



Morpho Activity

Start Entering/Practicing with real data





- The following slides are set up to take you step by step through the process of creating a data package in morpho
- If you have any questions please feel free to ask the facilitors.

Register with KNB

- To begin register as a user at the KNB site <u>http://knb.ecoinformatics</u> .org/index.jsp
- Scroll down the page until you find the login & registration box in lower left of the page
- Click on the link create a new account
- Write down your username, organization and password as you will use this in Morpho



	login & registratio	n
search any add	ur account enables you to itional, non-public data for have access priviliges:	
You are NOT I	ogged in	
username:	sromanello	
organization:	– choose one – 🛛 👻	
password:	yolololololololok	Login
1	create a new account forgot your password? change your password	





- Next go to <u>http://knb.ecoinformatics.org/morphopo</u> <u>rtal.jsp</u> to download the most recent version of morpho.
- Download Morpho with Java.
- There is an installer that will walk you through the installation.





 Once you have installed Morpho.
 Locate Morpho in your program file and start the application.



Opening Morpho





 When you open Morpho for the first time two windows will open: a splash screen and a new profile window.





- Enter a name for the profile
 - Suggested: first initial and last name (wtyburczy)
- Enter your name
- Hit "Next"

000	New Profile	
Ŵ	New Profile	
Enter the name for this profile and your first and last name.	Basic Information	
	Name of profile:	
	Last name:	
	(Cancel) (Previous N	ext »





- Enter the username and affiliation of your KNB account
- Hit "Next"
- This is the same username, and organization you created on the KNB site

000		New Prof	ile	
Ŵ			New Pro	ofile
Enter the information you submitted when you registered for the Knowledge Network for Biocomplexity (KNB). If you have not registered for the KNB yet, go to	Network Ac	count Inf	formation	
"http://ldap.ecoinformat	Username:			
ics.org/cgi-bin/ldapweb. cgi?cfg=knb". This will		NCEAS	Ç.	
allow you to login to the	Organization:		1	
network and collaborate with other		OBFS	Ŧ	
researchers through the KNB.			Cance	el) 🔇 Previous 🛛 Next 🔊





- Select an identifier prefix
 - Usually the same as your account username
 - Used as the first part of the name of your data packages
- Hit "Finished"

000	New Profile
Ŵ	New Profile
Enter a short identifier prefix for this profile. All data packages you create under this profile will bear this identifier prefix. For example, using the prefix 'jane_doe', data packages will have names like jane_doe.1.1, jane_doe.2.1, etc.	Data Package Identification
	Cancel Servious Finished





- A screen will open asking you for your password.
- This is the same password that you created on the KNB site

	👙 Network Login 🛛 🔀
ix for I data	Network Login
creat	Enter your Network password in order to log in.
file wi	
ifier	Name uid=sromanello,o=LTER,dc=ecoinformatics,dc=org
mple,	Name did-sromanello,0=crck,dc=ecolini ormatics,dc=org
x ta	
a have	Password
	Ň
etc.	W
	Login Logout Skip Login

S The main window



- All controls accessible via the menu bar
- Common tasks also in graphics toolbar
- Center window provides access to main functions
- Butterfly icon indicates that program is processing





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Profiles in Morpho



- Allows multiple users on the same machine to keep their data separate
 - Profiles are NOT password protected on the local machine
- A profile generally corresponds to an associated KNB account



 Can also be useful to separate work done for different projects/organizations

Register for a KNB account at http://knb.ecoinformatics.org



3FS Creating a profile



• Select "Create a new profile..." from the main window







- Required to save or edit data packages on the network
- Allows viewing of data packages that may not be publicly readable
- Select your profile from the dropdown box
- Enter the password for your account
- Hit "Login"







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- You can see your network status in two places
 - The main window
 - The login status icon on the lower right





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SFS Creating a data package: **The Data Package Wizard**



- Step-by-step interface for creating valid EML documents
- Required elements
 are listed in RED
- After creating documents, the interface for the various sections is reachable via the "Documentation" menu

Edit Search Documentation Data Window	v Help	- 377
		44
urrent profile: willtyb	1999-01 38344.00 1999-03- 14000.00 JUDA MIN MOV MON	
uld=tyburczy,o=NCEAS,dc=ecoinformatics,dc=org)	1909-01 05-4-00 343040 24097012 4FTX Bury Chan-	
Change profile: willtyb		
	0.0.0 New Data Package Wizard	
Create a new profile	Welcome to the New Data Package Wizard	
etwork Status: NOT Logged In		
' you do not choose to login, you will be able to access only public" network files as a Guest User	This seland creates a Data Package, considing of the shuctured documentation that describes your data (i.e., netasida), and t	te data thermotom.
ogin to network using current profile:	If you wish to improve your understanding of metadata and mining concepts, you about start by reading	
	An Introduction to Ecological Hetadata Language (EHL)	
Password: login		
ork with your data	which provides background internation and examples of invitability. The work uses a subset of EM, to describe your date. If a resetted to despatisly document your date, use Allepho Editor Lafler you flexit this wolland, choose "AddEdD Documentation" to means on the main Month screense.	
Create a new data package	Before beginning you should have your data (electronic or handcapy formul) available. You can provide the following types of int	emation using this will
	Title and abstract	
Open an existing data package	Kayworda	
Search for an existing data package	Preula and Organizations	
	Usage Rights	
	Research Project Information	
	Coverage Details	
	Methods and Sampling	
	Access Information	
	Note: Regard internation rectudes the title and paravivel internation for your data set. The real of the internation subjected the righty recommended that you fill in an invict an possible.	re is uptional. Nowever

BFS Creating a data package: The Data Package Wizard



- Step-by-step interface for creating valid EML documents
- Required elements
 are listed in RED
- After creating documents, the interface for the various sections is reachable via the "Documentation" menu



There are 12 steps, similar to the sections of the web registry form

Editing Data Packages: Title and Abstract



- Enter a descriptive title
- Briefly

 describe the
 content and
 purpose of
 the data in
 the abstract

itle and Ab	stract
Enter the title /ernal Pool A	e of the data package. The title field provides a description of the data that is long enough to differentiate it from other similar data, e.g. mphibian Density Data, Isla Vista, CA USA, 1990
Title:	Plant community response to fertilization at rootsland, Georgia
and the second second	You may want to describe the objectives, key aspects, design or methods of the study.
Abstract:	

Editing Data Packages: Title and Abstract



- Enter a descriptive title
- Briefly
 describe the
 content and
 purpose of the
 data in the
 abstract

	e of the data package. The title field provides a desc∹iption of the data that is long enough to differentiate it from other similar data. e.g. nphibian Density Data, Isla Vista, CA USA, 1990-1996
Title:	Plant community response to fertilization at Sapelo Island, Georgia
	ract that describes the data package. This abstract is a paragrammore that describes the particular data that are being four may want to describe the objectives, key aspects, design or or or or of the study.
Abstract:	

Editing Data Packages: Keywords



- Hit "Add" to enter more keywords
- To edit or delete existing keywords, select them and hit the appropriate button

$\Theta \Theta \Theta$		New Data Pack	age Wizard	
Keywords				
more keywords ma	ds. A data package may have mul ay be associated with a "keyword i be used for internal categorization	thesaurus", which allows the	th it to enable easy searching and ca association of a data package with a	tegorization. In addition, one or n authoritative definition
	Keywords		Thesaurus	Ad
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				Move Up
				Mova Elowa
				×
				A V
Step 3 of 15			Cancel (<	Back Next> Finish

Editing Data Packages: Keywords



- Hit "Add" to enter more keywords
- To edit or delete existing keywords, select them and hit the appropriate button

