SYMBIOTA: Interactive Field Guides for Teaching Biodiversity

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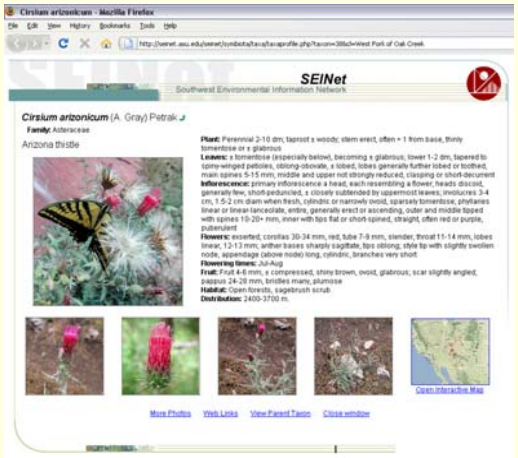
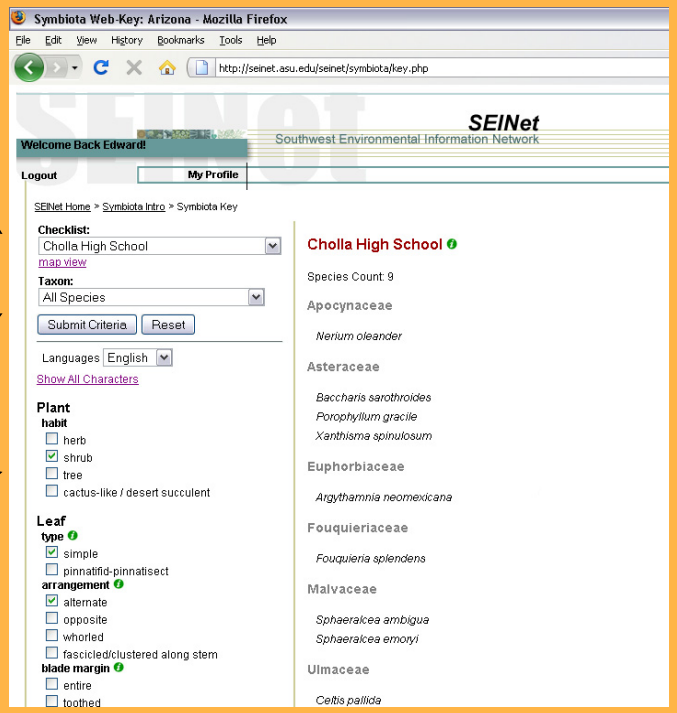
Teaching Biodiversity

What are the best methods for teaching youth about the organisms around us? Symbiota is an information portal designed with the central purpose of teaching students and the general public about regional biodiversity. Web-based data management tools allow the scientific community to collaboratively build a solid foundation of biological resources. Educators and the general public can then use this quality maintained dataset as an educational resource specifically geared to their local community. The flexibility of this system has enormous potential as it can be customized to meet a full spectrum of needs – from the middle school student just being introduced to local species to the professional taxonomist who expects a highly comprehensive dataset.

Species Profile Page



Interactive Multistate Plant Key



Step 1: Select a geographic checklist. Biologists assist teachers and students in building site-based checklists.

Step 2: Limit species list to a taxonomic group, if possible

Step 3: Reduce possible identifications using morphology

Step 4: Selecting a scientific name will open the species profile page featured to the left. Checklists can be displayed by scientific or common name.

Species Distributions

What the Future Holds!

Custom Field Guides

- Print at home to use in the field
- Possible sample guides:
  - Lichens of the Grand Canyon
  - Shrubs of Maricopa County
  - Plants I have found in my backyard

Educational Games & Quizzes:

- Identify random images
- Match image with name

Other Interactive Features

Personalized Checklists

- Organize and maintain an on-going list of all the plant species you have seen
- Build custom plant lists of species seen within your property or another area of special interest

Teaching Resource

1. Teachers create a small list of plants found within the school yard
2. This list is used with the interactive keys to teach basic identification skills
3. New species and morphological characters are added to the key as the students' knowledge increases

Benefits of Scientific Collections

- Species lists can be generated dynamically from specimen data (e.g. List all species collected within 10 miles of a given point of interest)
- Using collection data, create an identification key for almost any locality

Built and Managed by Scientists

Source data and images are supplied and managed by the scientific community. Data management via web interface enables worldwide collaboration of biologists in order to ensure a foundation of high quality data.

SEINet Virtual Flora
http://seinet.asu.edu/seinet/index.php

Global Institute of Sustainability, Arizona State University

ASU Herbarium

Arizona-Sonora Desert Museum