Economic Impact of Michigan’s State Parks: A Case Study of Rifle River Recreation Area

Report # CS-2007-02

LAND POLICY INSTITUTE
Shaping the Future from the Ground Up
Economic Impact of Michigan’s State Parks
A Case Study of Ogemaw County

Report #2
Series on Economic Impact and Valuation Studies
in Natural Resources and Conservation

Hannah Professor Research Program
Land Policy Institute

Project Team
Soji Adelaja
Yohannes G. Hailu
Rachel Kuntzsch
Mary Beth Lake
Max Fulkerson
Charles McKeown
Laila Racevskis
Nigel Griswold

LPI Report # CS-2007-02

In partnership with:
Heart of the Lakes Center for Land Conservation Policy

November 29, 2007
Acknowledgements

The Hannah Professor Research Program extends its gratitude to our partners in this initiative: Heart of the Lakes Center for Land Conservation Policy and members of the Conservation Advisory Committee. We would also like to thank those individuals and agencies that provided valuable information in the research process. Finally, this work would not have been possible without funding support from the Americana Foundation, the W.K. Kellogg Foundation, and LPI’s People and Land Initiative.
About the Project Team Members

Soji Adelaja

Dr. Soji Adelaja is the John A. Hannah Distinguished Professor in Land Policy, Director of the Land Policy Institute at Michigan State University (MSU) and Co-Director of the People and Land (PAL) Initiative. He holds joint faculty appointments as Professor in the Departments of Agricultural Economics; Geography; and Community, Agriculture, Recreation, and Resource Studies. Dr. Adelaja holds a Ph.D. in Economics from West Virginia University. Prior to joining the faculty at MSU, he served as the Executive Dean of Agriculture and Natural Resources, the Dean of Cook College, the Executive Director of the New Jersey Agricultural Experiment Station (NJAES), and Director of Rutgers Cooperative Extension at Rutgers University. He was a faculty member at Rutgers University where he served in various capacities, including Chair of Agricultural, Food and Resource Economics; Dean of Research for Cook College and Director of Research for the NJAES; and Founder and Director of several centers, including the Food Policy Institute, the Food Innovation Center, and the Ecopolicy Center. Recognitions include the Rutgers Presidential Award for Distinguished Public Service, the New Jersey Legislature Citation for Outstanding Scholarship and the New Jersey Governor’s Recognition for Contributions to the Garden State. Dr. Adelaja’s interest span a variety of areas including agricultural policy at the urban fringe, land use policy, industrial economic development and public/private partnerships.

Yohannes G. Hailu

Dr. Yohannes G. Hailu is Visiting Assistant Professor and Associate Director of the Hannah Professor Research Program at the Land Policy Institute of Michigan State University. He is responsible for programmatic leadership of projects and initiatives of the Hannah Research Program. He holds a Ph.D. in Natural Resource Economics from West Virginia University. Dr. Hailu’s prior research encompasses regional growth modeling, the role of natural amenities in economic growth, linkages between growth and land use change, economic growth and inequality, renewable energy policy and land policy analysis.
Rachel Kuntzsch

Rachel Kuntzsch is Executive Director of Heart of the Lakes Center for Land Conservation Policy, a nonprofit organization established in 2004 to serve as the voice for Michigan’s land conservancies and to educate policymakers on key conservation issues. Rachel manages Heart of the Lakes through her consulting firm, Kuntzsch Business Services, Inc. (KBS), which also specializes in alternative and renewable energy. Through KBS, Rachel manages and serves as Executive Director to the Greater Lansing Area Clean Cities Coalition, a nonprofit membership organization which promotes the usage of clean vehicle technologies and fuels in mid-Michigan. In 2002, Rachel was a part of the team that launched NextEnergy, a nonprofit organization working to accelerate the alternative energy industry in Michigan. She remains a consultant to NextEnergy, facilitating various consortia and developing funding opportunities for alternative and renewable energy projects. Rachel also served as a business development manager for the Michigan Economic Development Corporation and has worked in the private sector in sales and marketing capacities. Rachel earned a Bachelor of Science from Michigan State University.

