Bishop Museum's Hawaiian Biological Survey project for the Alien Species Database was started in FY09 and is intended to provide up-to-the-minute information about the status of alien and invasive plant and animal species present in Hawaii, as well as identification services for introduced species. There are already 5,314 alien species documented as established in the wild, many thousands more are known to occur. This supports one of the HISC's legal mandates: "For those species that do arrive in Hawaii, identify and record all introduced and invasive species present in the State." Extra attention will be given to incipient species, and the information is expected to support management efforts and regulatory and policy issues that require agencies to know which species are present in Hawaii.

When completed the database will provide the following benefits:

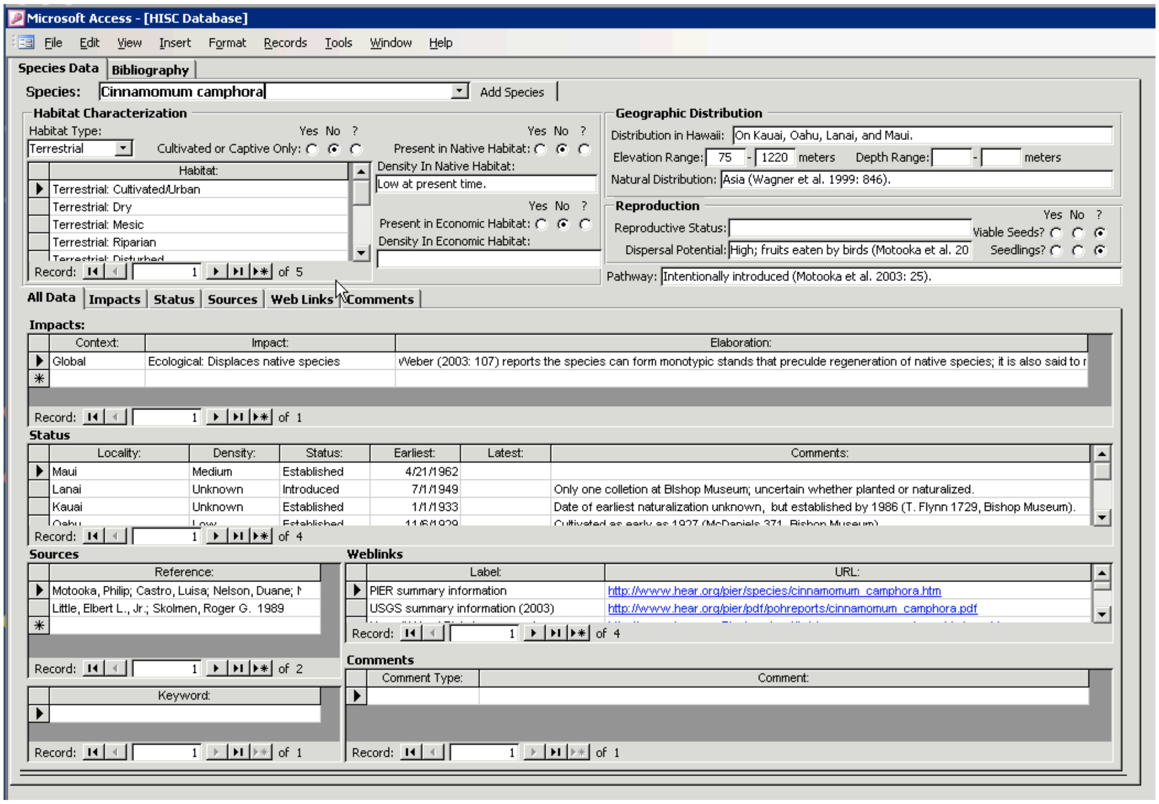
- Provide single, compiled source of information on all alien species in Hawaii
- Provide summary statistics about invasives and their trends in Hawaii
- Provide real-time updating of information from management and research communities
- Meet HISC strategic plan goal of identifying and compiling information on all invasive species in the state
- Serve entire invasives-management community by providing information useful for:
    - Preventing inter-island movement of known invasives
    - Identifying invasives at high risk of movement within the state
    - Identifying which species justify triggering private-property access provisions for control purposes
    - Identifying incipient populations liable to rapid eradication
    - Sharing among all stakeholders relevant information to assist in management of invasives
    - Taxonomic identification
    - Informing Legislature and general public of management needs and progress

HISC Alien Species Database Project

Bishop Museum has designed, tested, and implemented a database of scientific information for alien species within Hawaii. It is planned that this database will serve to better identify those aliens that are invasive, help identify new incipient invasions, indicate available information supporting these assessments, and highlight taxa for which data are deficient.

