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Two researchers desperately seek stable 50-year-old corridors for study on conservation corridor efficacy

We seek your help in identifying 50 to 100 landscapes, anywhere in the world, that will allow us to test whether or not conservation corridors work, and to identify traits of successful corridors. In this article, we describe the criteria for a landscape to be included in our study. Please visit our website (http://www.docorridorswork.org/) for additional information or to suggest a site. If you know someone who might know of a site, please direct them to our website –and thank you in advance for your help.

Earth is becoming ever more fragmented by human activities, causing natural wildlife habitat to become increasingly isolated. 'Conservation corridors' are swaths of natural habitat (typically > 500 m long and > 100 m wide), preserved prior to human development of the landscape with the intended purpose of linking larger blocks of natural habitat after the surrounding landscape is converted for other uses. Conservation corridors are the most promising intervention available to land managers and conservationists to link isolated natural areas and promote demographic and genetic exchange at levels sufficient to sustain plant and animal populations. Moreover, they are the most commonly recommended conservation intervention to allow species to adapt to climate change (Heller and Zavaleta 2009). Governments and conservationists have planned many conservation corridors, and have invested millions of dollars on these plans (Wildlife Conservation Division 2010; http://www.scwildlands.org; http://www.corridordesign.org/arizona). We have been strong proponents of these corridors.

Unfortunately, we lack strong evidence that these interventions will work because most corridor research to date has studied 'structural linkages', which differ from conservation corridors in three ways. First, most research has evaluated the effectiveness of relatively short (< 100 m long) corridors (linkages), but conservation corridors are much larger. Second, most studies have defined a corridor as any narrow swath of land connecting two habitat patches, where the patches and corridor share a land cover that is different from that of the surrounding matrix (Haddad et al. 2003). Many times, the surrounding matrix is also natural vegetation, whereas conservation corridors are proposed to be embedded in heavily human impacted landscapes (Hilty et al. 2006). Finally, most linkage studies assess corridor efficacy by documenting focal species presence or movement through the linkage (Gilbert-Norton et al. 2010). Although these are necessary components of corridor success, they do not demonstrate that the corridor enhances demographic stability or gene flow, which are ultimately what corridors are designed to do (Crooks and Sanjayan 2006). Thus, most corridor research has been conducted in the wrong landscape context, at the wrong spatial scales, and using the wrong response variables to fully gauge the utility of conservation corridors.

An ideal study design to address this knowledge gap would be a Before/After Control/Impact (BACI) study design. However, such experiments would take nearly a century, and conservation planners need information right now (Soulé and Orians 2001). To address this knowledge gap in a more timely fashion we intend to study what we call '*de facto* corridors'. A *de facto* corridor is a landscape feature which structurally resembles a conservation corridor, but which may not have been explicitly designed with the intent to enhance connectivity. To identify landscapes worldwide with de facto corridors and necessary reference conditions, we need your help.

An ideal landscape for our study will be one that has a de facto corridor that is at least 500 m long and 100 m wide (small constrictions near road crossings or rivers are OK) linking two or more habitat patches embedded in a human-dominated matrix (e.g. urban, row crop agriculture, industrial forest). In addition to two patches linked by a corridor, the landscape should also

have at least one, and preferably both, of the following reference conditions: (1) completely isolated habitat patches of similar size and spaced approximately as far apart as the patches connected by the corridor, and (2) a relatively intact block of habitat large enough to allow us to collect samples at locations located as far apart as the corridor-connected patches. The landscape needs to have been in this configuration for at least 20-50 years – long enough for population demographies and gene flow to have adapted to landscape conformation (Wisdom et al. 2000, Slatkin 1993). Finally, although we are highly selective about what landscapes we will study, we will study any reptile, amphibian, mammal, flightless arthropod or sedentary bird that is found in the corridor but not in the human-dominated matrix, and we will study them on any continent.

To suggest a study site please visit our website (http://www.docorridorswork.org/), or email Andy at andrew.gregory@nau.edu. Our website provides more information about this project and occasional status updates. You can also follow us on Facebook at Do Corridors Work; to help publicize our study, please "Like" or "Friend" us on Facebook. Finally, anyone suggesting a study site meeting our criteria is eligible for a small finder's fee.

Paul Beier & Andrew J. Gregory

School of Forestry and Merriam-Powell Center for Environmental Research, Northern Arizona University, Flagstaff, USA. e-mail: paul.beier@nau.edu, andrew.gregory@nau.edu

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