

TAdN Steering Committee Meeting
April 3, 2002

Morning Presentation: Arundo Surveying and Monitoring Protocol

Deanne DiPietro gave a slide show that explained the Arundo Surveying and Monitoring Protocol, and provided training in how to conduct a survey and enter the data into the online database. The slide show, along with the field forms and instructions, can be seen on the TAdN website at <http://teamarundo.org/survey/>. (For more information about the protocol, see the website or contact Deanne at deanne@ucdavis.edu.)

The information covered in the morning presentation, along with some supplementary comments, are outlined briefly below.

PURPOSE AND GOALS

The goals of the Arundo Surveying and Monitoring Protocol are to document:

- the locations where Arundo is growing.
- site quality.
- the eradication work completed.

Some questions we are seeking to answer include:

- How much was eradicated?
- How effective was the method(s) used?
- What are the Arundo invasion patterns where it is and why?
- What are the impacts of Arundo on a site? (i.e., What happens when it invades a site, and what happens when it is taken out?)

DATA MODEL

This protocol follows national standards, and is based on the North American Weed Management Association weed mapping protocol (NAWMA). It is nested for data collection and meaningful characterization of the invaded area, and uses simple tools, keyword lists, and checkboxes for rapid, practical surveying.

DATA STANDARDS

Agreeing upon data content elements among various protocols makes it possible to:

- share data.
- generalize results.

- place results in context of national or international eradication goals.

Some databases that can use our Arundo data include:

- Southwest Exotics Mapping Program
- USGS Database
- Cal Flora Database.
(This database contains an Arundo distribution map, which is slowly becoming more useful. If we can give them our data, it will help to update it and make the map more useful.)

Gathering data on the extent of invasives can impact the listing of various invasive species in the state, and thus impact management practices.

MATERIALS

Two methods are available to input data: MS Word forms or online forms.

BEFORE GOING OUT IN THE FIELD:

- Identify Arundo sites.
- Secure landowner permission for access.
- Obtain a GPS unit and camera (digital preferred).
- Obtain needed maps.
- Print the field forms in preparation for fieldwork.
- Gather your people and stuff (see checklist).

SURVEYING

- Know how to delineate a site.
- Consider whether you want to group each observation (point#) into separate clumps or into one area containing many small clumps.
- Divide up the survey work by deciding who will do what.

Things to Consider:

- continuity (of clumps).
- environmental characteristics of the stream and surroundings (since you will be describing them for the site as a unit).
- access, ownership. (Who owns the land? Public vs. private land may allow different treatments and you may end up doing the treatments at different times.)

OBSERVATIONS

One site can have one or many observations. How you divide or group them is up to you, but you should keep in mind the fact that all subsequent treatments and monitoring observations will be associated with that observation (i.e., you can't split them up later!).

Carefully consider your treatment plans, because you will be filling out a treatment log for each observation. For example, if you plan to use the cut stump method on one group of clumps, and a foliar application on another, then those groups of clumps should be described in separate observations. The nature of the infestation may also influence how you identify observations. Continuous swath of *Arundo* that crosses several properties should be cut up into one observation per property, while a discontinuous infestation may lend itself to more individual observations on one property. (See the examples in the Introductory Slide Show on the TAdN.)

The larger the area that is infested (e.g., 10 miles of a stream vs. a couple of 100 feet), the less feasible or critical it becomes to distinguish between individual clumps. Keep in mind that we're mapping to eradicate, so try to be efficient while making accurate observations.

DIVIDING UP THE WORK

Two or three people make the best size surveying group. Typically, one person has a clipboard, camera, and takes photos. A second person has the GPS unit, whiteboard, and writes photo numbers on it. A third person (if available) can do the hand-mapping (for in-house use only). Aerial photos can also be used for documentation, and a pocket tape recorder may be convenient to record your notes (or as a supplement to written notes).

ABOUT MAPS

Use maps to plan out sites and determine site access, either USGS 1:24000 quads, copies of orthophotos, or county flood maps (from the county assessor's office). A newer source of maps is available through TOPO computer software, which allows you to print out maps of specified geographical areas. You can then connect the software to a GPS unit and transfer your GPS points directly to the map. You can print out exactly which maps you need and use them in the field to make notes and do the hand-mapping.

GPS UNITS

Etrex Garmin GPS units are relatively inexpensive, easy to use, and have a great warranty. Although they are marketed as waterproof, one TAdN member recommended placing them in a ziplock bag if you plan on working in water. You can still operate all buttons through the bag. Always check your batteries before you go out.