Mary Beth Lake

Mary Beth Lake is the Associate Director for Operations at the Land Policy Institute at MSU. Ms. Lake has a Master of Science degree in Applied Economics from the University of Minnesota. In the past, she has served in the AmeriCorps program at the Iowa Department of Natural Resources and worked as an environmental educator for the Michigan Groundwater Stewardship Program. Ms. Lake has conducted research and published work on a variety of topics, including the implicit value of natural areas and farmland. She currently coordinates the People and Land Initiative of LPI, funded by the W.K. Kellogg Foundation; the Michigan legislative information series; and assists in several research and outreach programs through PAL.

Chuck McKeown

Chuck McKeown is Manager of Informatics with the Hannah Professor Research Program at the Land Policy Institute. He also coordinates the activities of Picture Michigan Tomorrow, a multi-disciplinary imagery and land use forecast modeling and outreach initiative. He holds a Master of Science degree in Entomology from Michigan State University, specializing in Ecology. He is also a veteran of the U.S. Marine Corps.
Max Fulkerson

As a data and informatics analyst, Max Fulkerson uses Geographic Information Systems (GIS), Remote Sensing, and spatial analysis to support land use research. His current work includes a project in partnership with the National Agricultural Statistics Service to generate an annual GIS layer of crop specific land cover in Michigan and to educate stakeholders about the potential applications of spatial data in agricultural research and practices. His professional experience includes work in the public, private, and academic sectors. Mr. Fulkerson holds a Master of Arts in Geography from the University of Missouri-Columbia.

Laila Racevskis

Dr. Laila Racevskis is Assistant Professor of Food and Resource Economics and Director of the Florida Natural Resources Leadership Institute at the University of Florida. She previously served as visiting Assistant Professor at the Land Policy Institute, where she assisted in the management of the environmental valuation project with Heart of the Lakes Center for Land Conservation Policy. Her expertise is in non-market valuation of ecosystem services, land use economics and policy, and human dimensions of natural resource management. She holds a Ph.D. in Agricultural Economics from Michigan State University.

Nigel Griswold

Nigel Griswold is a research associate in the Department of Agricultural and Resource Economics at Colorado State University, focusing on the valuation and economic impacts of natural resources and land use, tourism and recreation. He holds an M.S. degree in Agricultural Economics from Michigan State University. He previously worked with the Land Policy Institute. In 2005, Mr. Griswold interned with the Robert F. Kennedy, Jr.’s Riverkeeper organization in Garrison, NY where he worked on the estimation of tipping fees for the disposal of toxic wastes collected from the Hudson River Superfund site.
# Economic Impact of Michigan’s State Parks
## A Case Study of Ogemaw County

## Table of Contents

1.0 Introduction  ........................................................................................................1

2.0 Economic Impact of Green Infrastructure in Michigan  ................................2

3.0 Profile of Ogemaw County and Rifle River Recreation Area Rifle River Recreational Area ........................................................................................................3

4.0 Methodology and Data .........................................................................................5

5.0 Economic Impact of Rifle River Recreational Area ........................................7

6.0 Conclusion .............................................................................................................8

References ..................................................................................................................11
Economic Impact of Michigan’s State Parks
A Case Study of Ogemaw County

List of Tables

Table 3.1 Economic Profile of Ogemaw County----------------------------------------------4
Table 5.1 Direct and Indirect (Induced) Economic Impacts of Rifle River Recreational Area Visitor Spending -----------------------------------------------6

List of Figures

Figure 3.1 Rifle River Recreational Area-----------------------------------------------3
Economic Impact of Michigan’s State Parks
A Case Study of Ogemaw County

Executive Summary

Natural and environmental resources, or “green assets,” provide a number of benefits to society ranging from recreational opportunities, natural scenery (aesthetic value), air/water recharge capacity, environmental quality and quality of life benefits. These facilitate local economic growth and development. Despite strong evidence of links between green infrastructure and quality of life, the connection to economic activity and prosperity is not often well understood. Many questions still arise with regard to the value and role of green assets and the ability of local communities to leverage their green infrastructure for economic prosperity. Understanding the link between green assets and economic activity will be crucial to local communities and regional organizations in defining sustainable future sources of economic growth and prosperity.

