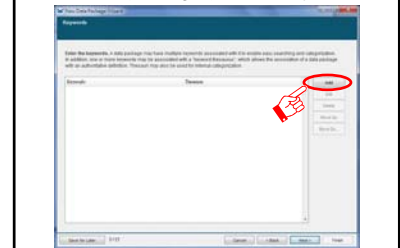
Create data package (3/15) – Keywords

Create data package (3/15) – Keywords

editing buttons

Create data package (3/15) – Keywords

Choose predefined source of keywords

Create data package (3/15) – Keywords

add more keyword sets or edit existing keyword(s)
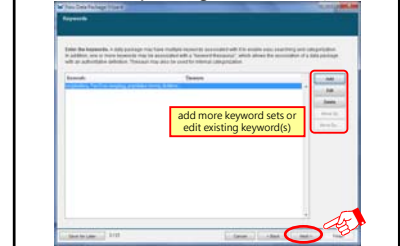
Create data package (4/15) –
Persons & organization
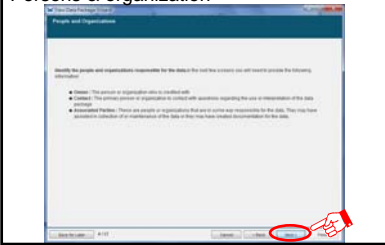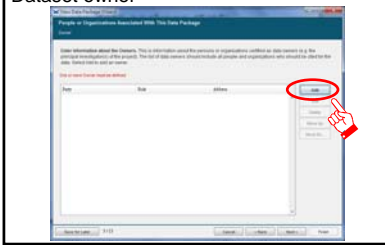
Create data package (5/15) –
Dataset owner

Create data package (5/15) –
Dataset owner
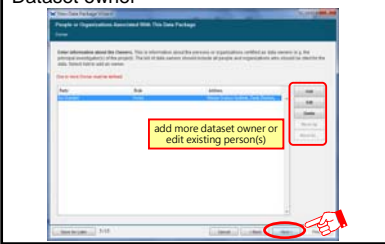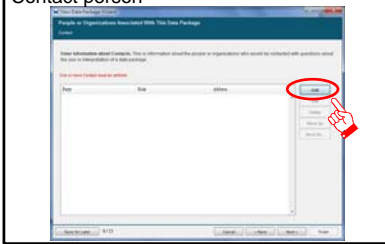
Choose 1 of 3
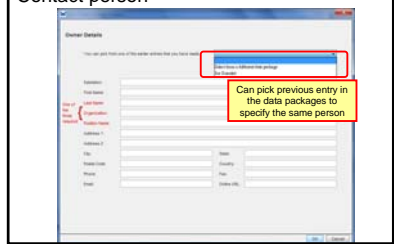among Last Name,
Organization, and
Position Name

fill in more fields will be
better!

Create data package (5/15) –
Dataset owner

add more dataset owner or
edit existing person(s)

Create data package (6/15) –
Contact person

Create data package (6/15) –
Contact person

Can pick previous entry in
the data packages to
specify the same person

Create data package (6/15) –
Contact person

Create data package (6/15) –
Contact person

will modify the
orinigal person
information

will be created as
separated person
information

Create data package (6/15) –
Contact person

add more contact person
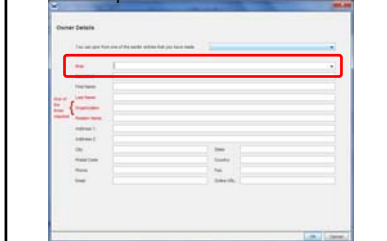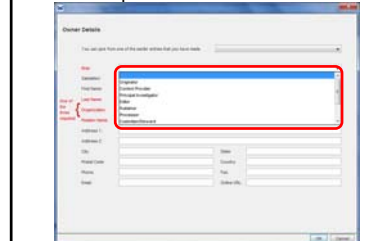or edit person(s)
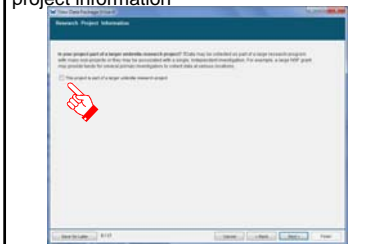
Create data package (7/15) - Associated parties