0 0	New Data Package Wizard	
Keywords		
	ple keywords associated with it to enable easy searching and categorization. In addition, one of resourus", which allows the association of a data package with an authoritative definition	я
Keywords Sapelo Island, Georgia, USA	Thesaurus Ado	
GCE, LTER, Primary Production, Batis maritim	na, Borr	
tep 3 of 15	Cancel Cancel Next>	Finish

BFS Editing Data Packages: Keywords



- To add a keyword, hit "Add"
- Enter keyword in designated space



Editing Data Packages: Keywords



- To add a keyword, hit "Add"
- Enter keyword in designated space

	Keyword Sanelo Islandi	Add
		Delete
		[Mova Up
		(_Move Down_)
words:		
These key	words are not chosen from a predefined list:	

Editing Data Packages: Keywords



 To designate a source for the **keywords** (GCMD, for instance), select the appropriate radio button at the bottom and type in the name of the source

	word Set:	
	Keyword	Adid
	Sanelo Island	Delete
		[MoVa Up]
		Move Down:
ywords:		
) These keyv	vords are not chosen from a predefined list:	
These keyv	vords are chosen from a predefined list:	

Editing Data Packages:



- To add an owner, hit "Add"
- To edit or delete an owner, select the listing, then hit the appropriate button

People or Organizations Associated With This Data Package Owners Enter information about the Owners: This is information about the persons or organizations certified as the project). The list of data owners should include all people and organizations who should be cited for the	
Enter information about the Owners: This is information about the persons or organizations certified as	~
Enter information about the Owners: This is information about the persons or organizations certified as the project). The list of data owners should include all people and organizations who should be cited for the	
Enter information about the Owners: This is information about the persons or organizations certified as the project). The list of data owners should include all people and organizations who should be cited for the	
the project). The list of data owners should include all people and organizations who should be cited for the	data owners (e.g. the principal investigator(s)
	data. Select Add to add an owner.
One or more Owners must be defined:	
One or more Owners must be defined:	\sim
Party Role A	Address Address
	Deloto
	Move Up
	Move Down
	<u> </u>
	×
Step 5 of 15	cel < Back Next> Finish

Editing Data Packages: Data Set Owner



- To add an owner, hit "Add"
- To edit or delete an owner, select the listing, then hit the appropriate button

Ople or Organizations Associated	New Data Package ' With This Data Package		
ners			
ter information about the Owners: This project). The list of data owners should in	s is information about the persons or organ to lude all people and organizations who sh	izations certified as data owners (e.g ould be cited for the data. Select Add	 the principal investigator(s) o to add an owner.
e or more Owners must be defined:			
		• • •	
Party	Role	Address	Add
			Edit
			[Dalete
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			4
			×

Editing Data Packages: Data Set Owner



 Enter in the information for the owner, then hit "OK"

wner	Details				
	You can pick from one of the earlier entries that you have made.		ve made.		;
	Salutation:				
	Hirst Name:				
of r	Last Name:				
. {	Organization:	Georgia Coastal Ecosystems LTE	R Project		
ed	Position Name:				
	Address 1:	Dept. of Marine Sciences			
	Address 2:	University of Georgia			
	City:	Athens	State:	Georgia	
	Postal Code:	30602-3636	Country:	USA	
	Phone:		Fax:		
	Email:	gcelter@uga.edu	Online URL:	http://gce-lter.marsci.uga.edu/lter/	

Cancel

OK

Editing Data Packages: Contact Person



- Works similarly to data set owners
- To add a contact, hit "Add"

) 🖯 🖯	New Data Package	Wizard	
People or Organizations Associated	d With This Data Package		
Contacts			
Enter information about contacts. This is	information about the people or organizati	ons who would be contacted with quest	tions about the use or
interpretation of a data package.			
One or more Contacts must be defined:			
Party	Role	Address	
rarty	KUIE	Address	Abo
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			Move Up
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			x v
			. Hellind
ep 6 of 15		Cancel < Back	Next > Ficish
cp 0 01 15		Countries (Countries	

Editing Data Packages:



- Can select a previous entry in the data package to specify the same person
- Can also specify a person from another data package



You can pick from one of the earlier entries that you have made.



Select from a different data package Georgia Coastal Ecosystems LTER Project

	Salutation:		
	First Name:		
o of	Last Name:		
of e red	Organization:		
red	Position Name:		
	Address 1:		
	Address 2:		
	City:	State:	
	Postal Code:	Country:	
	Phone:	Fax:	
	Email:	Online URL:	

OK Cancel
BFS Editing Data Packages: Contact Person



- To select an entry from another data package:
 - select the package on the left
 - then the contact on the right

0	0	0	
	0.0		
	0		
		100 C	

1) Select a data package	2) Select a previous entry from this data package
Title Document ID	Owner
Vegetation Cover Data for 1953–1966, 1970 for USFS wtyburczy,33.20 Soil Nutrient Distributions in Grasslan Arbitration Sev.152.2 Top-down Bottom-up Control of Transtructure Seabloom.12.1 MetadataFixed TableWritable HiddenTable Wyburczy.26.8 test 4 Plant and amphibian diversity wetlands in Ontari knb.180.2 Test Data Set Wyburczy.25.1 editable Wyburczy.25.1 editable Wyburczy.25.1 testing show all in tree editor Wyburczy.47.2 Population sampling data for zooplankton in the Great L jscientist.7.19 wtyburczy.40.1 Population Cover Data for 1953–1966, 1970 for USFS Wtyburczy.37.1 For Sid Vyburczy.36.2 Production Data for 1954–1971 for USFS Study FSRM 1 Wtyburczy.34.10	Will Tyburczy NCEAS Metadata Coordinator

OK

Cancel

Editing Data Packages: Contact Person



- To select an entry from another data package:
 - select the package on the left
 - then the contact on the right

0 \varTheta			
1) Select a data package		2) Select a previous er	n this data package
Title	Document ID		Ser
Vegetation Cover Data for 1953-1966, 1970 for USFS Soil Nutrient Distributions in Grassland and Shrublands Top-down Bottom-up Control of Trophic Structure MetadataFixed TableWritable HiddenTable test 4 Plant and amphibian diversity in 74 wetlands in Ontari Test Data Set editable Playing with coverage testing show all in tree editor Population sampling data for zooplankton in the Great L custom units are funky Population sampling data for zooplankton in the Great L Vegetation Cover Data for 1953-1966, 1970 for USFS For Sid Production Data for 1954-1971 for USFS Study FSRM 1	seabloom.12.1 wtyburczy.27.2 wtyburczy.26.8 connolly.239.4 knb.180.2 wtyburczy.51.1 wtyburczy.22.4 wtyburczy.50.1 wtyburczy.47.2 jscientist.7.19 wtyburczy.40.1 jscientist.2.1 wtyburczy.37.1 wtyburczy.36.2	Will Tyburczy NCEAS	Metadata Coordinat

Editing Data Packages: Associated Parties



• Works similarly to entering owners and contacts

associated parties information. Th	ese are persons or organizations functiona	Ily associated with the dataset. Enter	the nature of the relationshi
ile tield. ⊢or example, the person who r	naintains the database is an associated pa	rty with the role of 'custodian'.	
Party	Role	Address	Add
			O Edit
			Deleto
			(Move Up
			Move Down
			Ă Ţ

Editing Data Packages: Associated Parties



- Works similarly to entering owners and contacts
- Can enter "Role" by hand or select from the drop down list

ssocia	ated Party De	tails		
	You can pick from	one of the earlier entries that you have made.	[
0	Role:	[
:	Salutation:	Originator Content Provider		<u> </u>
1	First Name:	Principal Investigator		U
	Last Name:	Editor Publisher Processor		¥]
he d	Organization:	Custodian/Steward		*] *]
uired	Position Name:			
,	Address 1:			
,	Address 2:			
(City:		State:	
1	Postal Code:		Country:	
1	Phone:		Fax:	
-	Fmail		Online URI :	

