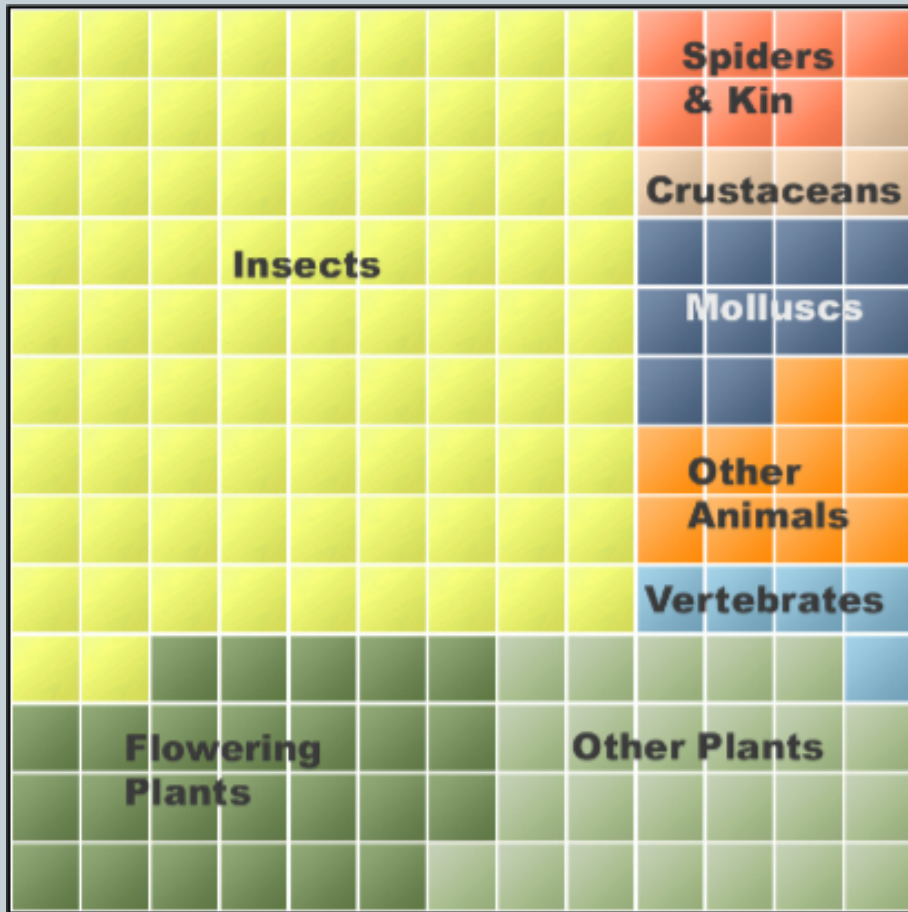


international
BARCODE
OF LIFE

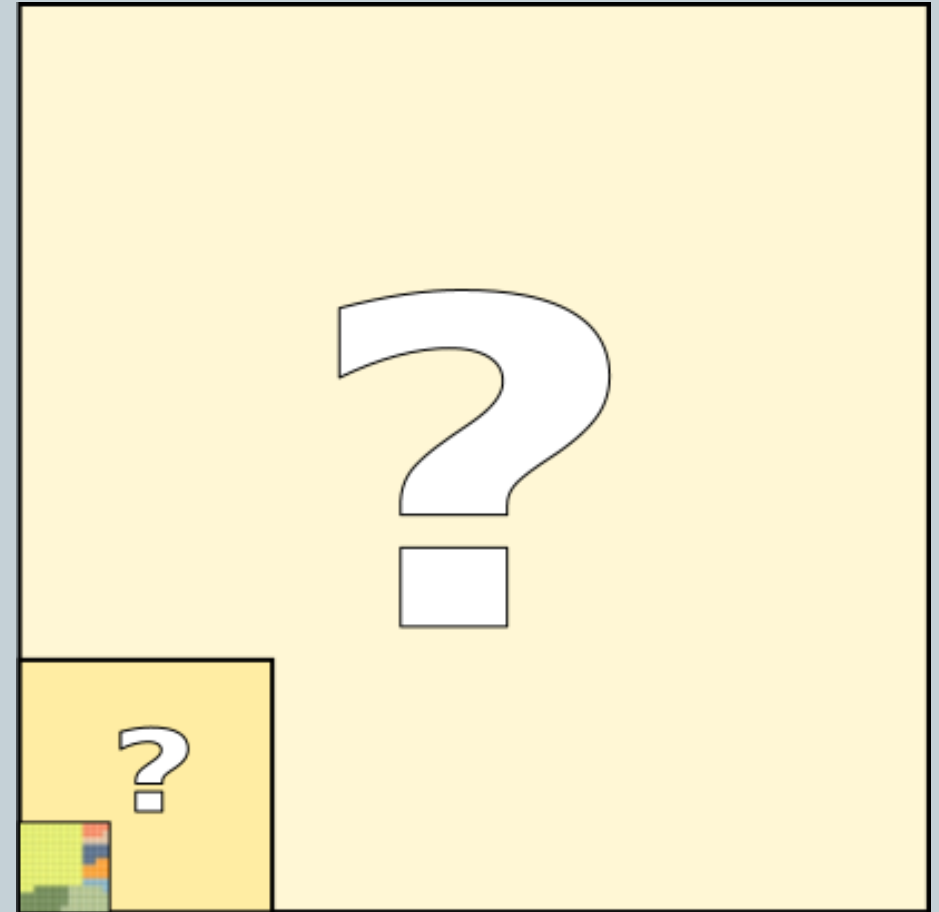


Making Every Species Count

What we don't know. . .



**Known biodiversity:
1.7 million species of
plants and animals**



**Estimated biodiversity:
10 million to
100 million species**

CCTATACCTAATCTTCGGAGCATGAGCGGGGCATGGTAGG



DNA-based Identification System

Universal Product Code



- Ten unique states
- Twelve distinct positions

DNA Barcode



- Four unique states
- Over 600 positions

DNA barcoding is . . .



- Large-scale
- High-throughput
- Standardized

approach to identifying species using
a short fragment of their DNA

The many uses of DNA barcodes



- A research tool for improving species-level taxonomy
- A tool for flagging hidden diversity
- An applied tool for identifying regulated species

Imagine...

