Specimen-based databases for the study of invasive species

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Use of databases: conservation, biodiversity, invasions...

Figure 1 The 25 hotspots. The hotspot expenses comprise 30–3% of the red areas.

Hotspots for plants, vertebrates

## 2 kinds of databases

<table>
<thead>
<tr>
<th>type:</th>
<th>species accounts (species pages)</th>
<th>specimen-based (vouched)</th>
</tr>
</thead>
<tbody>
<tr>
<td>smallest unit:</td>
<td>species (all individuals)</td>
<td>specimen (individual)</td>
</tr>
<tr>
<td>what is mapped?</td>
<td>geo-political unit</td>
<td>individual GPS points</td>
</tr>
</tbody>
</table>
**Taxon:** *Miconia calvescens* DC.

**Genus:** *Miconia*
**Family:** *Melastomataceae*
**Nomen number:** 409651
**Place of publication:** Prodr. 3:185. 1828
**Name verified on:** 10-Dec-1997 by ARS Systematic Botanists.
No species priority site assigned.

**NO ACCESSIONS IN NPGS UNDER THIS NAME.**

**Common names:**
- miconia  (Source: Plant Invasion)

**Economic importance:**
- Environmental: ornamental  (fide Invasive PI Spec)
- Weed  (fide Meyer & Florence 1996; Invasive PI Spec)
Moorea Biocode Project

Moorea, home of the UC Berkeley Richard B. Gump South Pacific Research Station and France's Centre de Recherches Insulaires et Observatoire de l'Environnement (CRIOBE), is the site of an ambitious project to create a comprehensive inventory of all non-microbial life on the island. Supported by a new $5.2 million grant from the Gordon and Betty Moore Foundation, the Moorea Biocode Project over the next three years will send researchers climbing up jagged peaks, trekking through lush forests and diving down to coral reefs to sample the French Polynesian island’s animal and plant life. A library of genetic markers and physical identifiers for every species of plant, animal and fungi on the island is being constructed. This database will be publicly available as a resource for ecologists and evolutionary biologists around the world.
Detail of Specimen No. MBIO4401

Scientific Name **Carpophilus humeralis** Fabricius 1798

Specimen No. MBIO4401
Biocode No. MBIO4401
Institution Essig Museum of Entomology
Biocode Event ID 239

Collected by Curtis P. Ewing (Sep 28, 2006)
Location Tiahura Is. (Moorea Island, Society Islands, French Polynesia)
Habitat Non native
Identified by C. Ewing (Jan 22, 2007)
BioIP [Moorea Biocode MOU](https://www.illustra.org/moorea-biodecode/)

Phylum Arthropoda
Subphylum Hexapoda
Class Insecta
Subclass Pterygota
Infraclass Neoptera
Order Coleoptera
Suborder Polyphaga
Infraorder Cucujiformia

Sex/Cas
Life Stage
Par
Leng
Weight
Individual Count

Curtis Ewing and Andrew Brennan © 2007 Moorea Biocode
Advantages of specimen-databases

- Vouchers for further study-systematics, DNA, symbionts, etc.
- Associated “meta-data”--habitats, ecological associations
- Geospatial analyses possible, including predictive modeling with habitats, climate change, etc.
- Can link databases adopting international standards