

MUSEUMS



## **SEAWEED COLLECTIONS ONLINE**

## Mobilising data from national and regional museums

Jo Wilbraham & Juliet Brodie Natural History Museum, London









# Why seaweed? Capturing the data Putting it online: Scratchpads













**Seaweeds** represent an important component of UK biodiversity with over **650 species** (c. 7% of the world's seaweed flora)



Seaweeds remain an **under-recorded** group, yet there is an urgent and increasing need for **good quality, verifiable data** on past and present species occurrence to inform on e.g. environmental change, potential pressures from harvesting, loss of habitats, increases in non-native species.





At the NHM we have been using herbarium specimen data to investigate seaweed biodiversity and conservation in the UK

#### Grateloupia turuturu



#### Sargassum muticum



#### Example herbarium sheets of UK non-native species



#### News

News	
News analysis	
Comment	
Features	
Reviews	
People	
Museums Journal: blog	
Search Museums Journal	



Natural history collections are under threat Simon Stephens, 08.11.2012 Loss of expertise has led to lack of care for collections Natural history collections, which are vital for scientific and Comment

Comment Blogroll

Community



Home About Join Careers Publications Collections Campaigns Suppliers Co News Your area Conference & Exhibition Events Museums Change Lives Adve

> Crap in the attic? Paul Smith, 27.11.2013

The future of natural history collections

A little over a year ago, at the Museums Association conference in Edinburgh, a well-attended session entitled The Elephant in the Room arrived intriguingly at two equal and opposite conclusions.

The first was that natural history collections, and their specialist curators, are under threat and that relatively small amounts of investment would solve the problem for the foreseeable future.

The amount needed to purchase a single moderately priced oil painting, for example, would rehouse the entire UK collections of

It is becoming increasingly apparent that more effective networking is needed to enable the continued use of collections in small museums with no specialist staff.

ome

the

Ex

M

## **Seaweed Collections Online Project**

This project came about because we wanted to expand our dataset beyond the NHM's collections to gain a broader view of herbarium data held for UK seaweeds.

The project data would feed into our existing research projects as well as being made widely available.



We were successful with a bid to the Esmée Fairbairn Collections Fund for a 1 year project



## Aims

To capture specimen data from UK museums in order to provide data on the changing distribution of species around the UK.

To make these data widely available via a purpose built website.

#### PARTICIPATING INSTITUTIONS

Booth Museum of Natural History Manchester Museum National Museum Wales National Museums Liverpool Norwich Museum Oxford University Herbaria Plymouth City Museum Plymouth Marine Biological Association

Royal Botanic Garden Edinburgh Royal Collections Trust Shetland Museum and Archives Somerset Heritage Service Stromness Museum The Essex Field Club Natural History Museum, London



PLYMOUTH

CITY COUNCIL

National Museums

MANCHESTER

The University of Manchester

Manchester Museum

iverpoo

Vational Museums Museums Liverpoo Viverpool National













Royal Pavilion, Museums & Libraries









## A target list of seaweeds

To be feasible, we were only capturing data against a target list of species.

These were species we recognised as important in terms of indicators of

- environmental change
- impact on ecosystem functionality and
- level of conservation concern.

= Approximately 15% (c. 100 species) of the total UK seaweed flora.

## Methods

1) Identify target species

2) Data capture

#### either

 Visit museum collection to locate and photograph specimens, then database from images back at NHM

#### or

Pay museums to database their own collections

#### or

- Request data already available
- 3) Build the scratchpad website and upload data