In increasingly competitive global, regional and local economies, stiff economic competition has encouraged many to pursue new economic strategies for local comparative advantage. Green infrastructure development and the attraction of knowledge-based workers are among the emerging sources of new comparative advantage and competitiveness in the “New Economy.” Understanding the crucial links between green infrastructure and its contribution to the local economy is a first step in understanding the value of local green assets and in leveraging them to bring economic growth.

This report is the second in a series published by the Hannah Professor Research Program of the Land Policy Institute (LPI) on Economic Impact and Valuation Studies in Natural Resources and Conservation. This particular report focuses on the economic impact of Rifle River Recreational Area (RRRA) in Ogemaw County, Michigan, as additional evidence of the economic importance of green assets. RRRA is a wilderness area located in the AuSable State Forest. It provides recreational opportunities to an average of 38,900 day-time users and generates 15,273 “camper group nights” per year. The camp is operated with an annual payroll of $263,243 and maintenance expenses of $71,591.

Economic impact can be defined as the total income, jobs, tax, and value-added Impacts to local and regional economies as a result of changes in investment or spending patterns in the local, or regional, economic area. Economic impact studies can provide relevant information of interest to local communities, regional institutions, and development planners. The total annual economic impact of RRRA is estimated at

1 Value-added can be literally defined as “the difference between the overall cost of a manufacturing or marketing process and the final value of the goods.” Source: http://www.allwords.com/word-added%20value.html. Value added in general can mean the additional economic value (in terms of additional after cost value) created as a result of a given economic activity.
Moreover, we estimate that RRRA creates 37 jobs and an additional $933,003 in total value-added impacts per year. Considering the fact that the park is only 4,450 acres in size, the estimated annual economic impacts are quite significant. This result provides additional evidence that local green assets could be sources of significant local comparative advantage, and if properly leveraged, could potentially stimulate local economic growth.

As Michigan and many regional organizations and local governments strive to restructure the economy and facilitate prosperity, the role of green assets and other local assets could be significant. As much as keeping the balance between green infrastructure utilization and conservation is important, so is the ability to sustainably generate economic value from local green assets. This report aims to bridge the information gap on the green infrastructure and economic impact linkages and encourages broader discussion on identifying key local resources to help Michigan grow in a sustainable and smart way.
1.0 Introduction

As components of “green infrastructure,” natural and environmental resources provide a wide array of amenity services benefits to society (Kline and Wichelns 1996, Platinga and Miller 2001, Irwin and Bockstael 2001). They also determine population and income growth (Deller et al. 2001, Duffy-Deno 1998) and generate direct and indirect economic impacts through visitors spending in the local economy (Stynes, et al. 2000, Nelson and Stynes 2003). Despite the existence of substantial evidence on the quality of life importance of green infrastructure, the connections between natural and environmental resources and economic activity is often not well understood. Many questions arise in this regard from different corners:

(1) does the protection of natural resources translate into economic opportunities?
(2) how can natural resources be in the mix of strategies to bring about local economic prosperity?
(3) what does local green infrastructure add to quality of life?
(4) in the face of economic challenges in Michigan, how can we leverage our local green assets to foster sustainable economic growth?

The answers to these questions are critical and relevant in defining future economic growth strategies for Michigan communities.

Green infrastructure assets, such as parks, wetlands, sand dunes, forests, water bodies, trails, and other natural areas have been shown to have substantial economic value. With changing global and regional economic structure and with increasing specialization in service-based industries, the economic vitality and role of green assets in creating new economic opportunities has become relevant. To many, the question has increasingly become how can one leverage local green resources, assets and services to gain a comparative advantage? Identifying crucial local green assets and investigating their contribution to the local economy is a key first step in addressing this question.

This report is one in a series published by the Hannah Professor Research Program of the Land Policy Institute on Economic Impact and Valuation Studies in Natural Resources and Conservation. The main goal of this particular study is to provide some evidence on the economic impact of green infrastructure, particularly a state park, on county economic activity. The study aims to estimate the economic impact of Rifle River Recreational Area (RRRA) on the Ogemaw County economy.

