

ECONOMIC BENEFITS OF CLEAN WATER

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Dirty water is ok for moving barges, stormwater, irrigation and floods, each of which has economic benefits. But the other water benefits require clean water. And clean water is effectively inseparable from natural, forested or carefully maintained riverbanks.

Clean water is a quality of life amenity. It attracts people, which means economic activity. We automatically assume clean water means attractive river banks. The two together bring :

residents

tourists

young, gifted graduates as employes, with kayaks on their cars

people who fish

people who swim

who water ski, sail

who canoe

who hike and picnic

who use motorboats

who supply goods and services to all the above for their use and pleasure

who hold meetings and conferences and conventions because of the surroundings, interest and excitement of the waterway

In other words, clean waterways with their lake shores or river banks provide everything the Chamber of Commerce wants, everything the Department of Tourism and Travel wants, everything the Department of Development wants – including jobs!

So it is simply common sense to observe that if the water isn't clean, the community is deprived of many or most of the uses listed. Therefore the economic benefits cannot be fully exploited. In general that's the way things are in 40 to 50% of the nation's waterways.

For example, if the Ohio River is thought to be polluted, some boat owners may launch in a Tennessee Lake. They may buy from a dealer on the Ohio but play elsewhere. At Cincinnati's Paddlefest recently, we cancelled a cross-the-Ohio swim part of a Triathlon because the E-Coli count was too high. Someone I know was swimming the Ohio regularly to prepare for a Triathlon in Louisville. He got really sick. You can see how this contributes to a bad image for the river.

This is a wonderful example of river resource economics: HOW MUCH WOULD IT COST TO CHANGE THE IMAGE OF THE OHIO RIVER?

And then, if we changed the image to “clean river”, WHAT WOULD HAPPEN TO THE RIVER-RELATED ECONOMY?

To change the image, we would have to clean up the sewage systems now polluting the Ohio after rainstorms. Spend many billions! It would take up to 30 years, maybe even longer, for us ratepayers to be able, reasonably, to pay for that.

But after it became clean(er), what would the new image do? In my not so humble opinion... I predict it would lead to the redevelopment of both sides of the Ohio River and become THE big long-term development of the future. Based on a small but credible study with lots of experience behind it.

Our ongoing Ohio River Resource Economics study would have to find benefits greatly exceeding costs to enable public officials to issue bonds to begin work immediately. Benefits would come from the greatly increased river area property value (1962 miles of corridor). Far bigger tax base. Far more tax income, perhaps using tax-income financing. This new tax income would pay for the bond interest and ultimate redemption.

The image of a clean river. What more could the Department of Tourism and Travel ask? T and T have been the number 2 business in Ohio, after agriculture. What more could any Chamber of Commerce ask? Any banker, developer or real estate agent instinctively knows. They don't even need a study! What a painless way to pay for hugely important, but out of sight, infrastructure that affects our health as well. What better use of river resource economics?

In the case of your river, what is the first question?

It's WHAT IF? What if we reforested the banks, put in a scenic trail, stopped the pollution, took out the dam, opened up access points. What would that all cost, in dollars, and how long would it last (all projects have life expectancies).

Then what benefits would ensue, in dollars per year, and for how many years?

Would the cost exceed the benefits? Or vice versa?

Benefit calculations are usually done by resource economists who use carefully drafted surveys via questionnaires, of residents, motorists, licensed anglers, licensed boaters and focus groups, as well, of course, as existing studies elsewhere that could shed light on the issue or be adjusted to the instant case. There are numerous quality studies of greenways, bikeways, trails in the literature.

The tools economists use:

Contingent Valuation – means what are you willing to pay – say to live near a river.

Travel Cost Method – how far would you be willing to travel to fish, kayak, ski?

Hedonic Valuation – which, in our work is, say, how much does it add to the value of your house if you live near an attractive river or trail along a river or within view of a river (very important!). Such added values can be sorted out and be imputed from property appraisals at the county auditor's office.

Benefits Transfer – if benefits result from a cleanup over there, perhaps we can expect them to result over here, taking into account any regional differences as in wealth, demography, population density etc.

A little history of river resource economics. In the 1950s Michigan's DNR studied property values along several of its nicer rivers. They found they were several times higher than the state average.

In 1985 Professor Karl Schurr of Bowling Green State University, a member of our group, studied two branches of the Portage River near Toledo. He looked at the property values along the natural, unchannelized branch. Then at the property values along the adjacent, channelized, denuded branch. Nineteen houses along each, no farms, no trailers. Real estate values were 3.3 times higher along the natural stream than its channelized twin.