Format P	ainter —	_					
oard	E FO	ont		Fail .	Ali	gnment	
615	▼ (* <i>f</i> x						
C	E	F J	К	L M	N	0	
	Current name	Hi Callecta	r Cullar	. Call date	Country	TC	
1000715595	Antithamnionellaspirographidis (Schi	ffn I. Tittløy, S.	l. Hane s.n.	27/08/1974	Unitedkingdom	trie of Man	Lon
1000642713	Schotteranicaeensis (J.V.Lamour.ex)	Dul I. Tittley, S.	l.Hone BMM67	26/08/1974	United Kingdom	trie of Man	Sca
1000635423	Calpamonia porogrina Sauv.	I.D.Graham	Duyers.n.	03/09/1970	United Kingdom	Mid Ebuder	Nr.[
1000840271	Parphyra loucarticta Thur.	lan Tittley	<b>7</b> 318	08/07/1970	United Kingdom		Lun-
1001032480	Bannemairania hamifera Har.	lan Tittley	A141	31/07/1975	United Kingdom	Banffshire	Ban
1001032479	Bonnemaironia hamifera Har.	lan Tittley	256	29/08/1972	United Kingdom	Berwickshire	Born
1000804758	Sargarrum muticum (Yenda) Fenrhalt	lan Tittley	z.n.	23/02/2007	United Kingdom	EartKont	
1000899038	Undaria pinnatifida (Harv.) Suringar	lan Tittley	z.n.	19/05/2008	United Kingdom	EartKont	Dev
1000899042	Gratoloupia turuturu Yamada	lan Tittley	z.n.	19/05/2008	United Kingdom	EartKont	Dav
1000899037	Gratoloupia turuturu Yamada	lan Tittley	z.n.	19/05/2008	United Kingdom	EartKont	Dev
1000772135	Sargarrum muticum (Yenda) Fenrhalt	lan Tittley	z.n.	/06/1988	United Kingdom	EartKont	Mar
1000768080	Sargarrum muticum (Yenda) Fenrhalt	lan Tittley	z.n.	/06/1988	United Kingdom	EartKont	Fub
1000779357	Arparagoprir armata Harv.	lan Tittley	z.n.	16/07/2006	United Kingdom	EartKont	Boti
1000779363	Gratoloupia turuturu Yamada	lan Tittley	z.n.	16/07/2006	United Kingdom	EartKont	Bote
1000642477	Undaria pinnatifida (Harv.) Suringar	lan Tittley	z.n.	04/02/2004	United Kingdom	EartKont	Barr
1000804666	Undaria pinnatifida (Harv.) Suringar	lan Tittley	z.n.	28/10/2006	Unitedkingdom	EartKont	Onf
1000804683	Antithamnionellaspirographidis (Schi	ffn Ian Tittley	z.n.	28/10/2006	Unitedkingdom	EartKont	Barr
1000642478	Undaria pinnatifida (Harv.) Suringar	lan Tittley	z.n.	04/02/2004	United Kingdom	EartKont	Onf
1000642476	Undaria pinnatifida (Harv.) Suringar	lan Tittley	z.n.	04/02/2004	United Kingdom	EartKont	Onf
1001032688	Undaria pinnatifida (Harv.) Suringar	lan Tittley	z.n.	04/02/2004	United Kingdom	EartKont	Onf
1000804680	Gratoloupia turuturu Yamada	lan Tittley	z.n.	26/10/2006	United Kingdom	EartKont	Barr
1000642390	Sargarrum muticum (Yondo) Fonrholt	lan Tittley	z.n.	29/11/2003	United Kingdom	EartKont	Rec
1000768768	Sargarrum muticum (Yenda) Fenrhalt	lan Tittley	z.n.	26/10/2004	United Kingdom	EartKont	tida
1000779332	Bonnemaironia hamifera Har.	lan Tittley	z.n.	31/10/2007	United Kingdom	EartKont	tida
1000898230	Antithamnionellaspirographidis (Schi	ffn Ian Tittley	z.n.	26/11/2005	United Kingdom	EartKont	Wall
1000898234	Gratoloupia turuturu Yamada	lan Tittley	z.n.	26/11/2005	United Kingdom	EartKont	Dev
1000898206	Gratoloupia turuturu Yamada	lan Tittley	z.n.	26/11/2005	United Kingdom	EartKont	Dav
1000898205	Gratoloupia turuturu Yamada	lan Tittley	z.n.	26/11/2005	United Kingdom	EartKont	Dev
1000840178	Parphyra loucarticta Thur.	lan Tittley	D.201.	27/08/1972	United Kingdom	EartLothian	EAS
1000840179	Parphyra loucarticta Thur.	lan Tittley	D.22.	24/08/1972	United Kingdom	EartLothian	Eart
1000768328	Cadium fragile subsp. fragile (Suringa	r) F Ian Tittley	r.n.	19/12/1977	United Kingdom	Eart Surrox	Blac
1000779419	Sargarrum muticum (Yenda) Fenrhalt	lan Tittley	z.n.	16/05/2007	United Kingdom	Eart Surrox	Neu
1000768327	Cadium fragile subsp. fragile (Suringa	r) F Ian Tittley	515	09/07/1967	United Kingdom	Eart Surrox	2/3
1000635416	Colpomenia peregrina Sauv.	lan Tittley	z.n.	29/07/1982	United Kingdom	Fife	E.[-
1000635415	Colpomenia peregrina Sauv.	lan Tittley	1032	28/07/1982	United Kingdom	Fife	Ree
1000804695	Cadium fragile subsp. fragile (Suringa	r) F Ian Tittley	z.n.	09/08/2006	Unitedkingdom	Irle of Wight	Bom
1000804700	Grateloupiasubpectinata Holmes	lan Tittley	r.n.	09/08/2006	Unitedkingdom	Irle of Wight	Born
1000804706	Sphaoracaccur caranapifaliur Stackh	. Ian Tittley	z.n.	09/08/2006	Unitedkingdom	trie of Wight	Borr
4444455 484	B 1 1 1 14 11			2214214425	11.1. 11.21 1	141 11 1.1	1.41

