

## Loss of Biodiversity

<http://www.timberpress.com/books/isbn.cfm/9780881928549>.

Policy-makers throughout the U.S. have finally acknowledged what scientists have been documenting for the past 25 years: our use of fossil fuels has altered the earth's climate in ways that are reducing the earth's ability to support our burgeoning population. The logical response has been to encourage renewable energy alternatives such as wind and solar power. Pennsylvania, for example, is considering subsidizing the construction of large-scale solar arrays throughout the state to reduce our use of fossil fuels for the generation of electricity. I fully support the idea in principle, but we must be very careful not to trade one problem for another by placing thousands of acres of solar panels on some of the few remaining habitats that support Pennsylvania's biodiversity.

Climate change is a terrible problem, but it is not our only problem. The loss of the biodiversity that keeps our ecosystems functioning - - the ecosystems that supply our air, clean our water, buffer our weather systems, create the topsoil in which we grow our food, recycle our garbage, and sequester our carbon - - is, like climate change, another environmental problem we have refused to acknowledge. As a scientist who studies these problems, I believe we are painting ourselves into another corner by destroying the ecosystems that support us as if we could do without them. We have paved 4 million miles of roads in the U.S., an area equal to five times the size of New Jersey. We have dedicated 40 million acres, over eight times the size of New Jersey, to ecologically sterile lawns. We have converted 54% of the U.S. to cities and suburbs and 41% to agriculture, leaving only 5% of the lower 48 in a truly natural state. We have fragmented our landscapes so thoroughly that most plant and animal populations are isolated within tiny habitats too small to sustain them for long.

We have taken nearly everything for our own use at the expense of our biodiversity. Pennsylvania has already lost 150 species, and 800 more are now too rare to perform their role in our ecosystems; that is, they are functionally extinct. Population models predict that, unless we restore connected habitats throughout the country, we will lose 95% of our biodiversity. Like the climate models that preceded them, these population models are being ignored by policy-makers because they mistakenly believe that biodiversity is optional. They are dangerously wrong. As we have done with carbon emissions, we can wait until the last minute to reverse the loss of ecosystem services, but succeeding at that stage becomes increasingly less likely with each new extinction. What we must do immediately is preserve what habitat patches we have not already paved over, and then start to restore the land we have taken in ways that will permit as many species as possible to share our spaces.

There is a misconception among policy-makers that old fields are marginal habitats not worthy of our protection. This misconception has helped target the 1000 miles of power line rights-of-way leased by PECO in southeastern PA as prime sites for acres of solar arrays. However, power line rights-of-way are superb habitats for grassland species, including many birds of conservation concern. Because they are continuous, they provide in many places the only remaining habitat corridors between more extensive natural areas. Rather than view them as wastelands to be further exploited, we should, at least, rigorously protect the ecological integrity of power line rights-of-way and, at best, enhance their wildlife value by restoring native plants to these important corridors. Surely our needed solar arrays can be located on some of the many thousands of properties that have already been paved or otherwise destroyed as wildlife habitat.

**Please ask your legislators to amend House Bill 1200 – 1204 accordingly, which as I understand it has been approved by the PA House and is currently before the PA Senate.**

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