Batteries last about 13 hours (of full-time use) but can drain while the unit is off. The Garmin will record many different kinds of coordinates, and we ask that you collect latitude and longitude in decimal degrees. Be sure to write down the coordinates and waypoints on the Arundo Observation Datasheet as you record them in the GPS unit. This is insurance just in case the unit malfunctions.

TAKING PHOTOS

- Digital photos are best.
- Identify Arundo clumps by GPS number.
- Take photos that are representative of each site's features. That way, when you return to perform monitoring or revegetation, you can find them easily.

FIELD WORK METADATA

- If using Garmin, check Non-differential GPS.
- Use a new Arundo Observation Datasheet for *each* site visit. By creating a template of your first form, you won't have to retype information about the site that remains the same from observation to observation.
- Keep site names specific so they will be meaningful to you a year later. (For example, "Downstream from Main St. Bridge" is more useful than "downstream from town." You can also use parcel numbers as part of site identification.
- You are no longer required to provide cross-section drawings of the channel. Replacing this is a section called Physical Properties on the Site Description Form.
- When providing length and width measurements of the site, consider the whole canopy of an infestation area, and not just the root mass area.

MONITORING

- For follow-up monitoring, use the same forms as for the original observation.
- Store all data in two places: in a file cabinet (hard copy) and on computer (electronic file).

THE ONLINE DATABASE

- Digitizes and consolidates all our data in one place.
- Allows us to do "big picture" analysis and mapping.
- Will be linked to an Arc IMS server.
- Don't use apostrophes when entering data into database.

**TAdN General Meeting
April 3, 2002 (afternoon)**

Presentation by Anna Sher
Saltcedar/Arundo/Yellow Starthistle Biological Control Research Project
<http://wric.ucdavis.edu/saltcedar/index.html>

How good of a candidate is Arundo for bio control? Response to Damage: cutting Arundo above ground 1X promotes growth, but cutting 2X results in some reduction to growth. (This brief presentation focused on orienting TAdN members to this project's website.)

Individual Reports and Project Updates

SHEILA DAAR

IPM programs, works with many county agencies, where ordinance passed mandating IPM approach. One client is working on Arundo.

KRISTIN CARTER, CHICO STATE

In Chico area, they have found that a few weeks makes all the difference in rate of eradication when spraying. Best results there have occurred when eradication is done in August. However, another TAdN member mentioned that when the infestation area is quite large, you may not have the luxury of timing the treatment so precisely. Kristin has a test plot to see which timing works best. Is also experimenting with results from Stalker vs. Roundup.

Deer Creek (VINA): Arundo eradication, selective spraying, 2.5 years into project, great results.

Brickyard Creek (Red Bluff): debris, garbage; selective spraying, one time last fall, pretty good results; mulching / chipping and no resprouts; 67 landowners.

Reeds / Redbank (Red Bluff): two streams close to each other.

Put together Arundo-tamarisk presentation, great photos of undercutting—useful for presentations to landowners. Purchasing a supermulcher (different than the Vermeer)—prevents Arundo from winging off and spreading.

SAN FRANCISQUITO CREEK

Cut with chainsaw in late October 2001, painted with 100% concentration glyphosate. CCC used as labor force with licensed nursery manager doing the application. City of Palo Alto trucked cuttings to greenwaste station. Arundo appears to be 100% eradicated but will know better during May inspection. Daubing with plastic paintbrushes on cut stumps, small area, within five minutes of cutting.

One clump which was cut and resprouts sprayed in 1998 was planted with several *Fraxinus latifolia* (Oregon ash) seedlings in sandy pockets of the root mass in 1999. They are up above head height now and the dead rootmass is slowly rotting but still maintains its integrity.

RICH MAROVICH

Mentioned he is using an applicator gun that meters an exact dose of herbicide.

SACRAMENTO

Wholly volunteer eradication effort in a primarily metropolitan area using volunteers from numerous organizations, including Americorps, CCC, Juvenile Hall, high schools that offer community service programs, boy and girl scouts, Sacramento State (semiannual service days).

They use a liability form. All hand cutting (no electrical equipment). Eradicating five invasives, including *Arundo*, through 12/04. Paid contractor will be setting up eradication work standards for crews. Won't get paid unless meet the standards.

Their work encompasses a broad view of stewardship as a community effort, so some volunteers work in preserves, as well as in other areas where invasives are located.

NAPA/CALISTOGA

Have secured permission from 35 property owners. Trying to get amendment to stream alteration agreement, since their agency's agreement does not currently cover areas with endangered species.