a world in which you can know the name of

any animal



any plant



any fungus



any organism



on the spot

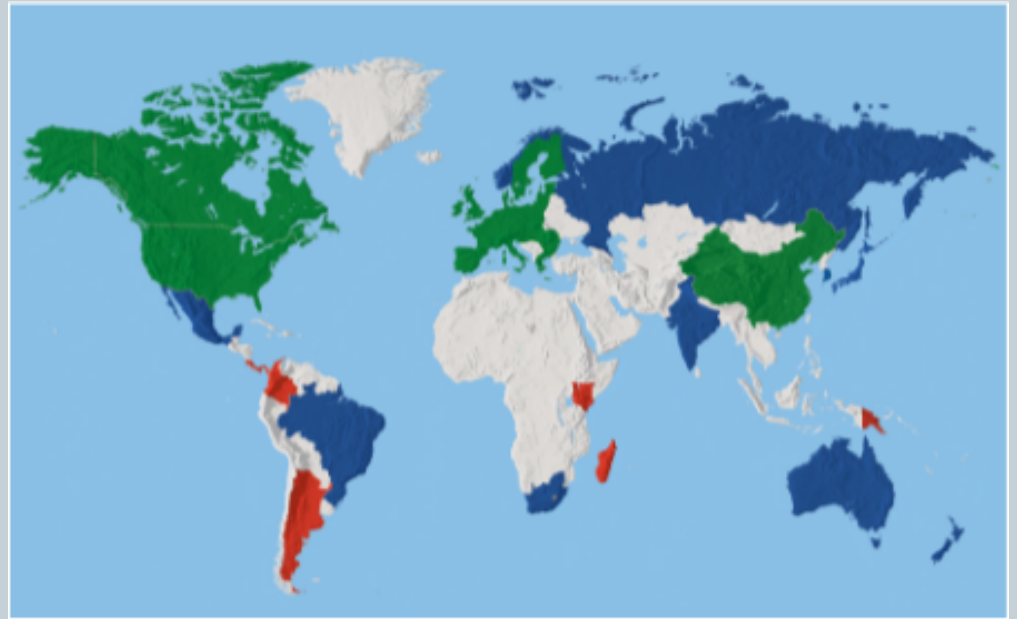
in an instant

anywhere on our planet

A global science project



international
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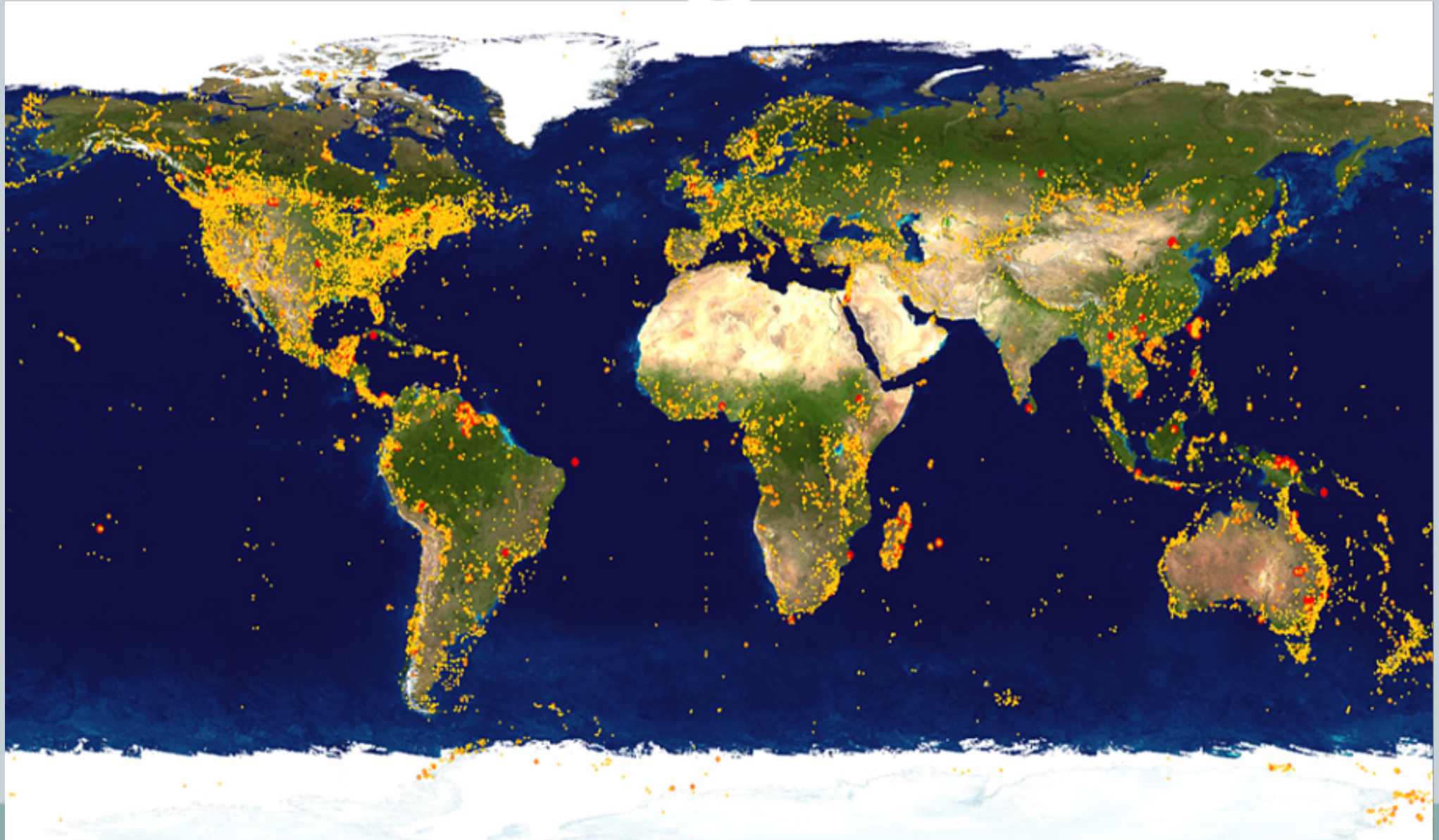


