

Weed Mapping Working Group – Designing Web Resources and a Field Course

Facilitator: Steve Schoenig (CDFA)

Topic leader: Jason Giessow (DENDRA, Inc)

Note taker: Jason Casanova (Los Angeles & San Gabriel River Watershed Council)

10:30am

Introductions

10:35am

Updates on Current Mapping Projects (NSDI, UC IPM)

Steve Schoenig began the discussion with a review of recent mapping subcommittee projects.

Statewide map of Arundo (underway)

- Southern California (data being currently being assembled through WMA funding)
- Team Arundo del Norte (funding for mapping provided by Calfed)
- Central Coast Mapping – San Luis Obispo County data being assembled by Marc Lea at the County Agricultural Department.

NSDI Grant

Deanne Dipietro (Sonoma Ecology Center) wrote a grant proposal on behalf of Cal-IPC for USGS NSDI (National Spatial Data Infrastructure) funding. Cal-IPC received \$20,000 to coordinate data aggregation statewide through a consortium. The mapping workgroup met in June 2006 to discuss existing mapping efforts, standards, data sharing, and planned consortium initiatives. The group is currently developing a set of web resources (see *Mapping* on the Cal-IPC site) as well as a metadata portal to the CERES (California Environmental Resources Evaluation System) catalog. Other short term efforts include developing presence-absence maps for Cal-IPC listed weeds.

UC IPM Grant

Cal-IPC received a grant from the Statewide Integrated Pest Management Program to develop spatial predictive models for select invasive species. Criteria for the model will include temperature, rainfall, biology, etc. Results will show where each weed is predicted to survive and can lead to large-scale estimates of impact and removal cost.

11:00am

Cataloging, Coordination, and Sharing of Existing Data

Jason Giessow led the discussion on data sharing. To avoid reinventing the wheel, Cal-IPC is proposing two existing avenues that could be used to host data online:

1. California Dept of Fish and Game is currently hosting an ArcIMS called BIOS (bios.dfg.ca.gov). Intuitive site with infrastructure in place. Contains comprehensive base data layers. Could potentially be used for posting locally-driven “Red Alert” species as well as statewide datasets (*Arundo donax*, *Brassica spp.*, etc.)

2. Calflora. Site currently hosts latitude/longitude coordinates for plant sightings and associated photos. Could be used to input new weed sightings (photo input makes it useful for identifying “Red Alert” species).

Other methods for sharing data could include a) hosting data on your own site or b) linking data through the Cal-IPC site.

Audience question: Is there a statewide map for yellow starthistle?

Answer (Steve): Yes, CDFG has baseline data for A-rated weeds (~25 species) throughout the state (based on records from roughly 400 collaborators comprised of WMAs and Ag Departments throughout the state). Cal-IPC efforts stemming from the mapping group have also produced “red sesbania” data for most of the state (venues are currently being examined for hosting the data online).

Audience question: Are CDFG maps online?

Answer (Steve): No, there currently is no IMS (Internet Mapping Service) hosting the data. There are privacy concerns from landowners in regards to making the data publicly available online.

Steve reiterated the Cal-IPC presence/absence mapping effort. Cal-IPC will be sending lists to WMA to collect coarse data on ~30 species. Jason then raised the question regarding what species we should focus our mapping efforts on. And what object type should we use? Points? Polygons? Raster?

Brainstorming session began for recommending plant species. The group came up with the following list:

Scotch/French broom	Pennisetum spp.
Tree of heaven	Tamarisk
Knapweed	Gorse
Iceplants	Slenderflower thistle
Cape ivy	Erharta grass
Poison hemlock	Stinkwort
Eupatorium	Purple starthistle
Woolly distaff thistle	Medusahead
Milk thistle	Sahara mustard
Knotweeds (Fallopia subgenus)	Fennel
Pampas/jubata grass	Onionweed
Carnation spurge	Perennial pepperweed
Big periwinkle	Italian thistle
Goat grass	Castor bean

Also, include RED ALERT species in priority list. Several questions arose after the list was developed.

Question: Why can't Cal-IPC include a more comprehensive list of plants with some amount of detail? (*beyond just presence/absence.*)

Answer: Localized data collection will be geared toward project-specific goals and therefore each dataset will vary in detail. Cal-IPC's initial goal is baseline information and will be refined in the future to include additional information. (*Question noted for future discussion.*)

Question: Is there a site for surveyors to enter points into a database?