Economic impact is broadly defined as the total income, job creation, tax revenue, and value-added impacts to local or regional economies as a result of changes in investment or spending in the same local or regional economy. Economic impact analysis, therefore, focuses on “the assessment of the change in the overall economic activity as a result of some change in one or several economic activities” (IMPLAN Pro
In the context of the RRRA economic impact is defined as the total job creation, income, and value added impacts of annual RRRA visitors’ spending in Ogemaw County.

To the extent that green infrastructure affects tax collections, income and job creation, and value-added growth, it is relevant to local citizens, local governments, and policy makers. Information on such interactions can support sound policies to leverage green assets for economic opportunities.

This study can add value in many ways:
(1) it can inform on links between green assets and economic activities in a measurable way;
(2) it can potentially inform decision makers about the level of contribution of green infrastructure to local economies; and
(3) it can highlight the importance of bringing green assets into the mix of strategies to gain local comparative advantage as the overall national and regional economies become more competitive and strategic.

**2.0 Economic Impact of Green infrastructure in Michigan**

Previous studies that focused on measuring the economic impact of natural resources in Michigan provide evidence on linkages between green infrastructure and economic outcomes. Michigan is well-endowed with natural and environmental resources and has significant natural resource based economic activities. Michigan has 3,288 miles of Great Lakes shoreline, 38,000 square miles of Great Lakes water, 11,000 inland lakes, 36,000 miles of rivers and streams, 75,000 acres of sand dunes, and 5.5 million acres of wetlands (Nelson and Stynes 2003). Michigan also has a total of 19.3 million acres in forested lands of which 38 percent are publicly owned (Hansen and Brand 2006).

Michigan ranks 3rd in the nation in licensed hunters (over 750,000), with a $1.3 billion annual contribution to the economy. The state also ranks 8th in number of anglers, with a $2 billion economic contribution. The state ranks 1st in the number of registered boats and snowmobiles, with an estimated $2 billion economic contribution (MDNR 2007).

In 2000, Michigan had 89 million “travel party nights” with $8.8 billion in tourism spending, creating 209,000 jobs, $4.3 billion in personal incomes as wage and salaries, and $6.9 billion in value-added. This represented 2% of the state economy and 4% of total jobs (Stynes 2000). In 2000-2001, skiers and snowboarders spent $146 million on trips to ski areas through 2.2 million skier visits, generating $63.7 million in ski revenue, $41.3 million in visit expenditures, and $41.4 million in tourism related spending. This created $54 million in direct personal income and 3,900 jobs (Stynes and Sun 2001).

At the local level, the economic impact of green infrastructure based activities are also substantial. For instance, in 2002, total tourism spending in Washtenaw County was
The estimated economic impact of this spending was $111 million in wages and about 5,700 jobs (Stynes 2003). Similarly, Pictured Rocks National Lakeshore hosted 421,000 recreational visits in 2001, spending $14.8 million. The total estimated economic impact of visitor spending was $12 million in sales, $4.6 million in personal income, $7.4 million in direct value-added, and 426 jobs (Stynes and Sun 2003).

These studies have investigated the economic value of the services from different types of green assets. The estimated income, employment and value added impacts are quite substantial and clearly inform on the link in Michigan between green infrastructure and economic impacts. At the local or regional level, these studies provide information on the value of green infrastructure in providing local economic opportunities. This becomes particularly relevant in communities and regions in transition from “old” to “new” economies.

3.0 Profile of Ogemaw County and Rifle River Recreation Area (RRRA)

The Rifle River Recreation Area is a wilderness area located within the AuSable State Forest. It provides recreational opportunities to visitors. Before 1945, RRRA was a private hunting and fishing retreat owned by the late H.M. Jewett, a pioneer auto manufacturer (MDNR 2007). In 1945 it was purchased by the Department of Conservation and was renamed Rifle River Area. In 1963, the Parks Division acquired the area now named Rifle River Recreation Area (MDNR 2007).