In 1975 the New River in North Carolina was selected to be a National Wild and Scenic River. Property values at the time, along the river, were about \$350 an acre. After designation as a national river, the real estate industry hyped the natural beauty of the river as ideal for vacation and retirement homes, and in a few years the land along the river went to \$10,000 for a riverfront lot – perhaps 1/3 of an acre – or 90 times as much as it had been. The river hadn't changed. Its image had.

The Little Miami River, a national and state designated Scenic River, has had a lot of beneficial attention and now has 100% of its waters meeting national water quality standards! That's amazing! Two years ago there were said to be 350,000 people using the bike trail (greenway) along the river. Previous to that the Ohio-Kentucky-Indiana Regional Council of Governments had done a study of the 27 mile stretch of trail through Warren County. They concluded that the average user spent \$13 per visit, plus another \$7 on equipment, wherever it was bought. Total \$20 per visitor. Times 150,000 to 175,000 visitors per year, for a minimum of \$3,000,000 per year economic benefit. The trail cost \$2 million about 1979, including the abandoned rail right-of-way, for 42 miles at that time. With a life expectancy of perhaps 50 years, being conservative, the annual cost including maintenance and replacement of 27 miles of trail would come to less than \$100,000 per year, giving something like a 30 to 1 B/C ratio.

No, a trail is not water, but the river led to a rail line because it was level floodplain, and the water quality was somewhat responsible for attracting trail users and certainly for attracting canoeists and kayakers. About 100,000 people rent canoes and kayaks on this river every year (there are several liveries) and that income would be at least an extra \$1,000,000 a year.

And if we use the 350,000 trail users at \$20 per visitor per visit, the whole trail is bringing in \$7 million plus \$1 million for a total of \$8 million every year. What a success!

Put another way, from studies like this, net economic contributions, experienced and projected, from corridor improvements on 27 miles of each river (fortuitously, that's how it came out):

The Muskingum: \$ 8200 per river mile per year from river area zoning, septic system and bikeway

The Great Miami: \$ 117,000 pmpy from access points, bikeway and minus the effects of gravel mining

The Little Miami: \$ 106,000 pmpy, bikeway alone

Mill Creek, in Cincinnati: this is a very complicated picture, where benefits and costs are taken from areas not all along the stream but of course influenced by the stream. Some generalities:
Over \$100 million increase in property values.
Over \$3.5 million annual increase in recreational use.
An estimated increase in property tax revenues of \$5.5 million.

Hocking River Valley: an improvement in water quality would increase regional economy by \$3.3 to \$5.3 million a year

The Clean Water Act. The Consent Decrees granted under the CWA, using the Citizen Suit Provision, have finally forced some communities to pay for neglected, dilapidated and undersized sewer systems that are out of sight and only tell us something's wrong when we smell something or get basements flooded with sewage or discover receiving waters with high E.Coli counts and maybe some sick people. If a tree branch falls an electric line, the utility fixes it pretty quick. If a pothole opens in an expressway it gets fixed quick. You experience these things. But if a sewer cracks or leaks or separates at its joints or crumbles after an earth movement, it's out of sight and the public can't see it. It has thus been very convenient to neglect this very important infrastructure, even for 100 years in places.

We have had concern that the CWA would be weakened under the present administration and we would have to wait many more years before our waters would be cleaned up. This concern strengthened the economic reasons to improve water quality as truly a more insistent, visible and immediate reason than the environmental ones

The CWA's purpose is to "restore and maintain the chemical, physical and biological integrity of the nation's waters". The Act speaks of "fish, shellfish and recreation". We would add: *public health: safety from disease bacteria and chemical toxins. And expanded tax base, enhanced public image, higher quality of life and a stronger regional economy.*

Economic Valuation of River Systems. A book, Edward Elgar, Northampton MA, 2007, edited by Fred Hitzhusen detailing the work done by OSU since 1997, mostly sponsored by Rivers Unlimited. Covers Ohio studies on the Sandusky, Maumee, Hocking, Muskingum, Mahoning, Great Miami and Cuyahoga.

This is a technical, teaching book. OSU economists have established this body of learning. We see economics as the ultimate logic to restore rivers and water quality as well as protect them from a degraded, developed fate.

One can see that recovered and new uses of rivers will increase tax base and new economic activity. It's just common sense!

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