Answer: We are looking into options to have this functionality (see BIOS and Calflora above). (*Question noted for future discussion.*)

Comment: Google Earth should be examined to conduct rough mapping at both a local and statewide level. It's free and fairly intuitive.

Question: How often should maps be updated?

Answer: Updates will vary on the project and will be goal-driven. It will also depend on whether or not eradication will follow any field mapping efforts.

Question: Should we collect a select list or focus on RED ALERT species?

Answer: (*Question noted for future discussion.*)

Question: What data model should we use?

Answer: Again, it will be goal-oriented (project-dependent). The NAWMA (North American Weed Management Association) standard has been adopted by Cal-IPC. The WIMS (Weed Information Management System) data model (similar to the California Natural Diversity Database - CNDDDB) is one option that can be used for inventory, monitoring, and control. Attributes are based on the NAWMA standard (see follow-up on WIMS at the end of meeting).

11:30am

2007 Weed Mapping Field School Discussion (Brainstorming Session)

Steve Schoenig gave a brief introduction regarding the intended objectives of the field course. It is anticipated that the school will be 1-2 days. He then opened up the floor to any suggestions regarding workshop topics and class structure.

Audience suggestions for workshop topics:

- Assess how class participants may be using the data they collect in the field.
- How will the information they collect in the field translate into the statewide database?
- How can we collect and incorporate negative data into our database? Demo "tracking" function on the GPS.
- Cover GPS background (triangulation, location, navigation.). How do we assess the accuracy of the data (PDOP, differential GPS)?

- Include discussion on projections/datum types
- Resolution (imagery resolution needed for field work); Scale (At what scale should we be mapping?)
- Cover map compilation basics in the GIS (re: final output maps)
- The audience was given two options on how the class could be presented: “hands-on” or a “how-to” presentation w/ follow-up questions. Majority vote was for the “hands-on” approach.
- Create web-based training items (tutorials via PowerPoint, PDF, etc.)
- Data types (vector vs. raster)
- Raster imagery types (true color, IR, hyperspectral, etc.)
- Resource links (Related tutorials, data sources, etc.)
- Differentiate the class sessions between inventory vs. monitoring (A quick survey of the audience showed low interest in a monitoring component; most were interested in general inventory).
- Include overview on metadata standards and metadata development
- Tools and/ methods for data collection (WIMS, Geodatabase, Mylar-Hardcopy, etc.)
 - Suggestion was made to test data collection methods simultaneously (“head-to-head”)
 - Discuss costs associated with each method (purchase costs vs. operational costs)
- Discuss creating symbology for map output (differentiating species, portraying percent cover, etc.)
- Cover data management (discuss BMPs for data structure and organization; geodatabase setup; etc.)
- Discuss standards for field data collection (i.e. NAWMA) to create consistency amongst mappers statewide.
- Some participants recommended that the field course should be targeted toward beginners. Others suggested breaking the field class into two tracks: a beginners group and an advanced group.
- One framework suggested for the class structure:

Day 1 –
GPS field class (morning session)
Importing data from the field (classroom session)

Day 2 –
General issues: GPS background, data structure, map compilation (classroom session)

12:00pm

Wrap-up discussion on WIMS (Weed Information Management System)

Steve briefly described WIMS to the new members of the group. WIMS is an MS Access-based database application that allows one to inventory and monitor weed infestations based on NAWMA standards. The application can be installed on a handheld unit (ex. Pocket PC), and used in conjunction with a GPS and ESRI's ArcPad to collect and update data in the field. The WIMS structure matches closely with the CDFA weed inventory database. Two-day courses are currently being offered by the Nature Conservancy and its partners on an ad-hoc basis. The software is available free for download:

WIMS 2.2b - <http://tncweeds.ucdavis.edu/products/wims/installation.html>

WIMS 3.0 beta - <http://gforge.casil.ucdavis.edu/projects/wims>

He then gave an update on the current status and future of WIMS. The current version (WIMS 3.0 beta) includes a variety of "back-end" database upgrades as well as a new interface that will insure better data integrity. WIMS 2.2 and 3.0 versions are currently not interchangeable. Databases cannot be shared between the two versions at this time. There is still some additional functionality that is planned for WIMS 3.0. Funding is being sought to continue development and provide additional training.