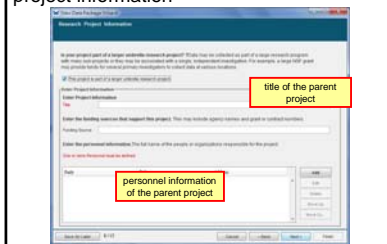Create data package (7/15) - Associated parties
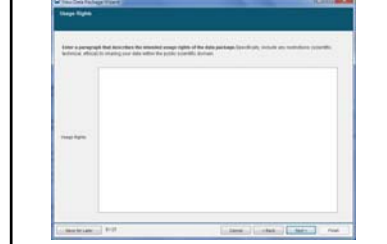

Create data package (7/15) - Associated parties

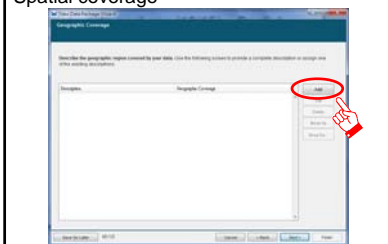Create data package (8/15) – Research project information

Create data package (8/15) – Research project information

title of the parent project

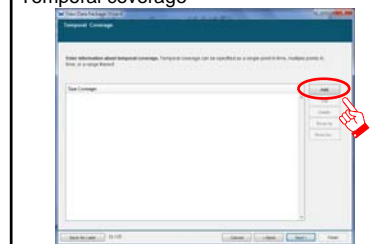personnel information of the parent project
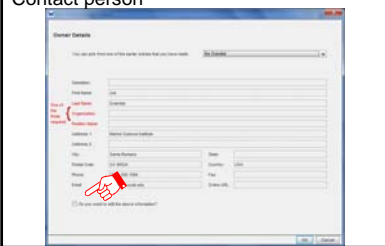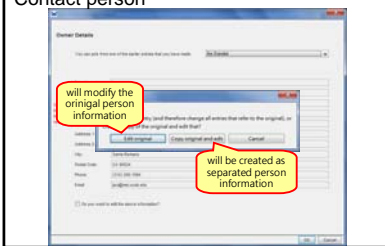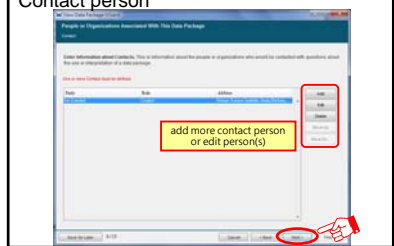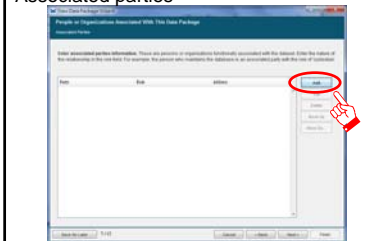
Create data package (9/15) – Usage rights
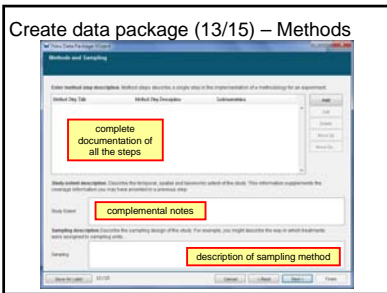

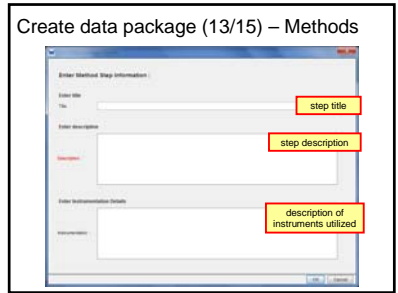Create data package (10/15) – Spatial coverage

