



The Economic Profile of the  
Lower Mississippi River:

An Update

Final Report | February 2014



prepared for:

Lower Mississippi River Conservation Committee

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## EXECUTIVE SUMMARY

The purpose of this study is to develop a profile of the regional economic activity dependent upon the Lower Mississippi River (LMR), the portion of the Mississippi flowing from southern Illinois to the Gulf of Mexico. This report is an updated analysis of a corresponding work produced in 2004.<sup>1</sup> The profile provides an overview of economic activity in the LMR region today, and discusses recent trends. Recent years have been particularly turbulent for the LMR region, with notable events including the major hurricanes Katrina and Rita in 2005, the economic crises in 2008 and 2009, the *Deepwater Horizon* oil spill in the Gulf of Mexico in 2010, and extreme flooding in 2011 followed by an extreme drought in 2012.

The ultimate objective of this report is to enhance understanding among government agencies, legislative bodies, private organizations, and individual citizens of the relative significance of key economic sectors in the LMR region, providing an information source for future river management decisions.

### LMR CORRIDOR

The report focuses on economic activities in the LMR region, which encompasses more than 71,000 square miles and includes 113 counties in seven states: Illinois, Missouri, Kentucky, Tennessee, Arkansas, Mississippi and Louisiana. For simplicity, the study area is referred to in the report as the ‘LMR Corridor’ or ‘LMR Region.’ Louisiana has the most counties (41), the largest percent of state land area included (59 percent), and the largest population (3.4 million) in the LMR Corridor.

### RIVER-RELATED ECONOMIC SECTORS

The study evaluates the economic significance of ten key “river-related” economic sectors. These sectors use the river ecosystem in a number of ways. Many of the sectors directly utilize the waters of the river for purposes that include water supply, cooling, transport, harvest, recreation, and/or waste disposal. In addition, the natural beauty of the river and its surrounding habitats support other economic sectors, including tourism and recreation.

Considered together, the river-related LMR sectors produced \$151.7 billion in annual revenues in 2011, and employed just over 585,000 people, as shown in Exhibit ES-1. The total revenues are dominated by the manufacturing sector, which generated over 70 percent of total revenues (\$106 billion) in river-related sectors within the LMR Corridor in 2011. Tourism contributed 10 percent of river-related values, followed by agriculture, energy production, and mineral resources extraction.

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<sup>1</sup> IEc, 2004, *Economic Profile of the Lower Mississippi River*.

## EXHIBIT ES-1. REVENUES (\$MILLIONS) AND EMPLOYMENT IN THE LMR CORRIDOR, 2011

SECTOR	REVENUES*		EMPLOYMENT	
	\$ MILLION	PERCENTAGE	# PEOPLE	PERCENTAGE
Harvest of Natural Resources	559	0.4%	13,726	2.3%
Outdoor Recreation	1,335**	0.9%	54,476	9.3%
Tourism	15,501	10.2%	190,395	32.5%
Water Supply	385	0.3%	601	0.1%
Agriculture and Aquaculture	8,737	5.8%	56,102	9.6%
Mineral Resources	7,816	5.2%	41,443	7.1%
Energy	6,758	4.5%	2,730	0.5%
Navigation	4,219	2.8%	18,764	3.2%
Manufacturing	106,394	70.1%	207,186	35.4%
Ecosystem Services (non-market)	Unquantified		Unquantified	
<b>Total LMR:</b>	<b>151,703***</b>	<b>100%</b>	<b>585,423***</b>	<b>100%</b>
Notes:				
* Economic values generated by Tourism and Outdoor Recreation sectors are measured as expenditures.				
** The Outdoor Industry Association (OIA) produced a report that estimated the economic contribution of outdoor recreation, including estimates for motorized and non-motorized activities at the state level. The OIA survey suggests that trip-related expenditures for motorized and non-motorized visits would have been \$7.5 billion in the LMR Corridor. However, it is unclear whether these numbers may double count some of the estimates provided in the well-recognized FWS survey used in this report. Thus, we have conservatively not included OIA estimates in our measure of the total recreational expenditures in the LMR. To the extent that these estimates do not overlap, our estimates of recreational values in the LMR Corridor could be understated.				
*** Totals may not sum due to rounding.				
Sources: IEC analysis. For detailed source information, please refer to individual chapters.				

