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## A successful approach to integrating wildlife management into grassland and rangeland conservation in the United States

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**Key words** : grassland ,ranching ,wildlife ,private lands

**Introduction** Since the 1930 s the Natural Resources Conservation Service (NRCS) has been working with farmers , ranchers , and other land managers to promote conservation of natural resources . NRCS is charged with developing and delivering conservation techniques to landowners for conserving all natural resources while still providing food , fiber and environmental amenities from the land . This paper deals with the relationship of grass and rangelands management to healthy fish and wildlife populations in order to broaden economic income and survival of grazing land operations . Ed Marston , in his chapter on " Why This Book Matters ," an epilogue in " Ranching West of the 100<sup>th</sup> Meridian : Culture , Ecology and Economics " ( 2002 ) says , " The options are laid out here : conservation easements , economic diversification , conservation biology , and the integration of ranching-as a food producer and protector of biological systems and open land-into society at large ." NRCS 's effort to develop ecological site descriptions ( ESD 's ) fits well into the decision making process on grazing lands by furnishing scientific information on ecological parameters needed for good decisions . Recognizing the opportunities and challenges in conserving fish and wildlife habitat , NRCS created the Wildlife Habitat Management Institute (WHMI) in 1997 as part of the NRCS National Science and Technology Consortium . It was renamed the Agricultural Wildlife Conservation Center (AWCC) in 2006 .

**Materials and methods** NRCS has over 150 conservation practices developed over its more than 70 year history by discipline specialists such as biologists , engineers , range conservationists , agronomists , and foresters . The AWCC works with scientists from various institutions to develop technology and tools that evaluate and improve agricultural programs and conservation practices that relate to rangeland use and wildlife needs . In the last 10 years over 115 projects have been funded and are ongoing or completed . More than 20 of these projects are concerned with fish and wildlife habitat relationship to rangelands , grasslands , haylands and anthropogenic perturbation on such lands . Project findings are developed into technical tools such as job sheets and technical notes used in management recommendations on aforementioned lands .

**Results** A review by Heard included impacts on grasslands ( Heard , 2005 ) . The Conservation Reserve Program (CRP) added 18M acres of grassland , mostly native , in the Midwest . These grasslands were beneficial to grassland birds and contributed to a 30% ( 10 . 5M ) increase in ducks in the northern Great Plains . Studies on haylands in Vermont showed that late-hayed fields served as high-quality reserves for late-nesting female Bobolinks that were displaced from previously hayed fields . For fields first cut in May , a 65-day interval between cuts could provide enough time for both species ( Bobolinks & Savannah Sparrows ) to successfully fledge young ( Perlut *et al .* , 2006 ) . Studies in Wyoming showed that trout biomass at sites managed for high-density , short duration grazing was more than twice as high as sites managed for season-long grazing ( Saunders & Fausch , 2007 ) . In an Arizona study , bats required 3 to 6 times the number of approaches to successfully drink from the surface of modified troughs ( wire or metal bracing ) and were 10 times more likely to be unsuccessful at obtaining a drink ( Tuttle *et al .* , 2006 ) . Work is continuing through a grant process to enhance understanding of grass/rangeland/wildlife relationships for better management of these resources .

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