Create data package (10/15) – Spatial coverage

description of the research site

use point tool to drag/point out the area

input the coordinates

choose from predefined location list

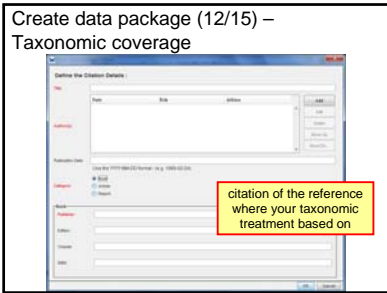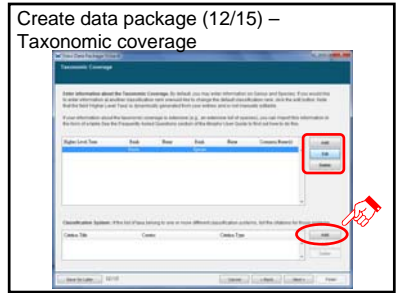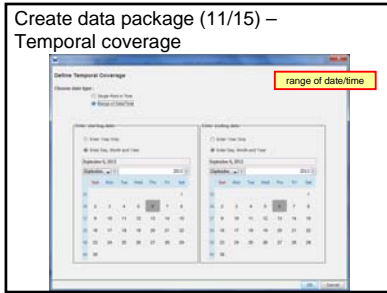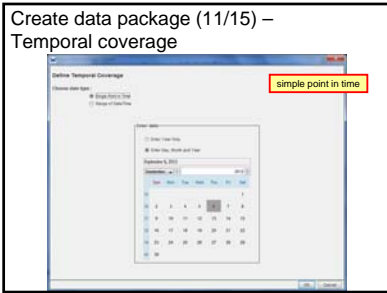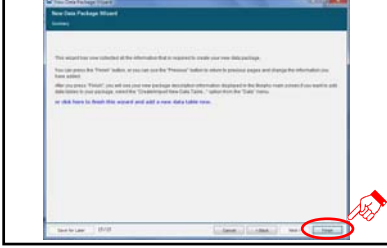functional buttons for point tool

Create data package (11/15) – Temporal coverage

Create data package (11/15) – Temporal coverage

simple point in time

Create data package (11/15) – Temporal coverage

range of date/time

Create data package (12/15) – Taxonomic coverage

Create data package (12/15) – Taxonomic coverage

citation of the reference where your taxonomic treatment based on

Create data package (13/15) – Methods

Create data package (13/15) – Methods

step title

step description

description of instruments utilized

Create data package (13/15) – Methods

complete documentation of all the steps

complemental notes

description of sampling method

Create data package (14/15) – Access rights

assign the privilege of accessing for this data package

specific access rights to person(s)

Create data package (14/15) – Access rights
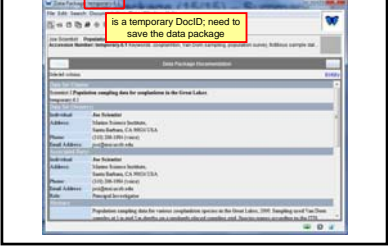

privileges for person(s)

Create data package (15/15) – Summary

Create data package (15/15) – Summary

is a temporary DocID; need to save the data package

Create data package (15/15) – Summary

Save locally: save the data package
Save to Network: upload to Metacat

Create data package (15/15) – Summary

data package is saved locally

Create data package (15/15) – Summary

local (your PC) data package

remote (on Metacat) data package

both local and remote have data package copies
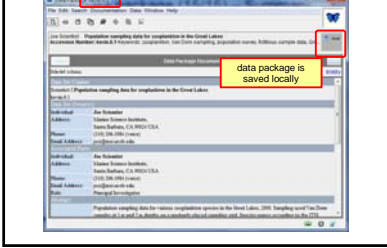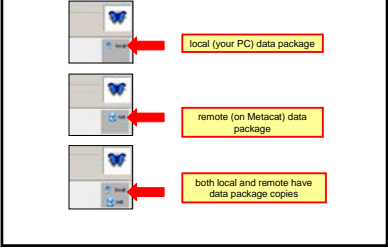
Edit data package

Edit data package

use "Documentation" menu to edit saved EML document
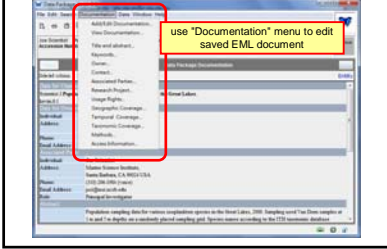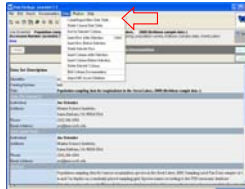
Edit data package

