# HANDBOOK
# of
# Methods to Reclaim Wildlife Habitat
# on
# Surface Mines in Wyoming

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# INTRODUCTION

The Surface Mining Control and Reclamation Act (SMCRA) of 1977 (P.L. 95-87) was conceived to minimize adverse impacts of coal development, protect public resources, and restore the capability of the land. Fish and wildlife protection and habitat reclamation are important concerns covered by the Act. However, the science of habitat reclamation has failed to evolve as rapidly as other disciplines. Habitat restoration designs have been somewhat conjectural, supported by broad ecological concepts and limited data.

It is generally infeasible to duplicate or "reconstruct" premine habitat conditions. Massive alteration of soil structure and chemistry, surface and subsurface geology, drainage, and slope stability preclude this. Consequently, the resource manager must acknowledge several pragmatic limitations. In Wyoming, habitat reclamation plans have been designed to support diverse wildlife communities and to restore habitat functions essential for ecologically or socially important species. Managers accept that species which recolonize the surface following reclamation will differ somewhat in composition. Our primary objective is to recreate a stable ecosystem supporting a diverse floral and faunal composition similar though not identical to the premine condition.

Practices benefitting the widest array of species are most often recommended. Such practices include: restoring essential habitat components; reestablishing habitat functions with human-created features such as boulder piles; and substituting alternative features that encourage a diverse fauna. Ideally, reclaimed sources of food, cover, and water should be interspersed to benefit the greatest array of species possible, without adversely affecting important species that used the site before mining.

Areas of natural habitat that can be practicably maintained during site operations and reclamation should be identified at an early stage (Green and Salter 1987). These may include watercourses, wetlands, waterbodies, wildlife travel corridors, areas of dense evergreen or mixed forest cover, and stands of native shrubs. When undisturbed habitats can be maintained, habitats on adjacent disturbed areas should be designed to complement them.

Recommendations in this handbook reflect the current state of technology.