RRRA is located in the northeastern part of the lower peninsula of Michigan in Ogemaw County. It has an approximate area of 4,450 acres. In terms of visitors, it accommodates 15,273 camper party group nights (camper nights), for an estimated 72,000 campers per year. The camp also accommodates an estimated 10,824 user group party days (day visits) per year. There are an estimated 38,900 day users of the camp. The annual employee payroll for the camp is estimated at $263,243 and the annual maintenance expenses are $71,591. Figure 3.1 shows the location of RRRA in Michigan.

Ogemaw County has a population of 21,645 and a population density per square mile of 38.36 (2000 Census of Population). The median household income of the County, based on 2000 Census estimates, is $30,474. This falls short of the national average for the same period, estimated at $41,994. The economic profile of the County by sectoral activity is summarized in Table 3.1.

In terms of the major sources of employment opportunities in the County by industrial sector, manufacturing, retail trade, and healthcare and social assistance industries provide the largest share of employment opportunities for 1,040, 1,287, and 1,101 workers, respectively. The accommodation and food services industry, which is closely related with tourism activities, also provides a significant employment opportunity in the county, employing 684 workers. Table 3.1 summarizes additional information by sector for jobs, payroll and trade, by sector.
Figure 3.1 Rifle River Recreation Area.

Source: Prepared by the Hannah Professor Research Program of the Land Policy Institute.
Table 3.1. Economic Profile of Ogemaw County.

<table>
<thead>
<tr>
<th>Industry</th>
<th>Number of Establishments</th>
<th>Number of Employees</th>
<th>Annual Payroll ($1,000)</th>
<th>Shipments/Sales/Receipts</th>
</tr>
</thead>
<tbody>
<tr>
<td>Manufacturing</td>
<td>34</td>
<td>1,040</td>
<td>$31,182</td>
<td>$101,540</td>
</tr>
<tr>
<td>Wholesale trade</td>
<td>14</td>
<td>224</td>
<td>$7,193</td>
<td>$74,957</td>
</tr>
<tr>
<td>Retail trade</td>
<td>135</td>
<td>1,287</td>
<td>$23,702</td>
<td>$316,402</td>
</tr>
<tr>
<td>Information</td>
<td>7</td>
<td>73</td>
<td>$2,176</td>
<td>Not-reported</td>
</tr>
<tr>
<td>Real estate and rental and leasing</td>
<td>25</td>
<td>91</td>
<td>$1,891</td>
<td>$9,797</td>
</tr>
<tr>
<td>Professional, scientific and technical services</td>
<td>29</td>
<td>119</td>
<td>$2,973</td>
<td>$7,108</td>
</tr>
<tr>
<td>Administrative support, waste management and remediation service</td>
<td>16</td>
<td>72</td>
<td>$2,306</td>
<td>$4,415</td>
</tr>
<tr>
<td>Health care and social assistance</td>
<td>62</td>
<td>1,101</td>
<td>$28,678</td>
<td>$71,919</td>
</tr>
<tr>
<td>Arts, entertainment and recreation</td>
<td>12</td>
<td>51</td>
<td>$975</td>
<td>$3,482</td>
</tr>
<tr>
<td>Accommodation and food services</td>
<td>62</td>
<td>684</td>
<td>$7,331</td>
<td>$30,188</td>
</tr>
<tr>
<td>Other services (except public administration)</td>
<td>42</td>
<td>156</td>
<td>$2,707</td>
<td>$9,777</td>
</tr>
</tbody>
</table>


4.0 Methodology and Data

To estimate the economic impact of RRRA on the economy of Ogemaw County, park visitor spending data was collected and the economic impact of such spending on the local economy was estimated. The regional economic impacts of RRRA is determined using Stynes (1998) estimated visitor spending profiles created using the 1996/1997 Michigan State Park (MSP) visitor survey, 2005/2006 RRRA user and operations budget data, as well as income spending profiles and a regional economic model of Ogemaw County estimated using IMPLAN Pro 2.0 software. Stynes (1998) calculated spending profiles for several user types throughout the four major regions of Michigan (Upper Peninsula, Northern Lower Peninsula (NLP), and the eastern/western Lower Peninsula). These spending profiles were estimated on a party day basis (all spending for a user group per day) and then multiplied by the number of RRRA camper party nights and day use party visits to estimate total visitor spending. Total visitor spending is then applied in an IMPLAN generated input-output model of the Ogemaw County economy to estimate secondary effects and estimate the amount of income and
jobs associated with visitor spending. Because the Stynes (1998) study used dollar values from 1997, all visitor spending profiles were adjusted to reflect 2006 values using the Bureau of Labor and Statistics Consumer Price Index calculator.2