Practice

Morpho practice: Datatable
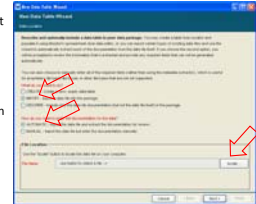
Chen, Chien-Wen
2012,Sep,7

Importing Raw Data:
The New Data Table Wizard

- Data should be in ASCII, character-delimited format
- Select "Create/Import New Data Table" from the "Data" menu

---

New Data Table Wizard:
Import Type

- Select "Import" for what you want to do
- Select "Automatic" for how to enter the documentation
- Select the location of the file

---

New Data Table Wizard:
Table Information

- Enter a name and description for the table
- Enter line to start importing
- Select whether the first raw is a column lable

---
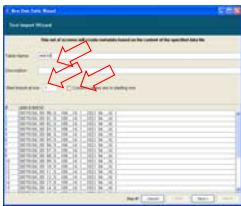
New Data Table Wizard:
Table Information

- Select the characters that separate values
- Select whether treating consecutive delimiters as one
- Check in window to ensure the table looks correct
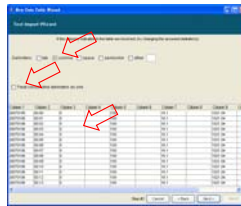
New Data Table Wizard:
Columns

- Enter a name and description
- Select the type of data in the column
- For more information on column types, hit "Help"
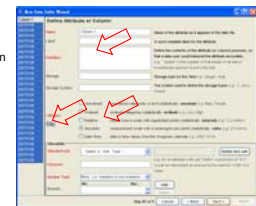
New Data Table Wizard:
Column Types

- Categories were derived from a Stevens 1951 paper on levels of measurement
  - Unordered – categorical labels with no inherent ranking (male and female)
  - Ordered – ranked data (low to high)
  - Relative – numerical data where values are evenly spaced (degree Fahrenheit, Celsius)
  - Absolute – numerical data with a meaningful zero point (degree Kelvin)
  - Data-Time – used for temporal measurement (2008-06-30 14:35:00)
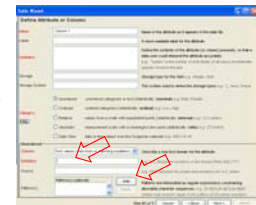

Column Types:
Unordered and Ordered

- Hit "Add" to enter a new code
- Enter the code and its definition in the space provided
- Select whether columns have values other than the codes listed

---
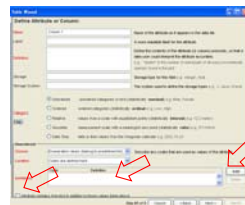
Column Types:
Unordered and Ordered

- Can also specify that columns contain text according to a certain format
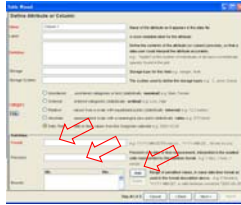- Enter the description of the format

Column Types: Relative and Absolute

- Select the units of measurement (can define new unit if necessary)
- Enter the precision of measurement
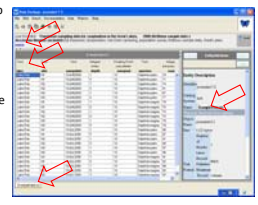- Select the number type
- Enter bounds
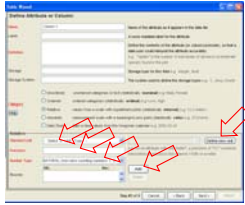
Column Types: Date - Time

- Enter the date-time format
- Enter the precision of measurement
- Enter the bounds of measurement

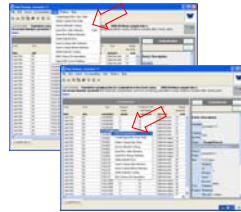
The Completed Data Package

- Click on a table tab to view that table
- Click on column header to see attribute level metadata
- Click "More" to see data package level metadata

