

## **Planting seedlings to regenerate critical shrub components in shrub-steppe; a viable tool for land managers**

Heidi Newsome

U. S. Fish and Wildlife Service, Burbank, WA, USA

The Hanford Reach National Monument was established in June 2000, in part to preserve one of the last large expanses of shrub-steppe desert once common in the Columbia River Basin. However, preservation of the area has not eliminated the threats to this ecosystem. Repeated wildfires and the pervasive presence of non-native plants have combined to impact the quality and functionality of the land as wildlife habitat. Efforts to assess the impacts from wildfires and to stabilize and rehabilitate burned areas have been conducted. Treatments to revegetate portions of the burned areas have included aerially seeding sagebrush and planting bareroot and container-grown (tubling) native shrub seedlings. Seeded sagebrush was evaluated for emergence and establishment. Planted shrubs were evaluated for survival based on stock type and treatment. Planting success was also reviewed in relation to treatment and environmental variables. Statistically no sagebrush was established from aerial seeding, but was established from ground broadcast seeding. Planted bareroot sagebrush without added mycorrhizae generally had the greatest survival, followed by tublings. Bareroot sagebrush with added mycorrhizae generally had the lowest survival. Amount and timing of seasonal precipitation also impacted sagebrush survival. Planting tube-grown or bare-root seedlings appears to be a viable method for restoring critical shrub components to shrub-steppe habitats.