## 4136 records directly generated from the project

Institution	Records	Dates
Marine Biological Association	4000	1850 to 1993
Royal Botanic Gardens Edinburgh	1435	1778 to 2004
National Museum of Wales	608	1865 to 2013
World Museum Liverpool	550	1821 to 2012
Manchester Museum	391	1833 to 1964
Stromness Museum	380	1839 to 1910
Norwich Museum	280	1801-1973
Essex Field Club	219	1839 to 1910
Oxford University Herbaria	200	18 <sup>th</sup> C -?
Booth Museum of Natural History	69	1858 to 1964
Royal Collections Trust Windsor	66	1840 to 1857
Plymouth City	54	c. 1850-?
Shetland Museum and Archives	51	1949 to 1973
Somerset Heritage Service	31	1840 to 1874

#### Probably c. 5% of UK seaweed collections digitised

## **Getting seaweeds online**

Our requirements for a website platform

- Ability to import a navigable taxonomy (checklist) of UK seaweeds (= c. 650 species in 3 unrelated groups)
- Display specimen data & images of specimens, with distribution maps generated from collection data
- Summary information for UK seaweed herbaria
   (= 'Museum Profiles')

## http://scratchpads.eu/



Why choose Scratchpads?
Concept
Policies 🕨
Partner projects
Sponsors
Resources
Team 🕨
How to cite



#### Concept

Scratchpads are an online virtual research environment for biodiversity, allowing anyone to share their data and create their own research networks. Sites are hosted at the Natural History Museum London, and offered freely to any scientist that completes an <u>online</u> registration form.

Sites can focus on specific taxonomic groups, or the biodiversity of a biogeographic region, or indeed any aspect of natural history. Scratchpads are also suitable for societies or for managing and presenting projects. Key features of Scratchpads (see also Scratchpads feature list) include: tools to manage biological classifications, bibliography management, media (images, video and audio), rich taxon pages (with structured descriptions, specimen records, and distribution data), and character matrices.

Scratchpads support various ways of communicating with site members and visitors such as blogs, forums, newsletters and a commenting system.



#### Seaweed Collections Online

Search ....

All O Taxonomy

HOME PROJECT MUSEUM PROFILES STATISTICS SPECIES SPECIMENS MEDIA GALLERY

View Edit

#### Welcome to Seaweed Collections Online

Welcome to our project which aims to gather, analyse and share data on the seaweed species of the British Isles by mobilising collections data from a network of national and regional museums.





#### **RECENT PAGES**

#### RECENT SPECIMEN/OBSERVATIONS

#### RECENT MEDIA GALLERIES

Introduction to museum statistics

test - test - TEST!

BM herbarium specimens

## Taxonomy hierarchy



Ŧ Gigartina (1) Gloiosiphonia (1) + Gonimophyllum (1) 🕂 Gracilaria (3) 🕂 Gracillariopsis (1) 🕂 Grania (1) Grateloupia (6) Grateloupia dichotoma Grateloupia filicina Grateloupia minima Grateloupia montagnei Grateloupia subpectinata 🗅 Grateloupia turuturu 🕂 Griffithsia (2) • Gymnogongrus (3) 🕂 Haemescharia (1) + Halarachnion (1) Haliptilon (1)