Practice

Editing Data Table

- Pull down the "Data" menu to select edit and edit data table
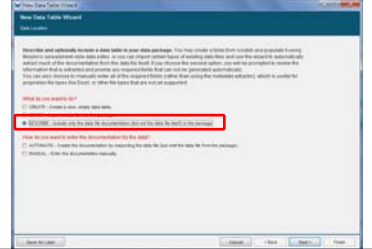- Right-click in table to edit table structure or documentation
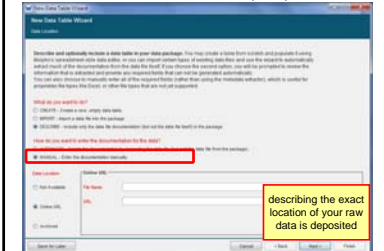
Morpho practice: Datatable (2)

Chen, Chien-Wen
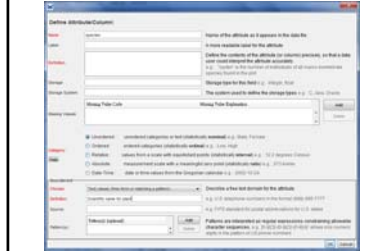2012,Sep,7

Describe datatable

Describe the datatable (1/2)
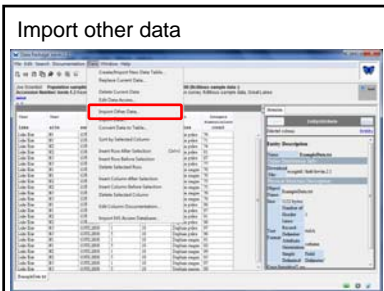

Describe the datatable (2/2)

describing the exact location of your raw data is deposited

Describe the table - attributes
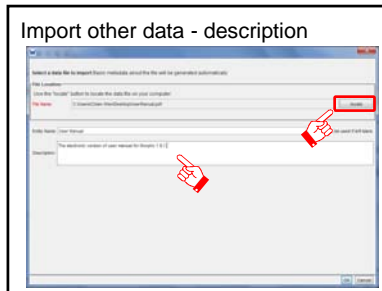

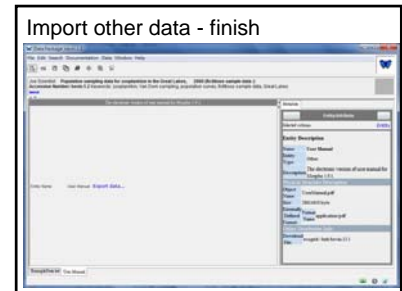
Import other data

Import other data

Import other data - description
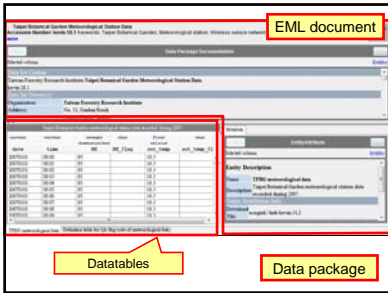

Import other data - finish

Morpho in advance
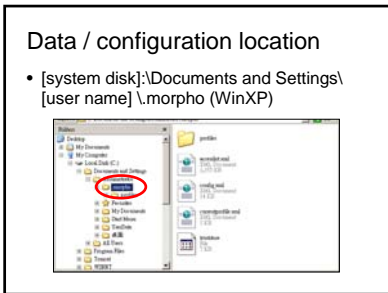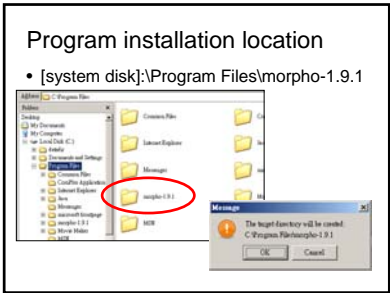   ... more detail about Morpho

Chen, Chien-Wen
2012,Sep,8

Data package? EML document? Datatable?

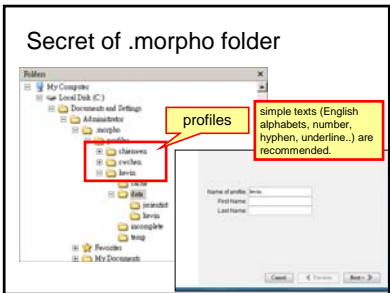Easy to get confused...

