TNC’s Weeds Information Management System (WIMS):
A Tool for Invasive Weed Mapping & Management

Steve Buttrick, Barry Lavine, Nathan Rudd, Jason Karl & Mandy Tu*
TNC’s Oregon & Idaho Field Offices & Invasive Species Team
821 SE 14th Avenue, Portland, OR  97214   503-802-8100  imtu@tnc.org
http://tncweeds.ucdavis.edu/wims.html

Summary:
TNC’s Weeds Information Management System (WIMS) is a Microsoft
Access-based relational database application that is designed to assist
natural resource managers in managing their weed data. WIMS keeps track of
two types of data records: weed occurrences (GPS point locations); and
assessments (size and status of the weed infestation to facilitate monitoring
over time), and all management treatments applied to those weed
infestations.

TNC’s Weeds Information Management System (WIMS) is a Microsoft
Access-based relational database which sits on your
desktop/laptop computer, and works to keep track of all of your weed-
related data. WIMS is designed to record occurrences of weeds across
the landscape regardless of ownership and conservation status. It also
tracks assessments of those occurrences over time (size of infestation,
etc.), records all management activities for those infestations, as well as
keeps track of how much time is spent doing these management
activities.

Once data are entered into WIMS, data can be easily exchanged between
multiple users, exported in NAWMA (North American Weed Management
Association) standards, and written to shapefiles for mapping in any standard
GIS program. A variety of reports (including Pesticide Use Reports) can also
be easily generated. Additionally, WIMS can be used on a handheld computer
with GPS to facilitate data capture in the field. When using WIMS on a
handheld unit with an ArcPad interface, a site manager can use background
imagery and other GIS layers for mapping weeds and collecting associated
data, then upload that new data into the WIMS Access database with a few
mouse clicks!

How can WIMS help you & your weed work?
WIMS works to help you do the following:

- What weeds do I have for a given area?
- Where are they located spatially?
- Are weed patches changing (expanding, contracting) over time?
- What management actions did I take? When?
- How much do I spend (staff & volunteer time, money) managing a specific patch of weeds?
- Are resources being spent effectively & efficiently?

What is WIMS & what can WIMS do?
WIMS is a Microsoft Access relational database which sits on your
desktop/laptop computer, and works to keep track of all of your weed-
related data. WIMS is designed to record occurrences of weeds across
the landscape regardless of ownership and conservation status. It also
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activities.

Occurrences: Weed occurrences are recorded as points, and include
basic information such as weed species, location (latitude/longitude), the
management unit that this patch occurs in, etc. This initial occurrence can also
specify ownership of land, township, range, if there is a management plan for it, etc.

Assessments: Assessment records keep track of how the weed
occurrence patch is changing over time, with or without treatments.
Assessments can be chronicled as either linear polygons or as
polygons, and quantitative assessments of cover, density, biomass or
frequency can be recorded.

Treatments: WIMS works to keep track of all management activities
applied, including any manual and mechanical methods used, biological
control agents (microbes, fungi, insects), grazing animals, prescribed
fire, and chemical treatments. Information attached to each treatment
includes all of the above; what was done, effort (staff & volunteer time)
and resources (money) spent, area treated, percent of occurrence
treated, herbicide and adjacent information needed to generate
Pesticide Use Reports, weather conditions at time of application, etc.

What else can WIMS do?
WIMS can keep track of herbicide and
adjuvant use, and can even calculate total infested area
and resources (money) spent, area treated, percent of occurrence
- Where they are located spatially?
- Are weed patches changing (expanding, contracting) over time?
- What management actions did I take? When?
- How much do I spend (staff & volunteer time, money) managing a specific patch of weeds?
- Are resources being spent effectively & efficiently?

How is WIMS Organized?
The most basic unit within WIMS is the weed Occurrence. All
Assessments are tied to a specific Occurrence, and each
Occurrence can have n Assessments associated with it.
Treatments can encompass one to manyOccurrences.

How is WIMS Used – Data Flow & Exchange

Excel spreadsheets/NAWMA standards:
All data from the database
be exported and shared with partners as Excel spreadsheets.
Data can also be easily imported into Excel in the NAWMA format.
GIS Integration: All location data can be exported as either lat./long.
points or UTM units into true ESRI shapefiles, which may then be
imported into any standard GIS program.

Reports: Pesticide Use Reports, Weed Inventory by County or Site,
treatments by area, biological control agent used, hours worked by staff
and volunteers, etc.

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