Editing Data Packages: Research Project



- Check the box if the dataset is part of a larger research project
- This is a subjective call, use when you feel it is appropriate

00	New Data Package Wizard
Research Project Informati	
Is your project part of a larger sub-projects or they may be as so primary investigators to collect de	umbrella research project? Data may be collected as part of a large research program with many ciated with a single, independent investigation. For example, a large NSF grant may provide funds for several ta at various locations.
This project is part of a large	r umbrella research project.
ep 8 of 15	Cancel <back next=""> Finish</back>

BFS BFS Research Project



Enter the information about the research project

Research Project Information is your project: part of a larger umbrella research project sub-projects or they may be associated with a single, indep primary investigators to collect data at various locations. This project is part of a larger umbrella research project Enter Project Information Enter the title of the project.	endent investigation. F				sevəral
sub-projects or they may be associated with a single, indep primary investigators to collect data at various locations. This project is part of a larger umbrella research projec Enter Project Information	endent investigation. F				sevəral
Enter Project Information	st.				
•					
Enter the title of the project					
Enter the title of the project.					
Title					
Enter the personnel information. The full name of the pe	sople or organizations r	responsible for the	project.		
Party	Role		Address		Add
				0	[Edt]
					(Dobto)
				¥.	Move Down
				Ŧ	- Move Denni
ep 8 of 15			Cancel) (< 3	Back N	ext>

BFS Editing Data Packages: Usage Rights



 Describe usage restrictions for the dataset, if any

nter a navasranh i	that dependings the instrument of the data markage. Specifically, instruct any contributions (relative technical
nter a paragraph Inicali to sharing yo	that describes the intended usage rights of the data package. Specifically, include any restrictions (scientific, technical, our data within the public scientific domain.
age Rights:	





 To add an area of spatial coverage to the data, hit "Add"

escribe the geographic region covered by your data	Use the following screen to provide a complete description or a	ssion one of the existing
scriptions.	use the following screen to provide a complete description of a	
Description	Geographic Coverage	Add
		Delate
		Mova Up
		Move Down
		4



- Enter a description for the area
- Many ways to select the area
 - Enter
 coordinates
 manually
 - Select from list
 - Box Tool
 - Point Tool



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]





- Enter a description for the area
- Many ways to select the area
 - Enter coordinates manually
 - Select from list
 - Box Tool
 - Point Tool

000

Description

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.

Set the geographic coordinates which bound the coverage: Lazitude and longitude values are used to creaze a 'bounding box' containing the region of interes:. 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]





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Editing Data Packages: Temporal Coverage



 To add a new temporal coverage, hit "Add"

emporal Coverage	New Data Package Wizard	
Enter information about temporal	coverage. Temporal coverage can be specified as a single point	in time, multiple points in time, or a range thereof
	Time Coverages	Add
		Eon
		Delata
		(Move Up
		[Move Down]
		×.
		A V

Editing Data Packages: Temporal Coverage



- Enter in the date
 and hit "OK"
- Alternatively, you can enter a range of coverage

000		
Define Temporal Covera	age:	
Choose date type:		
 Single Per 	oint in Time	
O Range o	f Date/Time	
	Enter date:	
	C Enter Year Only	
	Enter Month and Year	
	Enter Day, Month and Year	
	<u> </u>	
	October 15, 2005	
	October 🛟 🗘 2005	
	Sun Mon Tue Wed Thu Fri Sat	
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	2 3 4 5 6 7 8	
	9 10 11 12 13 14 15	
	16 17 18 19 20 21 22	
	23 24 25 26 27 28 29	
	30 31	

Editing Data Packages: Temporal Coverage



OK

Cancel

- Enter in the date
 and hit "OK"
- Alternatively, you can enter a range of coverage

e Temporal Coverage:	
e date type:	
 O Single Point in Time O Range of Date/Time 	
Enter starting date:	Enter ending date:
C Enter Year Only	C Enter Year Only
C Enter Month and Year	C Enter Month and Year
 Enter Day, Month and Year 	 Enler Day, Month and Year
October 15, 2005	October 15, 2005
October 🛟 🗘 200	05 October \$ 2005
Sun Mon Tue Wed Thu Fri	Sat Sun Mon Tue Wed Thu Fri Sat
(1
2 3 4 5 6 7	8 2 3 4 5 6 7 8
9 10 11 12 13 14	15 9 10 11 12 13 14 15
16 17 18 19 20 21	22 16 17 18 19 20 21 22
23 24 25 26 27 28	29 23 24 25 26 27 28 29
30 31	30 31

Editing Data Packages: Taxonomic Coverage



- To enter additional taxonomic information, hit "Add" beside the top frame
- To enter information above genus level, select the appropriate entry and hit "Edit"

a' is dynamically generated fr		o change the defa	ault classification rai		Species. If you would like to button. Note that the field "Hi	
ur information about the taxo the Frequently Asked Quest					nport this information in the fo	orm of a table.
H gher Level Taxa	Rank	Name	Rank	Name	Common Name(s)	Add
	Genus		Species			
						Edit
						Edit
sification System If the list	of laxa belong to one o	or more different	classification system	ns, list the citati	ons for those systems.	
sification System If the list Citation Title	of taxa belong to one o	or more different t Creator	classification system	- 22	ons for those systems. tion Type	
6	of laxa belong to one o		classification system	- 22		Delet

Editing Data Packages: Taxonomic Coverage



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ter information about the Tax prmation at another classification	n rank or would like :	o change the defa	ault classification ra			
xa' is dynamically generated from						9 7 (*** * *** * *
our information about the taxono e the Frequently Asked Question					nport this information in the	form of a table.
Higher Level Taxa	Rank	Name	Rank	Name	Common Name(s)	
rightsi sarat tasa						
	Genus		Species			Edit
issification System If the list of Citation Title		or more different i Creator		- 22		Delete
issification System If the list of				- 22	ons for those systems.	





- Enter in the names and common names for each rank
- Ranks can be added, deleted, or modified as appropriate

Rank	Name	mon Name(s)	Add
lingdom hylum	\sim		Delete
lass Order	L		
amily			Move Up
enus			
pecies			

16

BFS Editing Data Packages: Taxonomic Coverage



- Enter in the names and common names for each rank
- Ranks can be added, deleted, or modified as appropriate



Editing Data Packages: Taxonomic Coverage

St



To enter a classification reference (e.g. Lights Manual), hit "Add" under "Classification System"

	ion rank or would like t	to change the defa	ull classification rai		Species. If you would like to e button. Note that the field 'Hig	
crmation about the taxo requently Asked Quas					nport this information in the for	m of a table.
ligher Level Taxa	Rank	Name	Rank	Name	Common Name(s)	Add
	Genus		Species			Edit
						Delete
	of taxa belong to one	or more different o	classification system	ns, list the citatio	ons for those systems.	\sim
ation System I [*] the list	in the bolie ig to only	C	0.0	Cita	tion Type	
ation System I' the list Citation Title		Creator		7.6684.57		
		Creator		1.000	D	Edit
		Creator				Edit Delete





• Fill in the information for the reference

Title:				
	Party	Role	Address	Add
				O Edit
Author(s):				Dolato
				MoveUp
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				here a
Publication Date:				
Publication Date:	Use the YYYY-MM-DD format - (e.g	g. 1989-02-24)		
Publication Date:	Use the YYYY-MM-DD format - (e.g	g. 1989-02-24)		
Publication Date:		g. 1989-02-24)		
	O Book	g. 1989-02-24)		
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	O Book O Article	g. 1989-02-24)		
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	O Book O Article	g. 1989-02-24)		





- Enter a description for the method of sampling and the extent of the study
- To enter a new step in the methods, hit "Add"