Employment is more equally distributed across the ten sectors. Manufacturing employs the largest number of workers, but its contribution of 35 percent is more moderate (relative to its contribution to revenues) and is just slightly higher than employment in the tourism sector. Tourism is a major contributor to the labor market in the LMR, providing 33 percent of the employment in all ten sectors. The third largest source for the LMR's total river-related employment is agriculture, with the outdoor recreation sector contributing almost as many workers.

Geographically, the highest total revenues and employment occurred in Louisiana's portion of the LMR Corridor, which includes contributions from manufacturing as well as the tourism sector in New Orleans and Baton Rouge, Louisiana. Other areas reporting high revenues include Arkansas LMR Corridor areas, which have a strong agricultural sector and manufacturing concentrated in Little Rock, Arkansas. A robust source of

revenues for the LMR Corridor comes also from Tennessee's LMR counties, which are driven by tourism and manufacturing in Memphis, Tennessee.

Key findings for individual economic sectors include the following:

- **Commercial Harvest of Natural Resources:** Annually, LMR natural resources provide over 375 million cubic feet of timber products, almost 20 million pounds of freshwater fish, over 1 billion pounds of seafood, and between 28,000 and 35,000 alligator skins. This diverse sector produces in the LMR corridor annual revenues of \$559 million and employs over 13,000 people.
- **Outdoor Recreation:** The LMR corridor offers a variety of recreational opportunities for anglers, hunters, and outdoor enthusiasts interested in wildlife watching. These opportunities attract 38 million trips that generate \$1.3 billion in expenditures and provide jobs for over 54,000 people.
- **Tourism:** The tourist sector in the LMR corridor generates \$15.5 billion in annual expenditures, making it the second largest sector after manufacturing in the region. Tourism is estimated to provide employment to 190,000 workers. This sector has survived numerous natural and manmade disasters during the last decade. For example, the city of New Orleans lost \$2 billion in expenditures during the first 12 months after Hurricane Katrina. The sector shows long term resilience and is expected to make meaningful future economic contributions to the LMR region.
- **Water Supply:** Overall, over 11.8 billion gallons of surface water are withdrawn each day by water users in the LMR corridor, which represents approximately four percent of all U.S. fresh surface-water withdrawals. The water supply and sewerage sector in the LMR corridor employs roughly 600 people and generates an estimated \$385 million in annual revenue.
- **Agriculture:** The agricultural sector is the third largest contributor to the regional economy for the LMR corridor. It is dominated by crop production, followed by livestock, and aquaculture. LMR farmland covers 22.5 million acres, with a value of \$51 billion. The land produces \$7.2 billion in crop revenues annually, which represents 5 percent of U.S. production.<sup>2</sup> The agricultural sector as a whole in the LMR Corridor generates \$8.7 billion, and provides employment to at least 56,000 workers. During the flood of 2011, the agricultural sector lost an estimated \$660 million in revenue.
- **Mineral Resources:** This sector encompasses both fuel (natural gas and oil) and non-fuel minerals: salt, clay, crushed stone, and sand and gravel. The LMR counties that produce crude oil and natural gas are located within the states of Louisiana and Mississippi. The total annual LMR production in 2004 was 398 billion cubic feet of natural gas (representing approximately 1.6 percent of total

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<sup>2</sup> Total U.S. annual crop revenues in 2007 were almost \$136 billion. (Sources: Census Bureau,

U.S. production)<sup>3</sup> and almost 56 million barrels of oil (representing approximately 2.8 percent of total U.S. production).<sup>4</sup> Overall, the mineral sector generates \$7.8 billion in annual revenues and provides employment to 41,443 workers receiving \$3.6 billion in wages.

