

Synthesis of Systematic Resources  
**SYNTHESYS**




**European Natural History Collections**  
**What can they offer the scientific community?**

Simon Owens, RBG Kew ,  
Rob Huxley, NHM , London

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**Scope and size of Collections e.g.**

NHM London - c80M specimens (6 M seed plants, pteridophytes , algae lichens, bryophytes , myxomycetes, cyanobacteria, pollen and spores )

RBG Kew – 8M seed plants, ferns fungi, pollen and spores and economic botany collections

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**Scope and size of Collections EUROPE**

SYNTHESYS Consortium of 20 of largest collections institutions – 333M Specimens!

A vast resource for science ?Integrated infrastructure?

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**Why are they significant?**

Academic - Tangible proof of old research  
Scientific- voucher specimens  
Cultural – history of collecting, science etc  
Centres of gravity - held in museums herbaria universities, geological surveys and other government and/or research institutions, amateurs and petroleum companies

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**Who uses them?**

Taxonomists (traditional use)  
Biogeographers  
Environmental/Conservation Biologists  
Police/Forensic science  
Ecologists

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**Who uses them?**

Environmental biologists  
Revenue and Customs  
Artists  
Military  
Business  
Jewellers and auction houses

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**What can they offer**

- Names – e.g Authentication in medicine and law
- Location data e.g. monitoring distribution of pest species
- Range of Morphological variation e.g. Systematics
- Phenological data e.g. climate change research
- Indigenous use data e.g. Ethnography/drug prospecting
- DNA extraction e.g. systematics and population studies
- Chemistry (drug prospecting)

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**Can Collections be used more for ...?**

monitoring biodiversity loss?  
developing innovations between biology and engineering?  
science history?  
culture or science? Science is culture?  
academic heritage-what percentage?  
sociology/art-what can collections learn?

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**What are their weaknesses?**

Relatively few common plants – many rarities!  
Lack of current taxonomy – in some institutions  
Curator concerns over collections risk! (see Molecular talk)  
Incomplete series due to haphazard development  
Insufficient information on where collections are located – poor advertising

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**SYNTHESYS – Improving Access to European Collections**

SYNTHSEYS “1” - FPVI 5 year project finishing July 2009

- 2- part project Access, Networking

SYNTHSEYS “2” - FPVII 4 year project starting September 2009

- 3- part project Access, networking and research

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**Access:**

Funds visits to European Collections by researchers

**Networking activities:**

improve management of European collections through surveys, standards and training (traditional and molecular)

provide data on collections strengths and weaknesses

improve access to collections databases - Biocase

**Held workshop in Nov 08 on “User Base”**

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## **QUESTIONS FOR THE WORKSHOP**

What can we do to make our collections more useful to the broader community you?

What can the community do to add value to our collections?