900	New Data Package	Wizard	
Methods and Sampling			
Enter method step description. Metho	d steps describe a single step in the impleme	entation of a methodology for an experime	nt.
Method Step Title	Method Step Description	Instrumentation	Add
			0 (Edit
			Delato
			(Move Up
			[Move Down]
		•	A T
	temporal, spatial and taxonomic extent of	This information supplements the	e coverage information
you may have provided in a previous step	».		
Study Extent			
Sampling description. Describe the sampling units.	npling design of the study. For example, you	might describe the way in which treatme	nts were assigned to
Sampling			
Step 13 of 15		Cancel < Back	Next>

Editing Data Packages: Methods



- Enter a description for the method of sampling and the extent of the study
- To enter a new step in the methods, hit "Add"

Method Step Title	Method Step Description	on of a methodology for an experime Instrumentation		
Method Step Title	Method Step Description	Instrumentation	0	Aau
				Edit
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			ų	
			Ŧ	
Study extent description. Describe ti you may have provided in a previous s Study Extent	he temporal, spatial and taxonomic extent of the stu- tep.	dy. This information supplements the	coverage inf	ormation
Sloby Extern				
				gned to

Editing Data Packages: Methods



 Fill in the description of the method

00				
Enter Method Step Info	rmation:			
Enter title				
Title				
Enter description				
lescription:				
Enter Instrumentation Details				
ns trumentation:				
			ок	Canc

Step 14 of 15



Next>

Cancel < Back

- Control who is allowed to view, edit, delete, and change access rights to your data package
- Only apply to copies saved on the network
 - anyone can view and edit data packages saved on the local machine

Would you like the allow the	public to read your data packa	nge?		
Yes, give read-only acces	s to public.			
() No.				
Would you like to give speci	al access rights to other people	e? You can specify access for othe	r members of your team or any o	other person.
Would you like to give specia Use the table below to add, edi	al access rights to other people t and delete access rights to your	e? You can specify access for othe data package.	r members of your team or any o	other person.
Would you like to give speci Use the table below to add, edi Name	al access rights to other people t and delete access rights to your Organization	e? You can specify access for othe data package. Email/Description	r members of your team or any o Permissions	other person.
Use the table below to add, edi	t and delete access rights to your	data package.		
Use the table below to add, edi	t and delete access rights to your	data package.		Add
Use the table below to add, edi	t and delete access rights to your	data package.		Add



- Select whether to give read access to the public
- To add an additional access privilege or restriction, hit "Add"

000	New Data Package Wizard	
Access Information		
Would by w the pul	lic to read your data package?	
Y ead-only access to	public.	
() No.		

Would you like to give special access rights to other people? You can specify access for other members of your team or any other person. Use the table below to add, edit and delete access rights to your data package.

		Edit
	1	
		Delata
		Mayo Up
		Mova Down
	¥.	
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 		> (150
	Cancel	

BFS Access Rights



- Select whether to give read access to the public
- To add an additional access privilege or restriction, hit "Add"

Nould you like the allow the	e public to read your data pac	kage?			
-					
 Yes, give read-only acces No 	ss to public.				
() No.					
Nould you like to give speci Use the table below to add, ed	ial access rights to other peo it and delete access rights to yo	ple? You can specify access for othe our data package.	r members of your team or	any other per	son.
		E IVE I I	Description		
Name	Organization	Email/Description	Permissions		A
	Organization	Email/Description	Permissions	ō	A.
	Organization	Email/Description	Permissions	0	Edit
	Organization	Email/Description	Permissions		Delete
	Organization	Email/Description	Permissions	Ö	Delete Mavo Up
	Organization	Email/Description	Permissions	0	Delete
	Organization	Email/Description	Permissions		Delete Mavo Up
	Organization	Email/Description	Permissions	Ō	Delete Mavo Up
	Organization	Email/Description	Permissions		Delete Mavo Up

000



- Click "Refresh the user list..."
- Select the user or group to give special access rules
- Select "Allow" or "Deny"
- Select the type
 of access

Define Access: Select a user or group from the list below: Name Email / Description / Distinguished Name ▶ ■ NAPIER ▶ ■ LTER ▶ UVM unaffiliated UCNRS ▶ ■ SDSC ▶ PISCO V OBFS Amanda Nelson (aguaticentomology) aguaticentomology@yahoo.com akkool218@aol.com Audrey Kropp (akropp) cep575t@smsu.edu Celeste Prussia (cep575t) Dan Jones (danincb) diones@rmbl.org skypilots@wmrs.edu Daniel Pritchett (wmrs) dkuntz@amnh.org David Kuntz (dkuntz) dwlson@amnh.org Dawn Wilson (dwilson) Deborah Bowker (debbowker) bowker@catamountinstitute.org Refresh the user list Allow Read & Write 41 selected user(s) \$ access Description of access levels:

- Read: Able to view data package.
 Read: & Write: Able to view and modify data package.
 Read: Write & Change Permissions: Able to view and modify datapackage, and modify access permissions.
- Read, while a change remissions. Able to view and moury datapackage, and moury access
 All: Able to do everything (this is the same as Read, Write & Change Permissions)

000



- Click "Refresh the user list..."
- Select the user or group to give special access rules
- Select "Allow" or "Deny"
- Select the type
 of access





- Click "Refresh the user list..."
- Select the user or group to give special access rules
- Select "Allow" or "Deny"
- Select the type
 of access

Define Access:

Select a user or group from the list below:

Name	Email / Description / Distinguis	ned Name	
▶ ■ NAPIER			6
ETER			
▶ ■ UVM			
🕨 🗖 unaffiliated			
UCNRS			
SDSC			
PISCO			
OBFS			
Amanda Nelson (aquaticentomology)	aquaticentomology@yahoo.com		
Audrey Kropp (akropp)	akkool218@aol.com		
Celeste Prussia (cep575t)	cep575t@smsu.edu		
Dan Jones (danincb)	djones@rmbl.org		
Daniel Pritchett (wmrs)	skypilots@wmrs.edu		
David Kuntz (dkuntz)	dkuntz@amnh.org		1
Dawn Wilson (dwilson)	dwlson@amnh.org		4
Deborah Bowker (debbowker)	bowker@catamountinstitute.org		*
Allem 141	Dead & Weite		
Allow selected user(s)	Read & Write	\$ access	
	odfy datapackage, and modify access permissions. e & Change Permissions)		
		ок) С	Cancel

000



- Click "Refresh the user list..."
- Select the user or group to give special access rules
- Select "Allow" or "Deny"
- Select the type
 of access





Saving Data: Local



- Select "Save..." from the "File" Menu
- Select "Save Locally" from the pop-up window, then deselect "Save to Network" if necessary





Saving Data: Local



 You should see "local" and a computer icon in the upper right hand corner below the butterfly





Saving Data: Network



- Select "Save..." from the "File" menu
- Notice "Save Locally" is grayed out because the local version is the current working copy
- Select "Save to Network"





Saving Data: Network



- Select "Save..." from the "File" menu
- Notice "Save Locally" is grayed out because the local version is the current working copy
- Select "Save to Network"




Saving Data: Network



 You should see "net" and a globe icon in the upper right below the butterfly





Importing Raw Data: The New Data Table



 Data should be in ASCII, characterdelimited format

Wizard

Select
 "Create/Import
 New Data
 Table" from the
 "Data" menu

● ⊖ ⊖		Data Package: knb-lter-	gce.190,6	
ile Edit Search Docu	mentation Da	ta Window Help		
. 4 3 4 8 0 4		Create/Import New Data Table		
* 🖼 💷 ዛ፭ 🚾 🖤 ዛ		Delete Current Data Table		1
Dr. Steven Pennings: Plant Accession Number: knb-lter		Sort by Selected Column	a R, Primary Production, Batis maritima, Borrichia frutescens,	🝠 local
< back		Insert Row After Selection 1 Insert Row Before Selection Delete Selected Row	ation	nide X edit
Data Set Description		Insert Column After Selection Insert Column Before Selection		C
ldentifier: Catalog System:	knb-lter-gee knb	Delete Selected Column		
Alternate Identifier: Title: Publication Date:	PLT-GCED Plant comn 2004	Edit Column Documentation	, Georgia	
Data Set Owner(s):	2004			
Organization:	Georgia Coas	tal Ecosystems LTER Project		
Address:	Dept. of Marin University of C	ne Sciences,		
Email Address:	gcelter@uga.e			
Web Address:	http://gce-lter.	.marsci.uga.edu/lter/		
Individual:	Dr. Steven Pe			
Organization:	University of			
Address:	University of H	Biology and Biochemistry, Houston, s 77204-5513 USA		
Email Address:	spennings@uh			
Web Address: Metadata Provider(s):		hs.uh.edu/People/Pennings/Pennings.html		
Organization:		tal Ecosystems LTER Project		
Address:	Dept. of Marin University of C			