- **Energy Production:** The LMR energy sector includes 108 power plants that generated more than 100 million megawatt-hours in 2012 for the LMR corridor. Coal, natural gas, and nuclear energy generation are the dominant energy sources. The LMR corridor also has several non-renewable power plants supported by bio and hydro power. The sector produces \$6.8 billion in annual revenues and provides employment to at least 2,700 workers.
- **Commercial Navigation:** The commercial navigation sector in the LMR corridor is inseparable from the function and maintenance of the river. Over 470 million short tons of cargo are shipped through the LMR annually. The sector generates \$4.2 billion in revenue and employs 18,764 workers annually.
- **Manufacturing:** The LMR corridor's manufacturing sector encompasses operations ranging from food processing to chemical manufacturing. In 2007, manufacturers generated \$106.4 billion in revenue (2011 dollars) and employed roughly 207,000 people, with most of the activity concentrated in Louisiana, Tennessee, and Arkansas.
- **Natural Resource Services Not Reflected in the Commercial Economy:** The ecosystems in the LMR Corridor provide numerous biological and ecological services that are not captured by the previously described nine economic sectors. For example, coastal marshes of Louisiana serve as nurseries for numerous marine organisms, including many commercially important seafood species, such as shrimp. The coastal marshes and barrier islands also provide a physical barrier against strong winds and hurricanes. Both coastal as well as inland wetlands provide flood control. The water of the LMR itself dilutes and treats waste. The LMR supports a rich diversity of fish and invertebrate fauna that includes several threatened and endangered species, such as the pallid sturgeon and several rare species of mussels. LMR wetlands are also home to unique flora, including species such as cattails, swamp rose, spider lilies, and cypress trees. The LMR Corridor provides habitat for numerous terrestrial endangered or threatened species, including the Louisiana black bear, piping plover, and green sea turtle.

There are 11 million acres of forested land in the LMR corridor that store over 400 million tons of carbon above and below ground in living trees. Over 50,000

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"Statistical Abstract of the United States. Section 17: Agriculture" 2007. Accessed at: <https://www.census.gov/prod/2011pubs/12statab/agricult.pdf>

<sup>3</sup> National production of natural gas in 2011 was 24,036,352 MMcf. (Sources: EIA, "Natural Gas Production Data" Accessed at: <http://www.eia.gov/dnav/ng/hist/n9050us2A.htm>)

<sup>4</sup> National production of crude oil in 2004 was 1.9 billion barrels. (Sources: EIA, "Crude Oil Production." Accessed at: [http://www.eia.gov/dnav/pet/pet\\_crd\\_crpdn\\_adc\\_mbb1\\_m.htm](http://www.eia.gov/dnav/pet/pet_crd_crpdn_adc_mbb1_m.htm))

acres of land in the Mississippi Delta are currently under a privately managed carbon reforestation program that offers private landowners revenues from carbon credits equal to \$600 to \$1,200 per acre in 15 years. In the future, there may be potential to obtain additional income from implementation of conservation strategies in agricultural production to reduce hypoxia in the Gulf of Mexico. The extra income from sale of nitrogen and phosphorus credits may range from \$12.00 to \$33.00 per acre. In 2012 and 2013, the Lower Mississippi River Conservation Committee (LMRCC), the Mississippi River Trust and the Natural Resources Conservation Service signed up 10,000 acres of batture, an area of active floodplain, to be placed under easement and reforested to provide the unique services of contiguous forested wetlands. The Wetlands Reserve Program in the LMR Corridor (not including the Kentucky-LMR counties) has successfully enrolled 873,000 acres in a similar program.

