

Development by Design: Blending Landscape Level Planning with the Mitigation Hierarchy

Joseph Kiesecker, Director of Science, The Nature Conservancy, Lander, Wyoming

Climate change will necessitate the shift from a fossil fuel energy base to one that utilizes renewable energy sources. These renewable energy sources (i.e. wind, solar) can have significant and often permanent footprints with serious impacts on biodiversity. Biodiversity offsets provide a mechanism for maintaining or enhancing environmental values in situations where development is sought despite detrimental environmental impacts. They seek to ensure that negative environmental impacts of development are balanced by environmental gains, with the overall aim of achieving a net neutral or positive outcome. However, a significant problem with this approach is that it implies all habitats can be offset. Offsets programs often ask developers if they have followed the mitigation hierarchy of seeking to avoid, minimize and restore biodiversity on site before considering an offset for the residual impacts. However, no quantitative guidelines exist to guide this decision making process. Landscape level planning, in particular ecoregional planning provides a framework to address this problem. Here I will discuss the utility of ecoregional assessments, focused on energy issues facing the western United States, as tools to address this issue.

Once the decision has been made to utilize offsets there can often be a tension to search for offset at a broad scale, looking for options that provide the greatest conservation benefit, or to keep them as close to the impact site as possible to ensure benefits accrue to the same area. While offsets have great potential as conservation tools, their establishment requires overcoming a number of conceptual and methodological challenges, in particular how is the location of suitable offset sites selected. To demonstrate this process I will discuss the design of offsets associated with impacts resulting from development on the Jonah Natural Gas Field in Wyoming.

Joe Kiesecker's past research has focused primarily on how perturbations resulting from climate change and land use changes can stress organisms, making them more susceptible to disease. Kiesecker's training was in ecology, with a Ph.D. from Oregon State University in 1997. He has held faculty appointments at Yale University, Penn State University and University of Wyoming. Kiesecker has published over 100 articles, on topics ranging from climate change to the effectiveness of conservation strategies.