New Data Table S Wizard:

•

Import Type

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

00	New Data Table Wizard	
lew Data Tabl	e Wizard	
ata Location		
Morpho's spread much of the docu	ptionally include a data table in your data package. You may create a table from scratch and populate it using isheet-style data editor, or you can import certain types of existing data files and use the wizard to automatically extract imentation from the data file itself. If you choose the second option, you will be prompted to review the information that is wide any required fields that can not be generated automatically.	
You can also r file types like	a marually enter all of the required fields (rather than using the metadata extractor), which is useful for proprietary or other file types that are not yet supported.	
	nt to do? reate a new, empty data table.	
~	port a data file into the package. Include only the data file documentation (but not the data file itself) in the package.	
How do you wan	t to enter the documentation for the data?	
	- Import the data file and extract the documentation for review.	
) MANUAL - In	nport the data file but enter the documentation manually.	
File Location:-		
Use the "locate"	button to locate the data file on your computer:	
File Name:	use button to select a file>	locate



Next >

Cancel



Wizard:

New Data Table Wizard

Data Location

File Name

use button to select a file -->

Import Type

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

New Data Table Wizard

Describe and optionally include a data table in your data package. You may create a table from scratch and populate it using Morpho's spreadsheet-style data editor, or you can import certain types of existing data files and use the wizard to automatically extract much of the documentation from the data file itself. If you choose the second option, you will be prompted to review the information that is extracted and provide any required fields that can not be generated automatically.

You can also choose to marually enter all of the required fields (rather than using the metadata extractor), which is useful for proprietary file types like Excel, or other file types that are not yet supported.

What do you w	anklo do?
CREATE -	
IMPORT	a data file into the package.
O DESC	clude only the data file documentation (but not the data file itself) in the package.
N	
How Na	ant to enter the documentation for the data?
A mat	IC - Import the data file and extract the documentation for review.
O MANUAL -	Import the data file but enter the documentation manually.
File Location	1
Use the "locat	te" button to locate the data file on your computer:

locate..

Next>

Cancel



Wizard:

Import Type

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

New Data Table Wizard

Describe and optionally include a data table in your data package. You may create a table from scratch and populate it using Morpho's spreadsheet-style data editor, or you can import certain types of existing data files and use the wizard to automatically extract much of the documentation from the data file itself. If you choose the second option, you will be prompted to review the information that is extracted and provide any required fields that can not be generated automatically.

You can also choose to marually enter all of the required fields (rather than using the metadata extractor), which is useful for proprietary file types like Excel, or other file types that are not yet supported.

What do you want to do?

New Data Table Wizard

Data Location

- CREATE Create a new, empty data table.
- IMPORT Import a data file into the package.
- DESCRIBE Include only the data file documentation (but not the data file itself) in the package.

How do you want to enter the documentation for the data?

-	- Import the data file and extract the documentation for review. nport the data file but enter the documentation manually.	
File Location:-	button to locate the data file on your computer:	
File Name:	use button to select a file>	ka
		Cancel Sack Next> Finish





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

0	\varTheta 🕘 🕘 New Data Table Wizard	
Те	Text Import Wizard	
	of screens will create metadata based on the content of the specified data file	
Table	Table Name:	
Desc	Description:	
Start	Start import at row: 1 Start import at row:	
	# Lines in nceas 227.4.txt	
1		N 1. Specify nl
2		
3		
4	에는 그는 것이 가슴 것이 가슴에서	
5		
б		
7	John Gerlach 431 Y "dot crossed out, though?" x 4	4 3 3 3 4 2 3 4
8	3 Fred Hrusa 591 Santa Rosa Island Y Santa Rosa Island - N side x	x 4 2 1 :
9	Cort Johnson "Permanent address:johnson cort@hotmail.com, 10995 Guadalimar W	ay, San Diego
10		
11	11 Cort Johnson "Permanent address: johnson cort@hotmail.com, 10995 Guadalimar W	ay, San Diego
12	12 Cort Johnson "Permanent address: johnson cort@hotmail.com, 10995 Guadalimar W	ay, San Diego
13	13 Cort Johnson "Permanent address: johnson cort@hotmail.com, 10995 Guadalimar W	ay, San Diego
14	14 Cort Johnson "Permanent address:johnson cort@hotmail.com, 10995 Guadalimar W	ay, San Diego
14 15 16	15 Cort Johnson "Permanent address:johnson_cort@hotmail.com, 10995 Guadalimar W	ay, San Diego



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





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





- Select the characters that separate values
- Check in window to ensure the table looks correct

000	New Data Table Wizard
Text Import Wizard	
If the co	v dicated in the table are incorrect, try changing the assumed delimiter(s)
Dell'miters: 🗹 tab 📃 comi	na 🔄 space 📃 semicolon 🛄 other

Treat consecutive delimiters as one

Contact	Contact Inf	Code	Reserve nam Source	Notes	1: Dot on m	1: Specify pl	Za: 0-5%	Zb: 6-25%	ZC
Mark Albert P	residio	11	SF penins	SFWD - se	Ŷ	SF penins			0
Cini Brown		161		Regional					
Sarah Cha "F	Restorati	221	Channel Is	Don't und	Y	Santa Ros			
Peter Con B	odega M	251		Question	Y	Sonoma a x			
Sandy DeS		291	Starr Ranch		Y		x		
John Gerla		431			Y	"dot cross	x		-
Fred Hrusa		591	Santa Ros		Ŷ	Santa Ros)	x
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Cort Johns "F	Permane	0641-3	"Ano Nuev	Calamagr	Y	Santa Cru x			
Cort Johns "F	Permane	0641-4	"Ano Nuev	Danthonia	Y	Santa Cru x			
Cort Johns "F	Permane	0641-5	"Ano Nuev	Desclamp	Y	Santa Cru x			
Cort Johns "F	Permane	0641 6	"Ano Nuev	Elymus gl	Ŷ	Santa Cru x			-
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Cort Johns "F	Permane	0641-8	"Ano Nuev	Festuca id	٧	Santa Cru x			Ŧ
-).	4 1