- ▶ 5 years
- ▶ 5M specimens
- ▶ 500K species

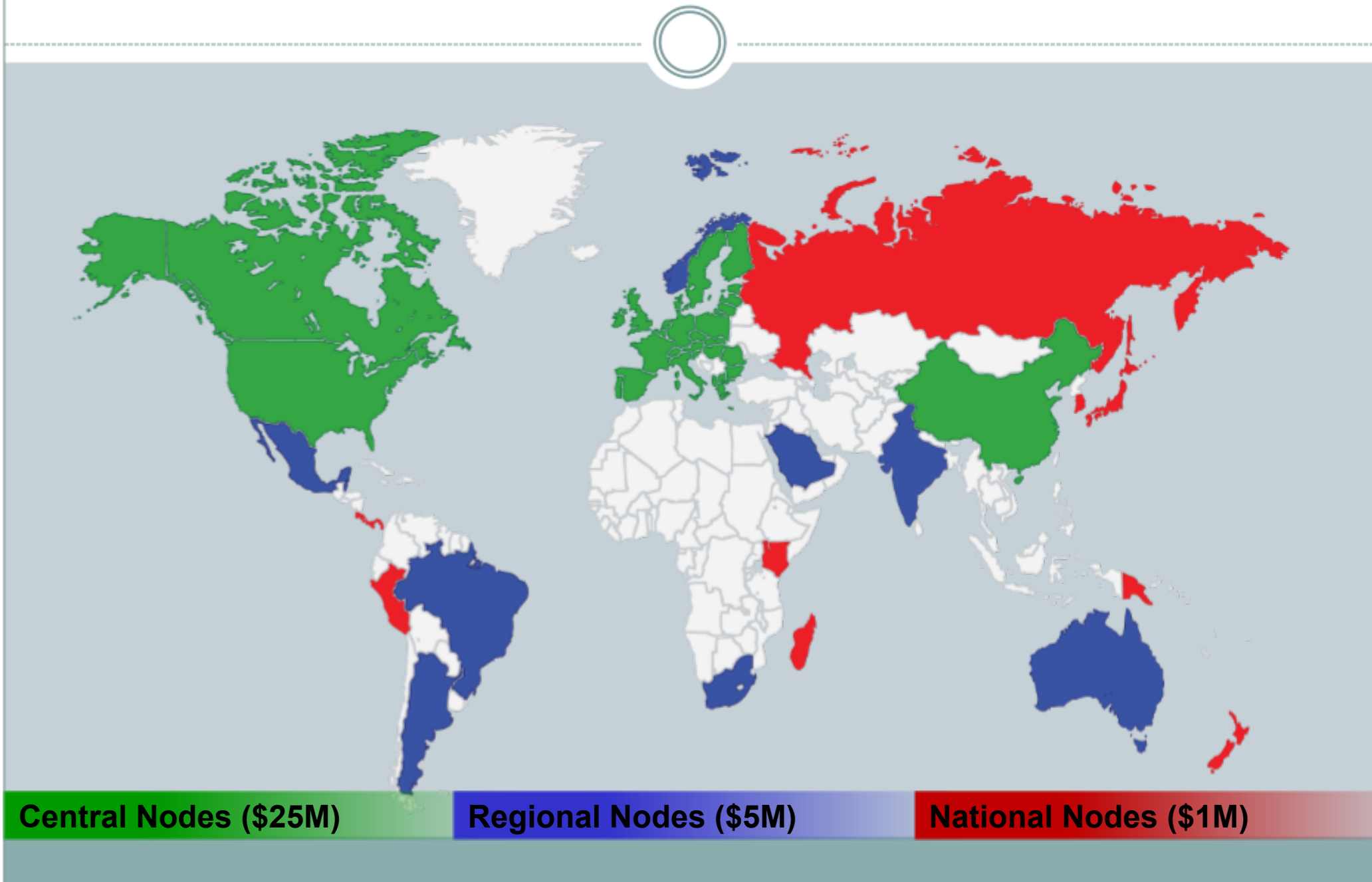


Official launch of iBOL – CN Tower, Toronto, September 25, 2010

iBOL launches with 1M records, 100K species



iBOL structure: participating nations



iBOL Themes



- 1. DNA Barcode Library
- 2. Methods
- 3. Informatics
- 4. Technologies
- 5. Administration
- 6. GE³LS