Local purchases for RRRA operations as well as employees spending of their incomes locally must be accounted for in order to derive the total regional economic impacts of RRRA. The amount spent within RRRA by park visitors is subtracted from their spending profiles, as these dollars are the same dollars spent by employees via income or on RRRA operations. To separate visitor impacts from park operations impacts, all visitors staying overnight in the park (campers) have their lodging expense set to zero. RRRA employee income is then categorized using annual income spending profiles derived from IMPLAN, and all those on the payroll are assumed to spend their income in the local area. The impact of employees spending their income locally and the impact of locally spent dollars on park maintenance are then calculated as separate events using IMPLAN. Visitor impacts and operations impacts are then aggregated to arrive at the total regional economic impacts of RRRA on Ogemaw County, Michigan.

The reported number of ‘camps’ (15,273 nights) at the park are used to estimate camping activity. A camp is a single group occupying a single site for a single night. Day use figures (~38,966) are divided by an average day use party size (3.6), derived by the Michigan Department of Natural Resources and the RRRA park supervisor. Reported park operations expenditures (payroll and maintenance expenses) are assumed to provide an accurate estimate of the annual cost to sustain the RRRA.

The spending profiles for park users require some assumptions. State park visitors are divided in to three groups: (1) state park campers; (2) day users on day trips; and (3) day users on overnight trips. Day users reported spending for their entire group for the day and campers reported spending for everybody at the campsite. A detailed explanation of the assumptions made by Stynes (1998) is available in that study, including how the following were managed: zeros and missing data, outliers, campers in the day use sample, and double counting.

Data on number of camper nights, number of day users, number of park employees, wages and hours worked, and maintenance expenses are based on information provided by park staff. Spending profile data, i.e., average spending per visitor, is based on the Stynes (1998) study. Regional economic multipliers are calculated in IMPLAN Professional Version 2 economic impact analysis software.

The impact analysis is thus estimated based on three user groups (campers, users on day trips, and users on overnight trips) and data on six spending categories, i.e., vehicle-related, groceries, restaurants, sporting goods, lodging, and other expenses. Using this information, the total economic impact of visitor spending on local income, jobs and value-added is estimated.

The estimated economic impacts are reported at three levels: (1) direct economic impacts (i.e., the total economic activity facilitation effect of RRRA visitors’ spending in industries directly related to visitors, such as lounge and hotels, restaurants, sport goods stores, groceries, gas stations, etc) and indirect economic impacts (i.e., the secondary impacts in “backward” and “forward” linked industries as a result of RRRA visitors spending impact in primary sectors, (2) total (direct and indirect) job creation impacts, and (4) total value added impacts (value in goods and services added across industries as a result of spending by RRRA visitors after accounting for costs).

5.0 Estimated Economic Impacts of RRRA in Ogemaw County

In general, there are an estimated 15,273 camper party group nights (camper nights), 72,000 campers, 10,824 day visits, and 38,900 day users annually. The annual employee payroll is $263,243 and maintenance expenses are $71,591. The total economic impacts associated with these visitors and their spending in Ogemaw County is estimated and results are provided in Table 5.1.

Based on the RRRA visitors spending data, the total annual estimated direct economic impact of visitor spending on Ogemaw County economy is $1,368,280, and the induced (indirect) economic impacts are estimated at $419,815. The total direct and indirect economic impacts are, therefore, $1,788,095. For a park the size of 4,450 acres, the annual economic impacts are significant.

Table 5.1. Direct and Indirect (Induced) Economic Impacts of Rifle River Recreational Area Visitor Spending.