• Data package
    = EML document + Datatable

EML document

Datatables

Data package

Where is 'Morpho'?

Program installation location

• [system disk]:\Program Files\morpho-1.9.1

Data / configuration location

• [system disk]:\Documents and Settings\
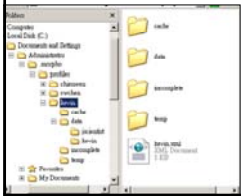[user name] \.morpho (WinXP)

Data / configuration location

• Morpho program files are installed in the different folder from where data packages are deposited in.
• Re-installation or update of Morpho program will not affect the present data packages.
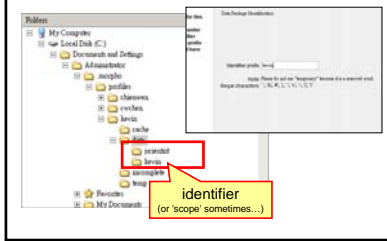

Secret of .morpho folder

profiles

simple texts (English alphabets, number, hyphen, underline..) are recommended.

Secret of .morpho folder

• under the profile folder...

- **cache**
  - keep temporary file for data network transfer
- **data**
  - where data packages are deposited
- **incomplete**
  - 'Save for Later' and other interrupted data
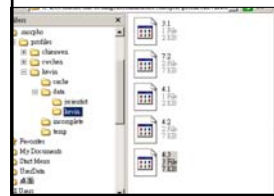- **temp**
- **(profile name).xml**
  - configuration settings

Secret of .morpho folder

identifier
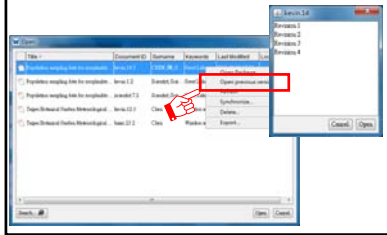(or 'scope' sometimes...)

Secret of .morpho folder

• within the data folder...

- contains EML document files and raw data physical files
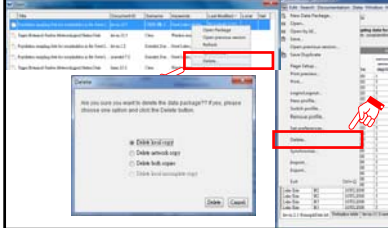- file name:
  - last 2 numbers of DocID
  - example: 4.1

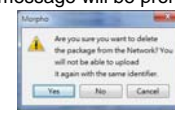
Reversion of data package

How to reversion data package?

Deleting data packages

How to delete data package?
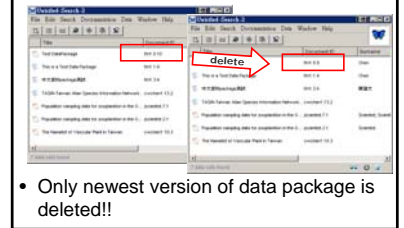
Deleting data packages

• confirm message will be prompted...

Are you sure you want to delete the package from the Network? You will not be able to upload it again with the same identifier.

| Yes | No | Cancel |

• means data package with the deleted DocumentID can't ever be uploaded!
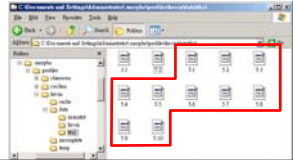

After deletion of data package...

delete

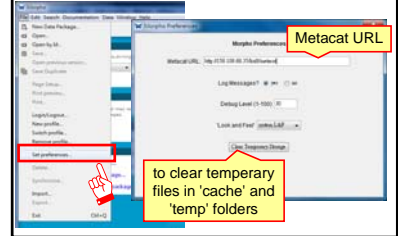• Only newest version of data package is deleted!!

So, how to completely delete?

- delete all the data package file which are in the same **profile** folder and **identifier** folder, and with the same ID number.

'Set preferences...'

Where to find "Set preferences.."