## Specimen data

Seaweed Collections	Online				Searc	ch O Taxo	nomy	SE	EARCH
HOME PROJECT MUSEUM PROFILES STATISTICS SPEC	IES SPECIMEN	S MEDIA	GALLERY						
<u>Home</u> » <u>Grateloupia turuturu</u> » <u>Rhodophyta</u> » <u>Grateloupia</u> » Gra	ateloupia turutur	u							
SEAWEEDS Chlorophyta (45) Ochrophyta (106) F. Rhodophyta (175)	Overview D	escriptions	<i>turutu</i> Media L	<b>ru</b> Yamada iterature Map	a Specimer	ns Revis	ions		⇔
Acrochaetium (20)	SPECIMENS								<b>⇔</b> .
Adiaothamnion (11)     Ahnfeltia (1)     Annfeltiopsis (1)     Anotrichium (2)     Antithamnion (3)     Antithamnionella (3)	Required Specimen    B	Taxon asis of re	omy Catalogue	Collection Collector    C	Miscellane	eous stitution	Location Taxonomic	Collection    Collector	<b>م</b>
<u>Apoqlossocolax</u> (1) <u>Apoqlossum</u> (1)	View speci P	reserved	BM001065	s	s.n. B	IM	<u>Grateloupi</u>	Grateloupi	<b>^</b>
(+) Asparagopsis (1)	View speci P	reserved	BM001065	s	s.n. B	IM	<u>Grateloupi</u>	Grateloupi	
+ <u>Asterocolax</u> (1) + Atractophora (1)	View speci P	reserved	BM001065	s	s.n. B	м	<u>Grateloupi</u>	Grateloupi	
	View speci P	reserved	BM001065	s	s.n. B	M	Grateloupi	Grateloupi	
<u>Boergeseniella</u> (2) <del>I</del> Bonnemaisonia (3)	View speci P	reserved	BM001065	s	s.n. B	M	Grateloupi	Grateloupi	
Boreolithon (1)     Bornetia (1)	View speci P	reserved	BM001065	s	s.n. B	iM	<u>Grateloupi</u>	Grateloupi	
Bostrychia (1)	View speci P	reserved	BM001065	s	s.n. B	M	<u>Grateloupi</u>	Grateloupi	
(1) (1) (1) (2)	View speci P	reserved	BM001065	s	s.n. B	M	Grateloupi	Grateloupi	
<u> - Callithamnion</u> (5)	View speci P	reserved	BM001065	s	s.n. B	IM	Grateloupi	Grateloupi	
(1) (1) (1) (1)	View speci P	received	BM001065			uM.	Grateloupi	Grateloupi	
<u> <u> </u> </u>	View speci P		DH001003	3			Grateloupi		
Caulacanthus (1)	View speci P	reserved	ВМ001065	S	s.n. B	M	Grateloupi	Grateloupi	

## Mapped specimen data



## **Museum Profiles**

				Contact us Report al	buse <u>Help</u>
Seaweed C	Lollections Online		Search • All • Taxonor	ny	SEARCH
me » Museum profiles	3 STATISTICS SPELIPERS	MEDIA GALEKT			
IUS HOME PROJE	CT MUSEUM PROFILES	STATISTICS SPECI	S SPECIMENS	MEDIA GALLERY	
<sup>come</sup> <sup>ional</sup> <u>Home</u> » The Ess	ex Field Club LDPEM				
					-
The Ess	ex Field Clu	b LDPEM			-0
iyal Pav					
MA The Ur Ma	Antho from J Austra aroun the Or	ny Southby and Mr E. G ersey but with some fro alia. Varenne's specimer d Britain. The post 1870 rwell and Stour estuarie	Varenne. South m around the Brit s were collected additions to the s.	y's specimens are ish coastline and f from various locati collection are mair	e mainly from ions nly from
	Collec	tions website: <u>Collectio</u>	ns webpage		

## Challenges

- Locating target species in collections which are filed under older names
- Specimens mis-identified in the collections not enough time to fully check identifications unfortunately
- Unique numbers not always assigned to specimens, though needed for the digitisation process
- Data importing / re-formating to add specimen data to the Scratchpad posed some unanticipated challenges
- Fiddling about with data always takes longer than expected and hindsight is a wonderful thing!

#### Early observations: the impact of Victorian collectors!



Padina pavonica

![](_page_22_Picture_3.jpeg)

Codium bursa

### **Project future**

- Finalise the scratchpad website with content from the project
- Analysis of data particularly in relation to ongoing NHM seaweed research projects
- Explore shared administration of the website with interested partners from the project
- Enhancement of the Museum Profiles section of the website – please get in touch if you have UK seaweeds in your collection!

![](_page_24_Picture_0.jpeg)

This project was funded by the Esmée Fairbairn Collections Fund

![](_page_24_Picture_2.jpeg)

## Acknowledgments

Lee Ismail **Booth Museum of Natural History Essex Field Club** Martin Heywood Peter Harvey **Essex Field Club** Geraldine Reid **Liverpool Museums Rachel Webster** Manchester Museum National Museum Wales, Cardiff Katherine Slade National Museum Wales, Cardiff Ray Tangney Jane Pottas NHM: Project Officer Laurence Livermore NHM: Scratchpad Team Katherine Bouton NHM: Scratchpad Team Molly Carter Norfolk Museums and Archaeology Service Tony Irwin Museums and Archaeology Service Serena Marner **Oxford University Herbaria Oxford University Herbaria** Stephen Harris Jan Freedman Plymouth City Museum and Art Gallery Anne-Flore Laloë **Plymouth Marine Biological Association David Harris** Royal Botanic Garden, Edinburgh Elspeth Haston Royal Botanic Garden, Edinburgh Adele Smith Royal Botanic Garden, Edinburgh **Carol Christiansen** Shetland Museum and Archives **Dennis Parsons** Somerset Heritage Service Stromness Museum Janette Park **Beth Clackett** Windsor Castle Royal Library

![](_page_25_Picture_0.jpeg)