Select the characters that separate values

 Check in window to ensure the table looks correct

		1	New Data Table Wizard		_	
Text Import Wizard						
lf ti	he columns i	indicated in the ta	ble are incorrect, try chan	ging the assumed de	elimiter(s)	
Dellmiters: 🗹 tab 🥅	comma 🥅	space 🦳 semicolo	on 🖂 other			
0-0						
Treat consecutive de	limiters as one					
Contact Contact I	nfi Code	Reserve nam	Source es 1: Do	t on m 1: Specify pl	2a: 0-5%	2b: 6-25% 2
ark Albert Presidio	11	Reserve nam SF penins	- se Y	t on m 1: Specify pl SF penins	2a: 0-5%	2b: 6-25% 2
ark Albert Presidio ini Brown	11 161	SF penins	se Y	SF penins	2a: 0-5%	2b:6-25% 2
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iark Albert Presidio ini Brown arah Cha "Restorati eter Con Bodega M	11 161 . 221 . 251	SF penins Channel Is	se Y Negronal Don't und Y Question Y	SF penins		
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ark Albert Presidio ni Brown Irah Cha "Restorati eter Con Bodega M Indy DeS hn Gerla ed Hrusa	11 161 221 251 291 431 591	SF penins Channel Is Starr Ranch Santa Ros	Se Y Logional Don't und Y Question Y Y Y	SF penins Santa Ros Sonoma a x "dot cross Santa Ros	x	
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ark Albert Presidio ini Brown arah Cha "Restorati eter Con Bodega M andy DeS whn Gerla red Hrusa ort Johns "Permane ort Johns "Permane	11 161 221 251 291 431 591 0641-1 0641-2	SF penins Channel Is Starr Ranch Santa Ros "Ano Nuev "Ano Nuev	Se Y Don't und Y Question Y Y Y "My study Y Bromus ca Y	SF penins Santa Ros Sonoma a x "dot cross Santa Ros Santa Cru x Santa Cru x	x	
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ark Albert Presidio ini Brown arah Cha "Restorati eter Con Bodega M andy DeS ohn Gerla red Hrusa ort Johns "Permane ort Johns "Permane ort Johns "Permane ort Johns "Permane	11 161 221 251 291 431 591 0641-1 0641-2 0641-3 0641-4	SF penins Channel Is Starr Ranch Santa Ros "Ano Nuev "Ano Nuev "Ano Nuev "Ano Nuev	se Y Don't und Y Question Y Y 'My study Y Bromus ca Y Calamagr Y Danthonia Y	SF penins Santa Ros Sonoma a x "dot cross Santa Ros Santa Cru x Santa Cru x Santa Cru x Santa Cru x	x	
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New Data Table Wizard: Columns



OK

Cancel

- Enter a name and description
- Select the type of data in the column
- For more information on column types, hit "Help"

Category:	Name of the attribute as it appears in the data file A more readable label for the attribute Define the contents of the attribute (or column) precisely, so that a data use could interpret the attribute accurately. e.g: "spden" is the number of individuals of all macro invertebrate species found in the plot Storage type for this field e.g: integer, float The system used to define the storage types e.g: C, Java, Oracle
Definition: Storage: Storage System: OUnordered: unor Category: Ordered: orde	Define the contents of the attribute (or column) precisely, so that a data us could interpret the attribute accurately. e.g. "spden" is the number of individuals of all macro invertebrate species found in the plot Storage type for this field e.g. integer, float
Storage: Storage System: O Unordered: unor Category: Ordered: orde	could interpret the attribute accurately. e.g. "spden" is the number of individuals of all macro invertebrate species found in the plot Storage type for this field e.g: integer, float
Storage System: Unordered: unor Category: Ordered: orde	
O Unordered: unor Ordered: orde	The system used to define the storage types e.g: C, Java, Oracle
Category: Ordered: orde	
Help O Absolute: meas	ered categories (statistically ordinal) e.g: Low, High es from a scale with equidistant points (statistically interval) e.g: 12.2 meters surement scale with a meaningful zero point (statistically ratio) e.g: 273 Kelvin e or time values from the Gregorian calendar e.g: 2002-10-24

New Data Table Wizard:



OK

Cancel

- 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: Columns



- Enter a name
 and description
- Select the type of data in the column
- For more information on column types, hit "Help"

Name:		Name of the attribute as it appears in the data file
Label:		A more readable label for the attribute
Definition:		Define the contents of the attribute (or column) precisely, so that a data user could interpret the attribute accurately. e.g: "spden" is the number of individuals of all macro invertebrate species found in the plot
Storage:		Storage type for this field e.g: integer, float
Storage System		The system used to define the storage types e.g: C, Java, Oracla
	Unordered: un	ed categories or text (statistically nominal) e.g: Male, Female
	Ordered: ord	categories (sta:istically ordinal) e.g: Low, High
Catego	🔵 Relative: val	om a scale with equidistant points (statistically interval) e.g: 12.2 meters
На	Absolute: me	ment scale with a meaningful zero point (statistically ratio) e.g: 273 Kelvin
	 Date-Time: da 	me values from the Gregorian calendar e.g: 2002-10-24

OK Cancel

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 (degrees Fahrenheit)
 - Absolute numerical data with a meaningful zero point (degrees Kelvin)
 - Date-Time used for temporal measurement (2005-10-31 14:15:00)



Unordered and

 Hit "Add" to enter a new code

Ordered

- Enter the code and its definition in the space provided
- Select whether columns have values other than the codes listed

$\bigcirc \bigcirc \bigcirc$







Column Types: **Unordered** and

- 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

000







Unordered and

 Hit "Add" to enter a new code

Ordered

- Enter the code and its definition in the space provided
- Select whether columns have values other than the codes listed

$\Theta \cap \Theta$







Column Types: **Unordered** and

 Can also specify that columns contain text according to a certain format

Ordered

 Enter the description of the format

Define Attribute or Column: Name: Name of the attribute as it appears in the data file Label: A more readable label for the attribute Define the contents of the attribute (or column) precisely, so that a deta user Definition: could interpret the attribute accurately e.g: "spden" is the number of individuals of all macro invertebrate species found in the plot Storage: Storage type for this field e.g: Integer, float Storage System: The system used to define the storage types e.g: C, Java, Oracle Unordered: unordered categories or text (statisticaly nominal' e.g. Male, Female Ordered: ordered cate (statistically ordinal) e.g: Low, High Category: Relative: values f with equidistant points (statistically interval) e.g: 12.2 meters Felp Absolute: ale with a meaningful zero point (statistically ratio) e.g. 273 Kelvin measu O Date-Time: values from the Gregorian calendar e.g. 2002-10-24 Unordered Choose: Text values (free hing a patterni Describe a free text domain for the attribute Definition: e.g: U.S. telephone numbers in the format (999) 888-7777 Source: e.g: FIPS standard for postal abbreviations for U.S. states Pattern(s) (optional) Add Patterns are interpreted as regular expressions constraining allowable Pattern(s): character sequences. e.g: "[0-9]{3}-[0-9]{3}-[0-9]{4}' allows only numeric digits in the pattern of US phone numbers OK Cancel



000



Unordered and

 Can also specify that columns contain text according to a certain format

Ordered

 Enter the description of the format

● ○ €

Define Attribute or Column:

Name:		Name of the attribute as it appears in the data file
Label:		A more readable label for the attribute
Definition:		Define the contents of the attribute (or column) precisely, so that a deta user could interpret the attribute accurately. a.g: "spden" is the number of individuals of all macro invertebrate species 'ound in the plot
Storage:		Storage type for this field e.g: Integer, float
Storage System:		The system used to define the storage types e.g: C, Java, Oracle
	Unordered: unordered categories or text (statis	stically nominal; e.g: Male, Female
6	Ordered: ordered categories (statistically or	dinal) e.g: Low, High
Category:	Relative: values from a scale with equidistant	points (statistically interval) e.g: 12.2 meters
Help	Absolute: measurement with a meaning	ful zero point (statistically ratio) e.g: 273 Kelvin
	O Date-Time: date or es from the Grego	rian calendar e.g. 2002-10-24
Unordered		
Choose:	Text values ('ree for thing a pattern)	Describe a free text domain for the attribute
Definition:	1	
Source:		a.g: FIPS standard for postal abbreviations for U.S. states
	Pattern(s) (optional): Add	1
Pattern(s):		Patterns are interpreted as regular expressions constraining allowable character sequences. e.g. (0-9)(3)-(0-9)(4)* allows only numeric digits in the pattern of US phone numbers



