

**EXPERIMENTAL MANAGEMENT OF COMMON BUCKTHORN *RHAMNUS CATHARTICA* ON A DRY BLUFF SAVANNA RESTORATION SITE**

\*ELIZABETH EATON, Department of Biology, Winona State University, Winona, MN 55987

SHERRY BRUTT, Department of Biology, Winona State University, Winona, MN 55987

KELLIE PETERSON, Department of Biology, Winona State University, Winona, MN 55987

NEAL MUNDAHL, Department of Biology, Winona State University, Winona, MN 55987

*Abstract* Common buckthorn *Rhamnus cathartica* was cut and chemically treated in 2004 and 2005 during a dry bluff savanna restoration project in southeastern Minnesota, but continuing buckthorn seedling germination plagued efforts to reintroduce native shrubs, forbs, and grasses. We tested a variety of buckthorn management treatments (wood mulch, chemical application via spraying, pulling, cutting, fire) on small experimental plots to assess the efficacy of larger-scale management. Initial cutting and chemical treatment significantly reduced buckthorn seedling densities on restored (9.4 seedlings/m<sup>2</sup>) versus non-restored (13.4 seedlings/m<sup>2</sup>) plots after 1 year, but densities increased (to 17.3 seedlings/m<sup>2</sup>) on restored sections after two growing seasons. Plots where buckthorn seedlings were pulled or cut had lower seedling densities (<5.0 seedlings/m<sup>2</sup>) after 1 year than control plots (15.1 seedlings/m<sup>2</sup>). Mulching and fire had no suppressive effect on buckthorn seedling abundance, nor on the densities of grasses or forbs. However, plots where buckthorn seedlings were pulled had lower densities of grasses and forbs (16.5 plants/m<sup>2</sup>) than did plots where buckthorn seedlings were killed by burning or spraying (23.6 plants/m<sup>2</sup>). A combination of pulling, cutting, and spraying of buckthorn seedlings, in conjunction with regular prescribed burns (every 2 to 3 years), may be the optimal buckthorn management strategy for this savanna restoration site during the coming decade.