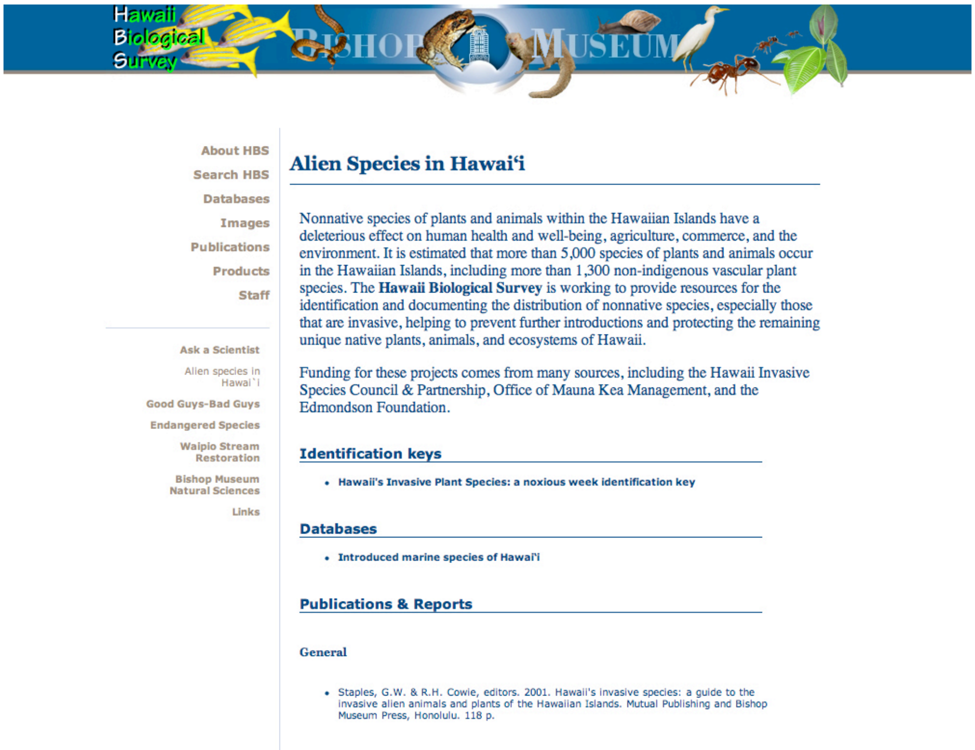
The database entry fields were designed to accommodate both plants and animals, as well as deal with terrestrial and aquatic ecological parameters. In the initial stages of the database, test entries were made to work out most potential user problems. In late March/early April, assertive data entry efforts began. To date, 266 of the target 300 species have been entered into the database with detailed and up-to-date biological, habitat, and other ecological information.

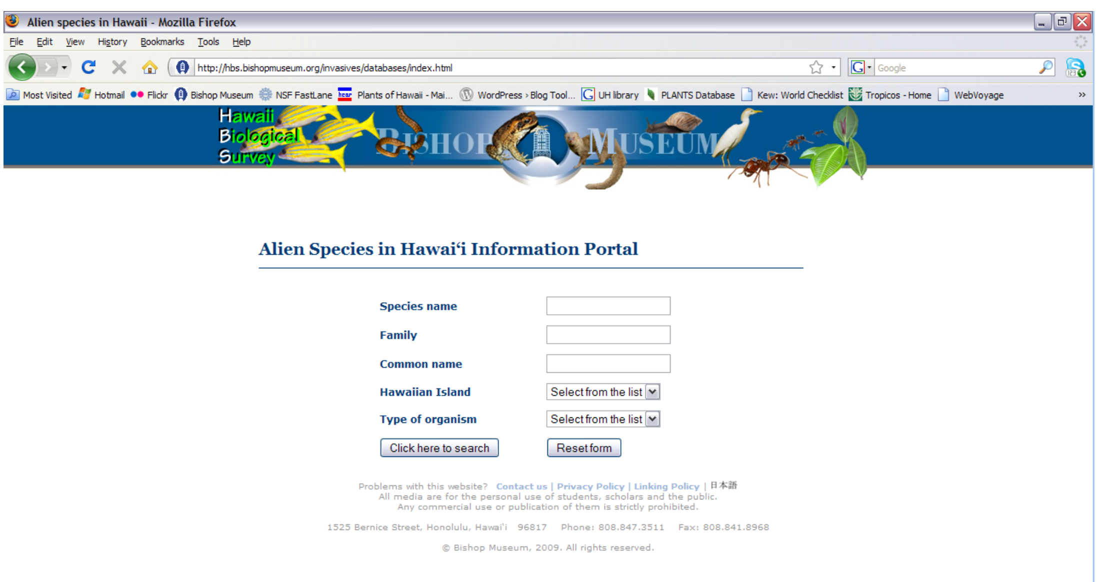
A screenshot of the data entry page of the database is appended below showing the fields that were selected for entry. All data entered is based on published literature. Unpublished data is annotated in the "Notes" field. Literature sources and web links to additional information are included for each species.



Relevant to ecological parameters, two master databases residing at Bishop Museum are being tapped into for data entry in addition to the data entered for each species: 1) species names database (a nomenclatural database that includes the name of most plants and animals occurring in Hawaii); and 2) a master literature database. In addition, we are working with other agencies, such as the USGS NBII PBIN (Pacific Basin Information Node) to synchronize data residing in our respective databases and have been collaborating with our local, state and federal partners to integrate data from recent nonnative plant and animal surveys they have funded throughout the Hawaiian Islands.

An interactive database website (see figures below of the front page to all of the Bishop Museum's "Alien Species" resources and the "in development" query form being designed for the database) will transform the project's data information into a useful public service tool for both online queries as well as also allow the public to enter updated information or corrections via a quality-control buffer. [http://hbs.bishopmuseum.org/invasives/]





A list of the names and island distributions of 3,000 nonnative species is being prepared for uploading to the database and website.

The project team includes Bishop Museum scientists entering species data in botany, entomology, marine invertebrates, and snails, and vertebrates.