BFS 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

Define Attribu	ute or Column:		
Name:		Name of the attribute as it a	ppears in the data file
Label:		A more readable label for th	e attribute
Definition:		could interpret the attribute a	ttribute (or column) precisely, so that a data use accurately. of individuals of all macro invertebrate species
Storage:		Storage type for this field e.	g: integer, float
Storage System:		The system used to define t	the storage types e.g: C, Java, Oracle
Category:	Ordered: ordered categories (statist Relative: values from a scale with	tic ordinal) e.g: Low High nt points (statistically interval) e.	g: 12.2 meter
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Help	Relative: values from a scale with Absolute: measurement scale w	nt points (statistically interval) e. Iningful zero point (statistically ratio)	
Help .	Relative: values from a scale with Absolute: measurement scale w Date-Time: date or time values	nt points (statistically interval) e. Iningful zero point (statistically ratio) e Gregorian calendar e.g: 2002-10-24	* Define new unit * Define new unit
Help -Relative Standard Unit:	Relative: values from a scale with Absolute: measurement scale w Date-Time: date or time values	e.g: for an attribute with unit interpreted as precise to the	* Define new unit * Define new unit

BFS 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

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Define Attrib	ute or Column:	
Name:		Name of the attribute as it appears in the data file
Label:		A more readable label for the attribute
Definition:		Define the contents of the attribute (or column) precisely, so that a data user could interpret the attribute accurately. e.g: "spden" is the number of individuals of all macro invertebrate species found in the plot
Storage:		Storage type for this field e.g: integer, float
Storage System:		The system used to define the storage types e.g: C, Java, Oracle
Category: Help	Absolute: measurement scale with a meaningfu	inal) e.g: Low High voints (statistically interval) e.g: 12.2 meters I zero point (statistically ratio) e.g: 273 Kelvin an calendar e.g: 2002-10-24
Standard Unit:	- Select a ype -	Define new unit
Precision:		e.g: for an attribute with unit "meter", a precision of "0.1" would be interpreted as precise to the nearest 1/10th of a meter
Number Type:	REAL (+/- fractions & non-fractions: -1/2, 3.1	
Bounds:	Min. Max.	Add
L		OK Cancel

BFS 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

Define Attrib	ute or Column:	
Name:		Name of the attribute as it appears in the data file
Label:		A more readable label for the attribute
Definition:		Define the contents of the attribute (or column) precisely, so that a data user could interpret the attribute accurately. e.g: "spden" is the number of individuals of all macro invertebrate species found in the plot
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Category: Help	Relative: values from a scale with equ Absolute: measurement scale with a n	ially ordinal) e.g: Low High iidistant points (statistically interval) e.g: 12.2 meters neaningful zero point (statistically ratio) e.g: 273 Kelvin e Gregorian calendar e.g: 2002-10-24
Standard Unit:	- Select a Unit Typy	Define new unit
Precision:		e.g: for an attribute with unit "meter", a precision of "0.1" would be interpreted as precise to the nearest 1/10th of a meter
Number Type:	REAL (+/- frac con-fractions: -1/2, 3.1	
Bounds:	Min. N	Add Delete

BFS 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

Define Attribu	ute or Column:					
Name:				Name of the attribute	as it appears in the data file	Ð
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Help -	 Relative: Absolute: Date-Time: 	measurement s	cale with a meaning	t points (statistically inte (ful zero point (statistically prian calendar e.g: 2002-1	ratio) e.g: 273 Kelvin	
Standard Unit:	- Select a U	nit Type -	+		(;)	Define new unit
Precision:				e.g: for an attributy interpreted as pr	t "meter", a precision the nearest 1/10th of a	
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Bounds:	Min.		Max.	Add		



- Enter the datetime format
- Enter the precision of measurement
- Enter the bounds of measurement

Define Attrib	ute or Column:	
Name:		Name of the attribute as it appears in the data file
_abel:		A more readable label for the attribute
Definition:		Define the contents of the attribute (or column) precisely, so that a data user could interpret the attribute accurately. e.g: "spden" is the number of individuals of all macro invertebrate species found in the plot
Storage:		Storage type for this field e.g: integer, float
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Help	Absolute: measureme Date-Time: date or tim	a meaningful zero point (statistically ratio) e.g: 273 Kelvin om the Gregorian calendar e.g: 2002-10-24
Format:	[e.g: YYYY-MM-DDThh:mm:ss, YYYY-MM-DD, hh:mm:ss.sss
Precision:		Precision of a date or time measurement, interpreted in the smallest units represented by the datetime format. e.g: 1 day, 1 hour, 1 minute
	Min.	Max. Add Range of permitted values, in same date-time format as used in the format description above. e.g if format is





- Enter the datetime format
- Enter the precision of measurement
- Enter the bounds of measurement

Define Attrib	ute or Column			
Name:				Name of the attribute as it appears in the data file
Label:				A more readable label for the attribute
Definition:				Define the contents of the attribute (or column) precisely, so that a data use could interpret the attribute accurately. e.g: "spden" is the number of individuals of all macro invertebrate species found in the plot
Storage:				Storage type for this field e.g: integer, float
Storage System:				The system used to define the storage types e.g: C, Java, Oracle
Help	Absolute:	~		ful zero point (statistically ratio) e.g: 273 Kelvin rian calendar e.g: 2002-10-24
Format:				e.g: YYYY-MM-DDThh:mm;ss, YYYY-MM-DD, hh:mm:ss.sss
Precision:		5		Precision of a date or time measurement, interpreted in the smallest units represented by the datetime format. e.g: 1 day, 1 hour, 1 minute
Bounds:	Min.		Max.	Add Range of permitted values, in same date-time format as used in the format description above. e.g if format is "YYYY-MM-DD", a valid minimum would be "2001-05-29"





- Enter the datetime format
- Enter the precision of measurement
- Enter the bounds of measurement

Define Attrib	ute or Column:	
Name:		Name of the attribute as it appears in the data file
.abel:		A more readable label for the attribute
Definition:		Define the contents of the attribute (or column) precisely, so that a data use could interpret the attribute accurately. e.g. "spden" is the number of individuals of all macro invertebrate species found in the plot
Storage:		Storage type for this field e.g: integer, float
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Help Datetime	0	points (statistically interval) e.g: 12.2 meters ful zero point (statistically ratio) e.g: 273 Kelvin rian calendar e.g: 2002-10-24
Format:	[e.g: YYYY-MM-DD ss , YYYY-MM-DD , hh:mm:ss.sss
Precision:		Precision of a me measurement, interpreted in the smallest units represented stetime format. e.g: 1 day, 1 hour, 1 minute
Bounds:	Min. Max.	Add Range of permitted values, in same date-time format as used in the format description above. e.g if format is "YYYY-MM-DD", a valid minimum would be "2001-05-29"



- 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
- Right-click in table to edit table structure or documentation

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- Click on a table tab to view that table
- Click on column header to see attribute level metadata
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- Click on column header to see attribute level metadata
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- Click on column header to see attribute level metadata
- Click "More" to see data package level metadata
- Right-click in table to edit table structure or documentation



BFS Advanced Editing: The Morpho Tree Editor



"Add/Edit
 Documentation"
 Menu item from
 package
 window

	Morpho Editor	Ø
Show All Trim +	emi	
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E Catarabe	* rscope	
	document	
	Fuille The 'title' field provides a description of the resource that is being documented that is long enough resources. Multiple sites may be provided, particulary when trying to express the title in more than attribute to indicate the baryages if net Employhem.	
	Test Data Set	
	creator	
	The responsible party field sontains multiple subfields that ere used to eccerbe the person, organiz organization that is associated in some way with a resource. It is intended to be used to fully docur types o' associations, such as owner, manager, steward, curator, etc.	
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	document)++

Advanced Editing: The Morpho Tree Editor



- Allows entry of uncommonly used EML elements, which are not available from wizards
- Can view whole
 EML document
- Still under active development

