

Public Perception of Wetlands and Their Possible Impact on Property Values

An in-house study by Organizational Results in cooperation with the Design Division

MoDOT Summary Statement

The available literature review shows varied conclusions as to the benefits or drawback of wetland banks and their subsequent effect on land values. Although there is evidence that proximity to a wetland can decrease property values, a host of mitigating circumstances such as size and location of the wetland, number of wetland acres in the area and expectations of the property owners are also significant factors. A detailed survey of the actual landowners and the actual property value changes in relation to time and location of the constructed wetland appear to be the only conclusive way to obtain results regarding actual detrimental or positive effects of these banks on property values. Furthermore, the attraction of nuisance wildlife is also a somewhat difficult association. Many articles sighted the overall economic value, including the presence of wildlife, as a positive property value factor. Finally, there was no conclusive literature finding that odor was likely to be a problem.

Background

As indicated by the Environmental section of MoDOT: MoDOT is in the process of approving a new wetland mitigation bank in Blue Springs, MO. Under Section 404 of the Clean Water Act, any impacts to wetlands are required to be mitigated by the construction of a new wetland. Often time, MoDOT creates these mitigation wetlands near the impacted wetland, often adjacent to a road. These mitigation wetlands are also often small in size. The trend nationwide is to create wetland mitigation banks, rather than several small mitigation areas that will compensate for several of these smaller wetland impacts. Many state transportation agencies have been aggregating wetland mitigation banks over the past several years. Mitigation banks can be constructed by both public and private entities.

The proposed Blue Springs Lake wetland mitigation bank is located downstream of Blue Springs Lake. One of the landowners adjacent to the proposed bank site owns a golf course they have been planning to develop into a residential community. This landowner raised some questions about how the wetland will affect his property. These issues include:

1. Will construction of the wetland affect property values of adjacent landowners negatively?
2. Will the wildlife, birds (waterfowl), and insects that will be attracted to the wetland migrate onto the adjacent property and become a nuisance?
3. Will the wetland create any noticeable odors for a property downwind?



Background (cont'd.)

The following literature review responds to the questions posed by the landowner and aids the department in preparing correspondence for any future concerns raised by the public regarding wetland mitigation. In summary, the affect on property values is relevant to many issues including proximity to the wetland, total size of the wetland and the expectations of the land owners\ local real estate market. The attraction of wildlife is also a somewhat difficult association. This stems from the fact that 'nuisance' can be a relative term. Many articles sighted the overall economic value, including the presence of wildlife, as a positive property value factor. There is also evidence that because these banks are typically created within range of previously existing wetlands that the subsequent attraction is equal to a natural habitat. Finally, there did not appear to be an overwhelming body of literature regarding odors emitted from created wetland banks. The literature did note the natural filtering properties of the wetlands had more of an odor neutralizing effect rather than an odor producing effect.

Literature Review

“Evidence on the Amenity Value of Wetland in a Rural Setting”

Okmyung Bin

The results of their property value study in Carteret County, NC revealed that property values fluctuated when the following relationships were present: 1) a higher wetland percentage within a quarter mile of a property decreased values, 2) closer proximity to the nearest wetland and 3) larger size of the nearest wetland. These results contrast with previous hedonic studies that use data from urban areas, which found mostly positive associations between wetlands and property values. He also states that, “ Though wetlands can provide valuable ecosystem services to society as a whole, it is not clear that wetlands pride positive net benefits to land owners.”

“The Effects of Wetland and Other Factors on Rural Land Values”

John E. Reynolds, PhD. And Alex Regaldo

From the abstract, this article states, “The effect of wetlands and other physical and locational characteristics on the prices of rural land can be estimated. Location, parcel size, capital improvements, proportion of land in intensive uses, and land area in wetlands explained more than 80% of the variation in property sale prices. Although total wetland area has a significant negative impact on rural land prices when wetlands are divided into different systems and classes, the effect on rural land values varies considerably.”

This article attempts to specify the type of wetland and its effects on property values and not just lump sum the presence of wetlands with impacted land value. An example of this is scrub-shrub wetlands (thicket type with less than 20 feet high woody vegetation). These typically have a less negative effect on land value simply because most people do not recognize them as wetlands. In aggregate, wetlands tend to have a negative overall impact on property values but when segregated they vary from minor positive effects to significant negative impacts.

This article further states there are several implications of owning wetlands that effect the perception of them in the public's eyes.

- A landowner cannot alter or disturb the wetlands. This implies government jurisdiction and interference in their private decision-making.
- Wet land use is associated with extensive cost and bureaucracy such as forms, attorneys, parcel restrictions etc..
- In the absence of wetland restrictions, landowners could alter the wetlands and generate higher returns to their lands, therefore these lands have diminished return capacity per acre.

Literature Review (cont'd.)

- In the land market, wetlands are usually not recognized as a benefit since their advantages accrue to the public and cannot be captured by individual landowners.
- As urban areas expand and the need for land increases, this does eventually increase the value of the wetland.
- Some individuals might be willing to pay a higher price for the wetlands due to their esthetic qualities.

“Valuing Urban Wetlands: A Property Price Approach”

Brent L. Mahan, Stephen Polasky and Reidh

Conclusions of this study indicate that living closer to ‘open water area’ wetlands increased house value, while living closer to ‘open water linear’, ‘emergent vegetation linear’ and ‘scrub shrub area’ decreased property value. Distances from the property to the latter four wetland types had no statistically significant effect on sale price.

