

## Inventory, Survey, and Monitoring

Erik Lehnhoff

*\* indicates items that are included with workshop materials*

### Books and Journal Articles

#### SURVEYING & MONITORING

Abella SR, Spencer JE, Hoines J, Nazarchyk C. 2009. **Assessing an exotic plant surveying program in the Mojave Desert, Clark County, Nevada, USA.** Environmental Monitoring and Assessment 151: 221-230.

Bogich TL, Liebhold AM, Shea K. 2008. **To sample or eradicate? A cost minimization model for monitoring and managing an invasive species.** Journal of Applied Ecology 45:1134–1142.

Brooks ML, Klinger RC. 2009. **Practical considerations for early detection monitoring of plant invasions.** In: Management of Invasive Weeds. New York: Springer. p 9-33.

Doren RF, Volin JC, Richards JH. 2009. **Invasive exotic plant indicators for ecosystem restoration: an example from the Everglades restoration program.** Ecological Indicators 9:S29-S36.

Elzinga CL, Salzer DW, Willoughby JW. 1999. **Measuring and Monitoring Plant Populations.** BLM Technical Reference 1730-1. U.S. Department of the Interior, Arlington, VA. 496 p.

Foxcroft LC, Richardson DM, Rouget M, MacFadyen S. 2009. **Patterns of alien plant distribution at multiple spatial scales in a large national park: implications for ecology, management and monitoring.** Diversity and Distributions 15:367-378.

Hauser CE, McCarthy MA. 2009. **Streamlining 'search and destroy': cost-effective surveillance for invasive species management.** Ecology Letters 12:683-692.

Lehnhoff EA, Rew LJ, Maxwell BD, Taper ML. 2008. **Quantifying invasiveness: a case study of *Linaria vulgaris*.** Invasive Plant Science and Management 1:319-325.

\*Maxwell BD, Lehnhoff EA, Rew LJ. 2009. **The rationale for monitoring invasive plant populations as a crucial step for management.** Invasive Plant Science and Management V2: 1-9.

Narumalani A, Mishra DR, Wilson R, Reece P, Kohler A. 2009. **Detecting and mapping four invasive species along the floodplain of North Platte River, Nebraska.** Weed Technology 23(1): 99-107.

Regan TJ, McCarthy MA, Baxter PWJ, Panetta FD, Possingham HP. 2006. **Optimal eradication: when to stop looking for an invasive plant.** Ecology Letters 9:759–766.

Rew LJ, Maxwell BD, Aspinall RJ, Dougher FL. 2006. **Searching for a needle in a haystack: evaluating survey methods for sessile species.** *Biological Invasions* 8:523-539.

\*Rew LJ, Pokorny M, editors. 2006. **Inventory and Survey Methods for Non-indigenous Plant Species.** Montana State University Extension Services, Bozeman, MT. 80 p.

Rout TM, Salomon Y, McCarthy MA. 2009. **Using sighting records to declare eradication of an invasive species.** *Journal of Applied Ecology* 46:110–117.

## **SPECIES DISTRIBUTION MODELS**

Austin MP. 2002. **Spatial prediction of species distribution: an interface between ecological theory and statistical modelling.** *Ecological Modelling* 157:101-118.

Ibáñez I, Silander JA, Wilson AM, LaFleur N, Tanaka N, Tsuyama I. 2009. **Multivariate forecasts of potential distributions of invasive plant species.** *Ecological Applications* 19:359-375.

Johnson CJ, Gillingham MP. 2005. **An evaluation of mapped species distribution models used for conservation planning.** *Environmental Conservation* 32:117-128.

Stockwell RB, Peterson AT. 2002. **Effects of sample size on accuracy of species distribution models.** *Ecological Modelling* 148:1-13.

## **Climate Matching Species Distribution Models**

CLIMEX AND DYMEX – Free climate matching software (for purchase) for modeling species distributions. <http://www.climamodel.com/climex.htm>

GARP (Generic Algorithm for Rule-set Production) – Desktop GARP is a free software package for biodiversity and ecologic research that allows the user to predict and analyze wild species distributions. <http://www.nhm.ku.edu/desktopgarp/UsersManual.html>

MAXENT – Use this site to download software based on the maximum-entropy approach for species habitat modeling. This software takes as input a set of layers or environmental variables (such as elevation, precipitation, etc.), as well as a set of georeferenced occurrence locations, and produces a model of the range of the given species. <http://www.cs.princeton.edu/~schapire/maxent>