

## PERSPECTIVES FROM THE FIELD

### Sustaining the Illinois Department of Natural Resources through Working Lands

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Restoring, protecting, and managing Illinois's natural infrastructure—our forests, prairies, wetlands, floodplains, streams, rivers, and shorelines—is the responsibility of the Illinois Department of Natural Resources (IDNR). However, over the last seven years, the IDNR has faced significant budget cuts, which severely impair the department's ability to meet its mandate. This was strikingly illustrated in 2008 by the temporary closures of our state parks. This year, to bridge a significant budget deficit, IDNR employees have been laid off and services cut. At the same time, the IDNR is considering an increase in user fees for state parks and license fees for hunting and fishing. However, while periodic fee increases may provide a budgetary stopgap, they are politically unpopular and, in the long-run, not commensurate with the resource needs of the state. Most appropriately, the department should consider a strategy that could generate financial resources using its principal asset: land. We would propose that the department undertake a careful evaluation of the ecosystem services that might be produced by its floodplains and wetlands and the market by which the credits for these services might be sold. The market would be analogous to the markets that operate for atmospheric sulfur or carbon.

For example, floodplain wetlands provide natural services to Illinois residents, such as storing floodwaters and removing excess nitrogen from rivers and streams. However, over 90% of Illinois' once-widespread wetlands have either been drained or se-

verely degraded. At the same time, Illinois faces numerous problems stemming from their loss, including excess sedimentation in the main channel, billions in flood damages, and excess nitrogen and phosphorus in our water from rural and urban runoff. Large-scale restoration and management of Illinois' wetlands to optimize their ecosystem service benefits could thus protect habitat from sediment, save billions in flood damages, and naturally improve water quality.

At the same time, by investing in Illinois' wetlands, the IDNR can generate a sustainable source of funds through the marketing of ecosystem service credits. Under a strategy proposed by the Wetlands Initiative, called *nutrient farming*, floodplain wetlands are restored and managed to optimize their nutrient-removal capacity, which is in turn funded through the market for nutrient credits. In Illinois, once the Illinois Environmental Protection Agency (IEPA) adopts nutrient standards for nitrogen and phosphorus, point-source dischargers like municipal wastewater treatment districts will need to invest to meet these new standards. If the IDNR invested in the restoration of wetlands as nutrient farms, either on existing public lands or in cooperation with private landowners, the state could generate additional revenue through the sale of measurable and verifiable nutrient credits to dischargers needing to meet future water quality standards.

Recent research conducted by the Wetlands Initiative suggests that water quality trading could lead to a \$38 million income from nutrient-farming credits in the Illinois River watershed alone (Scott et al., in preparation). Nutrient farming would be largely self-funded, as the operation and management costs would be generated from the sale of credits. Moreover, lands currently under conservation easement by the IDNR would continue to provide additional sources of revenue, including hunting and fishing-license fees. In addition to revenue, large-scale wetland restoration could provide other cost-savings to taxpayers in the state. For example, wetlands use solar energy to re-

move excess nitrogen from rivers and streams, thus dramatically lowering reliance on electrical energy to treat wastewater. Wetlands provide additional social benefits like improved wildlife habitat and biodiversity. Beyond the state's borders, Illinois is the number 1 contributor of nitrogen and phosphorus to the Gulf of Mexico. Marine algae feed on these nutrients, overpopulate, and, as they decompose, consume oxygen from the water, creating hypoxic dead zones that are uninhabitable to marine life. Investing in nutrient farms will sustainably and efficiently lower Illinois' impact to the Gulf.

Investing in our state's natural infrastructure will also stimulate green job creation and economic growth. Farmers of bottomlands (who are only marginally making a profit now) can restore wetlands, in partnership with the IDNR, to generate higher incomes while also spurring demand for construction crews, skilled land managers, scientists, and engineers. This resource management model could provide the much-needed financial resources for the IDNR, as well as position Illinois as a leader in innovative solutions to our nation's environmental and economic problems.

### Reference

Scott, B., C. Tallarico, J. Kostel, and R. Peck. In preparation. Nitrogen Farming in the Illinois River Watershed: An Environmental Economics Market. Research summary available at [http://www.wetlands-initiative.org/images/pdfs\\_pubs/NutrientFarmingILRiverTestMarketSummary.pdf](http://www.wetlands-initiative.org/images/pdfs_pubs/NutrientFarmingILRiverTestMarketSummary.pdf).

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