“The Trust for Public Land: Conserving Land for the People”

This article focused on the increasing property values of homes near parks and green ways.

A notable quote from the article helps illustrate the main point, “Protecting open space can stabilize or increase nearby or adjacent property values-avoiding the need for increased property tax rates.” In rural areas where most land is open space is perceived to be at low risk for development both market and enhancement value will be negligible. However, in urban or urbanizing areas where open space is scarce enhancement value will be high. For advocates of open space protection, enhancement value is important because it offsets the negative effects of removing the market value of the open space itself (which is usually tax exempt or taxed at a low rate) from the local property base.

“Understanding Natural Amenities: Impacts on Population and Employment in Missouri”

David J. Peters and Zachary Johnson
Research and Planning, Missouri Department of Economic Development

According to this report, the market economy no longer values natural resources in terms of potential extraction of goods but in terms of natural beauty. This has led to an increase in recreation and retirement sectors of the economy.

The report had three main objectives, 1) How Missouri counties rate nationally in terms of natural amenities, 2) How natural amenities drive population change within Missouri and 3) How natural amenities affect employment change within Missouri.

According to this natural amenities scale used by the researchers, within the central region of the United States, portions of Arkansas, Missouri and Oklahoma have amenities higher than the national average. The highest of Missouri’s counties being Perry, Stone, Wayne and Ste. Genevieve. Some of Missouri’s highest rankings come from the varied topography and water availability.

The article further emphasizes there is a strong positive correlation between natural amenities and increased population change. This means that counties with growing populations possessed natural amenities that were higher than average. As a result of regression analysis for population change in Missouri, the model indicates that natural amenities are the strongest predictor of population change.

Employment change and natural amenities are also positively correlated; though less so than population change. It appears that counties with more attractive natural amenities grew only moderately faster in employment than lower amenity counties. Further it appears that counties economically dependent on farming had slower

Literature Review (cont'd.)

employment growth than other counties. In summary it appears that both natural amenities and farm dependency influenced employment change between 1990 and 1999.

“Much To Do About Wetlands: The Management of Wetlands- A Primer”

Jean MacKay

“As a game played in a natural setting, golf presents far more than a recreational outlet for golfers. Golf courses are diverse landscapes that can be managed to showcase regional plant communities and wildlife habitats – including some of our most valuable: wetlands”

This article highlights the responsibilities, benefits and downfalls of managing a golf course in relation to natural habitats, specifically wetlands. This is an interesting expose on the responsibility of those that rely on these habitats for income and are equally reliant on their preservation.

“Wetlands Clean Water and May Control Neighborhood Flood Problems”

E.A. Kohler, V.L. Poole, Z.J. Reicher and R.F. Turco

The article contends that constructed golf course wetlands have potential to accept, store and filter runoff from within the course and neighboring areas. The study showed a successful reduction of 11 out of 17 measured chemicals specifically measured during post storm drainage, which therefore created less contamination in the watershed.

“Natural Values: Linking the Environment to the Economy”

Ducks Unlimited Canada: Canada’s Conservation Company

This article and subsequent resources by Ducks Unlimited focus on the improvements of

environmental and economic understanding of natural systems.

This article states that wetlands are continually lost due to the fact that society does not understand their true environmental and economic value. Wetlands can filter (help neutralize contaminants) and recharge the freshwater supply, store greenhouse gases, help prevent flooding and provide habitat for numerous species.

“Penn State Researchers Use Constructed Wetlands to Reduce Odors from Pig Manure Wastewater”

John Wall, Pennsylvania State University

To reduce the odors associated with the byproducts of hog farms, researchers at Pen State found that constructed wetlands work well to clear the air.

Findings from experimentally constructed wetlands produced stagnant earthy, non-offensive smells and aided in neutralizing the odor produced by manure.

“The Economic Value of Wetlands and Open Spaces”

William Daugherty.

This article discusses the importance of wetlands within the state of California. Importantly, the article states that it is the condition of the asset that is adjacent to a property verses the actual asset itself. The author gives the example of a highly used, night lit sports complex type of park that can adversely impact adjacent property values the same way a stagnant, debris filled waterway will also decrease the value of adjacent properties.

Positive factors of open space property, including wetlands, are public services cost reduction, corporate retention and attraction, commercial returns, public mental and physical health and tourism.

Literature Review (cont'd.)

“New Lakeshore Wetlands”
Steve Meador

This article debates the right of property owners to destroy vegetation to the waters edge which is public property because it detracts from the economic vitality and property value of their own land. This has become an increasing problem in Saginaw Bay Michigan because of the increase in wetlands.

“Economic Impacts of Protecting Rivers, Trails, and Greenway Corridors: Real Property Values”
National Park Service, USA

This article emphasizes those amenities of a green way corridor such as preserving open spaces, recreational opportunities and attractive view. It concludes that corridors are prime attractions for potential homebuyers and that 78% of all home buyers in a 1995 study indicated that natural, open space was either, “essential or “very important”.

“Putting an Economic Value on Wetlands- Concepts, Methods and Considerations”
Minister of Public Works and Government Services, Canada

This article puts into perspective the various direct and indirect benefits of wetlands including recreation, water filtration, flood control and biodiversity. There is also considerable discussion regarding the failure of the market to consider the economic impact of natural ecosystems and how to actually give accurate value to these impacts.