<table>
<thead>
<tr>
<th>Type of Economic Impact</th>
<th>Economic Impact Estimates</th>
</tr>
</thead>
<tbody>
<tr>
<td>Total economic impacts</td>
<td>$1,788,095</td>
</tr>
<tr>
<td>Direct economic impacts</td>
<td>$1,368,280</td>
</tr>
<tr>
<td>Indirect (induced) economic impacts</td>
<td>$419,815</td>
</tr>
<tr>
<td>Total jobs created</td>
<td>37 jobs</td>
</tr>
<tr>
<td>Direct jobs creation</td>
<td>32 jobs</td>
</tr>
<tr>
<td>Indirect (induced) job creation</td>
<td>5 jobs</td>
</tr>
<tr>
<td>Total value-added impacts</td>
<td>$933,003</td>
</tr>
<tr>
<td>Direct value-added impacts</td>
<td>$684,574</td>
</tr>
<tr>
<td>Indirect (induced) value-added impacts</td>
<td>$248,429</td>
</tr>
</tbody>
</table>

The estimation of economic impacts from visitor spending involves direct and indirect economic impacts. Economic activities are inter-related. As a result, there are “backward” and “forward” linkages in the economy where changes in one economic activity will often have a chain effect on related activities. Suppliers of parts and services to mainline economic activity are “backward linked” to the main activity, and economic activities that are dependent on the mainline activity as inputs are “forward linked.” In the case of RRRA, its impact on the economy of Ogemaw County is determined similarly following the backward and forward linkages of the park services with other activities in the rest of the County economy.
In terms of job creation impact, the total employment impact of the park is estimated at 32 in direct job creation and 5 in indirect (induced) job creation impacts. The induced job impacts are the jobs created in other sectors that are related to RRRA park activities due to visitor spending in RRRA related activities. The total job impacts associated with the park, direct and indirect, is therefore 37.

In terms of value-added impacts, the direct value added impact of RRRA on Ogemaw County is estimated at $684,574 and the indirect (or induced) value-added impacts in other sectors is estimated at $248,429. The total value-added impact is, therefore, estimated at $933,003.

6.0 Conclusion and Implications

This study is one of the series of studies published by the Hannah Professor Research Program of the Land Policy Institute on Economic Impact and Valuation Studies in Natural Resources and Conservation. This particular report is focused on understanding the economic impacts of green infrastructure, specifically the Rifle River Recreational Area (RRRA). As Michigan experiences economic growth challenges, key questions arise as to whether green infrastructure can provide an economic growth opportunity at the local level. This case study of the Rifle River Recreational Area (RRRA) in Ogemaw County can contribute to increased understanding of the economic contributions of green infrastructure.

Using visitor spending data on RRRA related visits and activities and utilizing Stynes (1998) visitor spending profile, the annual economic impact of RRRA visitor spending on the economy of Ogemaw County was estimated using IMPLAN. Results suggest significant economic impact. The total estimated direct and indirect economic impacts of RRRA visitor spending is $1,788,095. Given the park size of 4,450 acres, the economic impact is significant. RRRA visitor spending is also estimated to induce a total of 32 jobs in direct job creation and 5 jobs in induced (indirect) job creation. The total job impact of RRRA visitor spending is estimated at 37 jobs. The total value-added impact of RRRA visitor spending is estimated at $684,574 in direct value-added impact and $248,429 in indirect value-added impacts. The total estimated value added impact in Ogemaw County is $933,033.

The findings from this study clearly indicate the importance of green infrastructure to local economic activities and the overall impact of “green assets” on local economic performance. These results can imply three policy implications: (1) to the extent that the services of “green assets” are related to economic impacts, sustainable and viable utilization of these resources can translate into economic outcomes; (2) to the extent that “green-assets” are tied to creating or enhancing local economic opportunities, they can be used as strategic assets for local comparative advantage; and (3) conservation of natural resources and economic growth need not be antagonistic, and in fact can be synthesized in win-win sustainable use of “green assets” to foster economic prosperity.
As Michigan strives to foster economic prosperity, green infrastructure can play a crucial role in providing local economies needed support. As the translation from “green assets” to economic performance becomes better known, the strategic role of green infrastructure in revitalizing and enhancing local economies will become more apparent.
References