Metacat URL

to clear temperary files in 'cache' and 'temp' folders

Configurations of Morpho

Configuration settings file

- the file is located in .morpho folder

- Metacat connection URL
- organization list
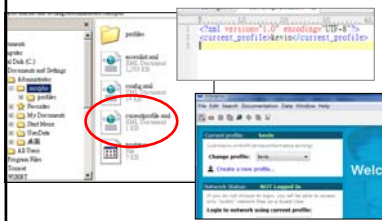- system files path
- authentication information

---

config.xml: Metacat URL

Metacat URL

---

config.xml: Organization
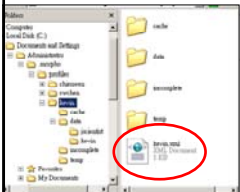

---

currentprofile.xml

---

currentprofile.xml

- Contains records the default profile content from Morpho initialize.
- If you delete the folder which be recorded by currentprofile.xml, Morpho will crash.
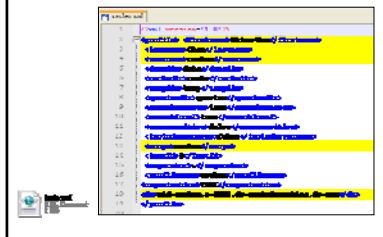- solution: edit the <current_profile> tag to existed profile

Slide 1: Profile setting file

- located in profile folder

- store the profile settings
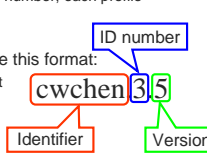- such as first name, last name, user name, Metacat login account …

Slide 2: Profile setting file

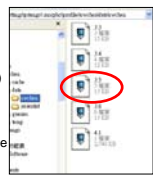## Slide 3: Document ID

Slide 4: Format of Document ID

- 3 parts
  - Identifier (scope)
  - ID number (serial number, each profile respective)
  - version number
- Following files use this format:
  - EML document
  - raw data
  - Search Query

cwchen 3.5

Identifier / ID number / Version

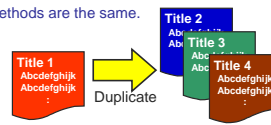## Slide 5: [profile] folder: data folder

- Example of file name format
  - ID number

  Example: **3**.5
  Indicate the 3rd file
  (EML document or raw data)

  - Version number

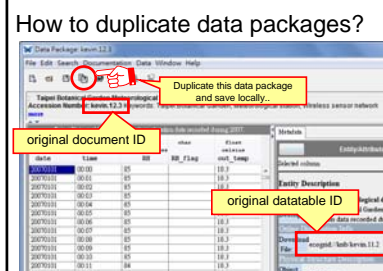 Example: 3.**5**
  Indicate the 5th version of the 3rd file

Slide 6: Duplicate the data package

Slide 7: When to duplicate data packages?

- To create data packages with partially unique metadata.
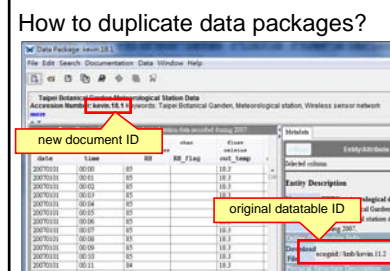- i.e.:Four data packages only differ in title and other informations like creator, contact, methods are the same.

Title 1 Abcdefghijk Abcdefghijk :
Duplicate
Title 2 / Title 3 / Title 4 Abcdefghijk Abcdefghijk :

Slide 8: How to duplicate data packages?

original document ID

original datatable ID

Duplicate this data package and save locally..
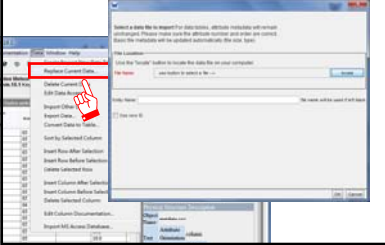
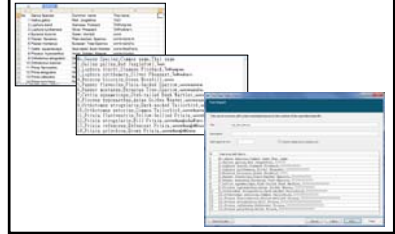## Slide 9: How to duplicate data packages?

new document ID

original datatable ID

Update new raw data

Textfile encoding

When characters become...

Change the encoding of text

change the Encoding to 'UTF-8'