Theme 1: DNA Barcode Library

WG1.1 Vertebrates

WG1.2 Land Plants

WG1.3 Fungi

WG1.4 Animal Parasites, Pathogens & Vectors

WG1.5 Agricultural & Forestry Pests & Parasitoids

WG1.6 Pollinators

WG1.7 Freshwater Bio-Surveillance

WG1.8 Marine Bio-Surveillance

WG1.9 Terrestrial Bio-Surveillance

WG1.10 Polar Life



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iBOL WG 1.5



- Bringing genomics to the fight against plant pests and invasive species
- Assembling a DNA barcode reference library of pests and their parasitoids
- 2015 target: 25,000 of the most important pest species

iBOL WG 1.5 – rapid progress



iBOL WG 1.5 Agricultural and Forestry Pests and their Parasitoids					
Groups	Species Targets	iBOL Progress to 31.12.10		Overall Progress to Target	
		Species	Progress	Species	Progress
True Bugs	5,000	712	14%	2,505	50%
Earwigs	100	16	16%	20	20%
Grasshoppers	500	151	30%	689	138%
Lacewings etc.	500	129	26%	277	55%
Mantises	100	9	9%	155	155%
Parasitic Flies	3,000	956	32%	1,829	61%
Parasitic Hymenoptera	8,000	2,293	29%	6,351	79%
Pest Flies	2,000	874	44%	1,699	85%
Predatory Beetles	4,000	1,515	38%	3,755	94%
Sawflies	700	80	11%	284	41%
Stick Insects	100	23	23%	29	29%
Thrips	1,000	96	10%	200	20%
Grand Total	25,000	6,854	27%	17,793	71%

In the dark in a large urban park: DNA barcodes illuminate cryptic and introduced moth species

Jeremy R. deWaard · Jean-François Landry · B. Christian Schmidt · Jennifer Derhousoff · John A. McLean · Leland M. Humble



Common goals: policy implications of DNA barcoding as a protocol for identification of arthropod pests

Robin Floyd · João Lima · Jeremy deWaard · Leland Humble · Robert Hanner

Mitt. Münch. Ent. Ges.

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133-1

München, 15.10.2009

ISSN 0340-4943

DNA barcoding enables the identification of caterpillars feeding on native and alien oak (Lepidoptera: Geometridae)

Martin M. GOSSNER & Axel HAUSMANN

OPEN ACCESS Freely available online

PLOS one

Towards a Global Barcode Library for *Lymantria* (Lepidoptera: Lymantriinae) Tussock Moths of Biosecurity Concern

Jeremy R. deWaard^{1,2,*}, Andrew Mitchell³, Melody A. Keena⁴, David Gopurenko⁵, Laura M. Boykin⁶, Karen F. Armstrong⁶, Michael G. Pogue⁷, Joao Lima⁸, Robin Floyd⁹, Robert H. Hanner⁸, Leland M. Humble^{1,9}

DNA barcoding exposes fake ferns in international plant trade

Published: Tuesday, May 4, 2010 - 14:44 in [Biology & Nature](#)



Genetic “fingerprints” of weevil species (Coleoptera: Curculionidae) with potential pest status in German horticulture

Jacqueline Hirsch^{1*}, Peter Sprick², Annette Reineke³



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Section of PhytoMedicine, Von-Linde-Str. 1, 65366 Seligenborn, Germany

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²Curculionidae Research Group (CURC)
Vockenstr. 15, 30451 Hannover, Germany

Multilateral cooperation



Signing of MOU with UN Convention on Biological Diversity
COP10, Nagoya, Japan – October 20, 2010

international
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