	Morpho Editor
All I Trim 1 + 1 -	remi
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	rtitle
	The 'title' field provides a description of the resource that is being documented that is long enough to differentiate it from other similar resources. Multiple titles may be provided, particularly when trying to express the title in more than one language (use the 'xmtlang' attribute to indicate the language if not English'en).
	Test Data Set
	creator
	The responsible party field contains multiple subfields that are used to describe the person, organization, or position within an organization that is associated in some way with a resource. It is intended to be used to fully document contast information for many types of associations, such as owner, manager, steward, curator, etc.
	id
	1129592697481
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Advanced Editing: Navigating the document



- Select an element to see it's subelements and values on the right
- Double-click to see its sub-elements on the left
- Shortcuts to some nodes available from the dropdown menu

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	Morpho Editor	Ŵ
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▶ = scope	contain one and only one keyword (i.e., keywords should not be separated by commas	or other delimiters).
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Creator	keywordThesaurus	
weywordSet	This field provides the name of the official keyword thesaurus from which keyword was	erived. The keyword thesauri are usually
> access	discipline specific.	
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	n	

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Advanced Editing: Navigating the document



- Select an element to see it's subelements and values on the right
- Double-click to see its subelements on the left
- Shortcuts to some nodes available from the dropdown menu





Advanced Editing: Navigating the document



- Select an element to see it's subelements and values on the right
- Double-click to see its sub-elements on the left
- Shortcuts to some nodes available from the dropdown menu



Advanced Editing: Editing Elements



- Edit the value of an element by changing the text on the right
- Right-click an element on the left to delete, copy, or paste it

	Morpho Editor	
	Morpho Editor	
[Show All] +][_ keywordSet	
Find: eml	The Reynord Set element is a container for the Reynord or word Thesaura' feds. Each keynord more keynords and a name of a thesauru for the ent not keynord field should costal keynords should not be separated by comma or	rdSet field can contain one or n one and only one keyword (i.e.
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► = id ► = system ► = scope ► = title	keywordType	
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 contact access 	This field provides the name of the official keyword thesaurus from which keyword was derived. The discipline specific.	keyword thesauri are usually
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Advanced Editing: Editing Elements



- Edit the value of an element by changing the text on the right
- Right-click an element on the left to delete, copy, or paste it

Show All	€ ⊖ ⊖	Morpho Editor:wtyburczy.52.1	
Find: Image: Second Seco		Morpho Editor	Ø
Delete Add Text Copy Node & Children Replace Selected Node from Clipboard	Find: eml Find:	The "legword Set" element is a container for the "keyword" and "keyword" thesauru" fields. Each keyword Set field can contain one or more keyword s and a name of a thesaurus for the set of keyword. Each keyword field should contain one and only one keyword (i.e., keyword). Each keyword field should contain one and only one keyword (i.e., keyword). The field names a keyword (i.e., keyword). The field names a keyword (i.e., keyword (i.e., keyword). Each keyword (i.e., keyword). Each keyword (i.e., keyword). The field names a keyword (i.e., keyword (i.e., keyword). It is field names a keyword (i.e., keyword). The second or is names a keyword (i.e., keyword). The keyword is a contain one and only one keyword (i.e., keyword). The keyword is a contain one and only one keyword (i.e., keyword). The keyword is a contain one and only one keyword (i.e., keyword). The keyword is a contain one and only one keyword (i.e., keyword). The keyword is a contain one and only one keyword (i.e., keyword). The keyword is a contain one and only one keyword (i.e., keyword). The keyword is a contain one and only one keyword (i.e., keyword). The keyword is a contain one and only one keyword (i.e., keyword). The keyword is a contain one and only one keyword (i.e., keyword). The keyword is a contain one and only one keyword (i.e., keyword). The keyword is a contain one and the official keyword is a contain one and only one keyword (i.e., keyword). The keyword is a contain one and (i.e., keyword). The keyword is a contain one and (i.e	
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Advanced Editing: Show All and Trim



- To see available elements not currently in the data package, hit "Show All"
- After entering information for desired additional elements, hit "Trim"

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Advanced Editing: Show All and Trim



- To see available elements not currently in the data package, hit "Show All"
- After entering information for desired additional elements, hit "Trim"

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Searching for data packages



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- Search on local disks or network
- Search multiple terms using "More"
- Combine subject search with taxonomic and spatial constraints





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- Search on local disks or network
- Search multiple terms using "More"
- Combine subject search with taxonomic and spatial constraints





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- Search on local disks or network
- Search multiple terms using "More"
- Combine subject search with taxonomic and spatial constraints





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- Select taxonomic rank and enter name
- Can search multiple taxa using "More"





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- Select taxonomic rank and enter name
- Can search multiple taxa using "More"



Searching for data packages





 Select area of interest by moving box or enter coordinates by hand

Zoom in to allow greater precision using the graphical box



Searching for data packages



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- Select area of interest by moving box or enter coordinates by hand
- Zoom in to allow greater precision using the graphical box



File



- Data packages matching criteria are listed by last modification date
- Red icon indicates the package includes data table level EML
- Double click a package to open it

-	00	Untitled-Se	arch-4				
e	Edit Search Documentation Data Window Help						8
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	Common Vascular Plants of the Chiricahua Mountains	obfs.400.1	manager Davi t	training flowering plan	2004-10-18	13:33	
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	Kentucky Lake KY Zooplankton Data	obfs2.467.1	White Rice Joh	Kentucky Kentucky La	2003-11-10	13:17	
	Kentucky Lake KY Water Chemistry Data	obfs2.465.1	Rice Johnston F	Kentucky Kentucky La	2003-11-10	13:00	
	Kentucky Lake KY Primary Production Data	obfs2.378.2	Marzolf Johnst	Kentucky Kentucky La	2003-11-06	14:55	
	Laguna Madre Estuary water column data on going from 4/	obfs2.464.1	Montagna Sima I	Laguna Madre Baffin	2003-11-03	07:14	
	Brazos River Estuary benthic data from 10-18-00 to 7-30	. obfs2.463.1	Montagna Sima E	Brazos River benthos	2003-11-03	07:08	
	Brazos River Estuary water column data from 10-8-00 to 7	obfs2.462.1	Montagna Sima E	Brazos River hyddrog	2003-11-02		14
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K	Community of the Chiricahua Mountains	obfs.400.1	manager Davi	training flowering plan	2004-10-18 13:3	3	•
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R.	Lake KY Chlorophyll Data	obfs2.445.7	Johnston White	Kentucky Kentucky La	2004-10-08 09:3	0	2
-	Kentucky Lake KY TN Dissolved Organic Carbon Data	kjohnsto.5.2	Marzolf Rice Jo	Dissolved Organic Car	2004-09-30 11:2	9	•
1	Fecal Coliform Data for Lower Cumberland, Tennessee, and	obfs2.428.2	Johnston Johns	Kentucky Non-point S	2004-09-30 11:1	1	•
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T.	Teakettle Experimental Forest Plant species list	obfs.384.2	Innes innes No		2004-03-17 15:5	3	•
	Marine Fishes and Larva Fishes	obfs2.453.1	Van Guelpen R	marine fish icthology i	2004-03-05 14:2	4	•
	Marine Invertebrates	obfs2.448.1	Pohle Rose-Ta	marine invertebrates f	2004-03-05 14:2	4	•
	Marine Algae	obfs2.436.1	Pohle Rose-Ta	marine algae museum	2004-03-05 14:2	4	2
1	Kentucky Lake KY Zooplankton Data	obfs2.467.1	White Rice Joh	Kentucky Kentucky La	2003-11-10 13:1	7	
	Kentucky Lake KY Water Chemistry Data	obfs2.465.1	Rice Johnston	Kentucky Kentucky La	2003-11-10 13:0	0	•
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	Brazos River Estuary water column data from 10-8-00 to 7	obfs2.462.1	Montagna Sima	Brazos River hyddrog	2003-11-02 16:4	5	2
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