Understanding the distribution and abundance of habitat and resources is an important issue in wildlife conservation and will advance understanding of wildlife habitat relationships (Morrison 2001). Jones et al. (2005) developed a vital habitat layer, describing the distribution of silver sagebrush (Artemisia cana Pursh) in southeastern Alberta, Canada, and identifying relationships between sagebrush characteristics and physiographic parameters. This paper adds greatly to our understanding of poorly-studied silver sagebrush communities and as Jones et al. (2005) point out, this is an important first step in developing management plans for sage-grouse (Centrocercus spp.) recovery. This product has recently been used to understand sage-grouse habitat relationships, linking habitat to the viability of the endangered Alberta greater sage-grouse (Centrocercus urophasianus) population (Aldridge 2005).

However, we have several concerns with the recommendations Jones et al. (2005) make regarding the management of sagebrush habitats for greater sage-grouse in Alberta. They indicate that “silver sagebrush is a quasi-riparian species, requiring mesic sites” (p. 404), and that lotic and overflow sites had “the best sagebrush characteristics (i.e., greater mean percentage of occupancy, denser, more uneven distribution and taller plants)” (p. 404). From this, they suggest that to recover greater sage-grouse populations in Alberta, conservation and management efforts should strive to maintain and enhance lotic and overflow sites. Contrary to these recommendations, we feel that any conservation efforts or dollars appropriated toward “enhancing” lotic and overflow sites would offer minimal benefits to sage-grouse recovery in Alberta. We discuss these problems below and highlight recent research that supports why management of lotic and overflow sites is not likely to have much influence on sage-grouse populations.

Current research indicates that poor productivity as a result of low nest success and low juvenile recruitment are the ultimate factors driving range-wide sage-grouse population declines (Schroeder et al. 1999; Johnson and Braun 1999; Aldridge 2001; Aldridge and Brigham 2002; Crawford et al. 2004; Aldridge 2005). As a result, management recommendations for most populations, including strategies outlined in the Canadian sage-grouse recovery strategy (Harris et al. 2001), indicate that conservation and management efforts should aim to enhance productivity (nest success and recruitment) if population declines are to be reversed (Johnson and Braun 1999; Schroeder et al. 1999; Connelly et al. 2000; Aldridge 2001; Aldridge et al. 2003). Thus, one would expect that by enhancing lotic and overflow sites, as suggested by Jones et al. (2005), nest success and chick survival and recruitment would be enhanced. Of course, this assumes that sage-grouse choose to place their nests and rear their young in sagebrush habitats associated with lotic and overflow sites.

Recent research, including some in silver sagebrush communities in southeastern Alberta (Aldridge and Brigham 2002; Watters et al. 2002; Aldridge and Brigham 2003; Aldridge 2005), indicates that sage-grouse select nest sites with moderate to high sagebrush cover and sagebrush density, with plants of intermediate to tall heights (Delong et al. 1995; Sveum et al. 1998b; Schroeder et al. 1999; Connelly et al. 2000). Although the thickest, most dense sagebrush may conceal nests from above and reduce potential avian predation (Connelly et al. 2000; Watters et al. 2002), the understory community (grass and forbs) may be compromised within dense shrub stands (Klebenow 1969; Aldridge and Brigham 2002), exposing nests at the ground level to terrestrial predators (Delong et al. 1995; Sveum et al. 1998b; Watters et al. 2002). If placed in the most dense shrub habitats, nests tend to fail (Delong et al. 1995; Schroeder et al. 1999; Connelly et al. 2000). Thus, sage-grouse select for tall dense sagebrush cover that still has suitable understory cover to provide both horizontal and vertical cover (Connelly et al. 2000; Watters et al. 2002; Crawford et al. 2004). Selection for more heterogeneous (patchy) sagebrush habitats occurs across life stages (Boyce 1981; Aldridge 2005), and fitness (nest success) is enhanced in patchy habitats (Aldridge 2005). While lotic and overflow sites contain dense sagebrush cover, these sites also have primarily continuous or uniform distribution of sagebrush plants (Jones et al. 2005), which may not be the best priority conservation habitats for sage-grouse.

Abundance and diversity of forbs in the understory, which are often lacking in dense thick sagebrush habitats, provides resources necessary to meet dietary limitations for chicks (Peterson 1970; Drut et al. 1994; Sveum et al. 1998a; Aldridge and Brigham 2002). As a result, lotic and overflow sites are not selected by hens for either nesting or rearing of chicks, and may be avoided, as has recently been shown in Alberta (Aldridge 2005). Hens move their broods from nest sites in upland habitats to lower mesic sites with a high forb component.