

Under the Sage Grouse Umbrella

Will management for Sage Grouse protect other birds and animals in the sagebrush steppe?

As we struggle to better manage ecosystems, each with a few well-known species but thousands of little-known species, we need all the conceptual help we can get. One idea that may work well in the sagebrush steppe ecosystem is that of the “umbrella species.” Umbrella species may be used to

specify the size of area or type of habitat over which protection should occur.

Umbrella species generally have the following characteristics: they represent other species, their biology is well known, they are easily observed or sampled, they have large home ranges, are migratory, and are persistent.

We believe that the Greater Sage-Grouse, and presumably the Gunnison Sage-Grouse, function as umbrella species for a number of other species that live primarily, if not exclusively, in sagebrush habitats, such as Sage Thrasher, Sage Sparrow, Brewer's Sparrow, pygmy rabbit and sagebrush lizard. Theoretically, this umbrella effect would extend to many plants, such as the leagues of endemic *Astragalus*, to invertebrates, to cryptogamic crust, and even to the myriad beasts of the soil ecosystem.

Sage Grouse require expanses of sagebrush habitat with a diverse and substantial understory of native grasses and forbs.

Their requirements for lek sites, nesting, brood-rearing, and wintering habitat are reasonably well understood. Further, they need large blocks of sagebrush, as much as 2,500 square miles per population, in appropriate spatial mixes across the landscape. If we can provide these habitats well distributed over the historical range of the Sage Grouse, they and other species should fare well. The opportunity to test this is being promoted in Partners in Flight Bird Conservation Plans for Idaho, Oregon, and Washington. Additionally, the potential listing of Sage Grouse will likely precipitate studies that examine

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the relationship between Sage Grouse and other sagebrush animals.

A recent analysis indicated a high degree of overlap between historical source habitats of the Greater Sage-Grouse with that of three other species of sagebrush obligate birds: Sage Sparrow (99%), Brewer's Sparrow (94%) and Sage Thrasher (94%). Although Sage Grouse are not well monitored by the Breeding Bird Survey, there are a surprising number of significant correlations between abundance of Sage Grouse and other bird species in the western U.S., in particular those mentioned above and Vesper Sparrow.

Clearly, no one species can completely represent another in terms of habitat needs. So we also need to look at situations where successful management for Sage Grouse may not provide specific features that we know some of these other species require. For example, Sage Thrashers, Loggerhead Shrikes, and Gray Flycatchers require relatively tall sagebrush plants for nest sites.

Some landscapes that meet the habitat needs of Sage Grouse, may not provide enough tall sage for these three species. Much simpler to envision is how a local, endemic plant population might be left completely outside the Sage Grouse umbrella.

One can also picture land that provides excellent Sage Grouse winter habitat—to over simplify, sagebrush sticking out of the snow far enough to provide food and shelter—but which during other seasons may be nearly useless because there is no understory vegetation or the understory is dominated by cheatgrass. In this case, the umbrella will have protected nothing but winter habitat for Sage Grouse.

There apparently is no study to date where a strong case has been made that the umbrella species concept works in practice. We need research to test this hypothesis and the sagebrush steppe ecosystem—simpler than many—may be just the place to start. In the meantime, we take relatively little risk in assuming that if we manage habitat properly to conserve populations of Sage Grouse, we also will conserve populations of several other species. If we have to hold off land management decisions until we know more about the needs of longnose leopard lizards, Brandegee milkvetch, white-tailed antelope squirrels, Baking Powder Flat blues and 600+ other priority species of the sagebrush steppe, it will all be far too late.

—Terry Rich and Bob Altman