EXHIBIT ES-2. REVENUES (\$MILLIONS) FROM ALL RIVER-RELATED SECTORS IN THE LMR CORRIDOR, 2011

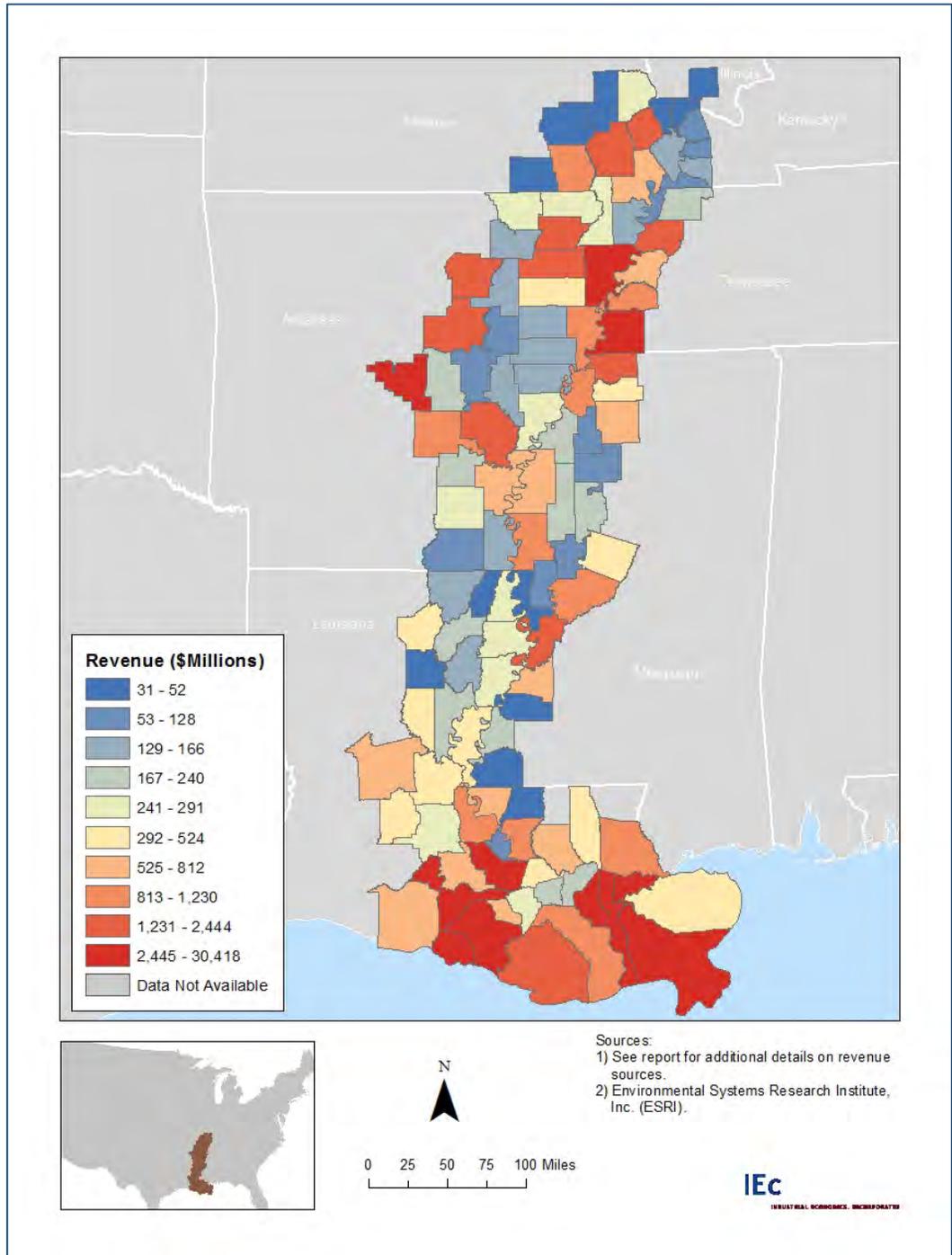


EXHIBIT ES-3. EMPLOYMENT IN ALL RIVER-RELATED SECTORS IN THE LMR CORRIDOR, 2011

