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Large-Scale Study Shows Wildlife Corridors Benefit Fragmented Ecosystems

Over the past few decades, wildlife areas have become increasingly fragmented. In response, many conservationists have argued that, at the very least, developers should leave land that links separated habitats undisturbed in order to improve the health of the remaining ecosystems. But how much these habitat corridors truly help has been unclear because scientific studies of their effects have been carried out on small scales or have failed to control for confounding factors such as the type of land chosen for the corridor. Now the results of a large-scale study may help resolve the issue. According to a report published online this week by the *Proceedings of the National Academy of Sciences,* wildlife corridors enhance crucial plant and animal interactions and significantly increase plant pollination.

In their ambitious experiment, Joshua J. Tewksbury of the University of Florida and his colleagues created eight similar landscapes in the Savannah River Site in South Carolina, a federally protected research area. Each of the locations featured five patches of logged and burned ground cover surrounded by mature forest (*see image for an overhead view*). To test the interactions between patches, the team planted male holly bushes in the middle site and female holly bushes in the four surrounding sites, one of which was connected to the central patch. Holly is not naturally present in the forest, and the female plants cannot bear fruit unless they are pollinated. Compared with plants in unconnected patches, significantly more of those in the field linked to the central patch by a corridor bore fruit: the proportion of flowers that pr! oduced berries was 69 percent higher.

The researchers also tested the effect corridors had on seed dispersal by birds. After marking thousands of seeds in the central patch with a sticky powder visible under fluorescent light, the scientists analyzed bird droppings containing ingested seeds to track the animals' travels. According to the report, nearly 20 percent more fluorescent fecal samples were collected in connected patches than in isolated ones, indicating that the corridors facilitate the birds' movement. Says Tewksbury: "Our study suggests that these corridors do help in connecting populations, and theoretically, they should help sustain networks of populations existing in increasingly fragmented landscapes." --*Sarah Graham*