

Assessing Economic Impacts of Ecotourism in the Virginia Roanoke River Basin: Metrics Program Development Services



A Project of the:
Roanoke River Basin Association - Upper Reach Blueways
Virginia Tobacco Indemnification & Community Revitalization Commission
And the Agricultural & Applied Economics Department
College of Agriculture & Life Sciences
Virginia Tech
November 2014

Project Staff

Roanoke River Basin Association: Gene Adesso - President
Andrew Lester - Executive Director
Scott Murray - Marketing Director Upper Reach

Virginia Tobacco Indemnification & Community Revitalization Commission:
Sarah Capps - Southside Grants Program Administrator

Principal Investigator: Mike Ellerbrock, PhD, Director
Research Assistants: Nate Ferraro,
Jacob Ellerbrock, Jessie Kull, Alex Flevarakis
Center for Economic Education
Virginia Tech

Contents

I.	Introduction	.....	3
II.	Goals	.....	3
III.	Literature Review	.....	5
IV.	Regional Demographics	.....	6
V.	Methodology	.....	7
VI.	Survey Design	.....	8
VII.	Data Collection	.....	8
VIII.	Economic Analysis	.....	16
IX.	Conclusions	.....	17
X.	Future Metrics Development	.....	18
XI.	Appendices		
	* References	.....	18
	* Survey Brochure	.....	20
	* Survey Questionnaire	.....	21
	* Collaborators Correspondence	.....	25
	* Project Collaborators	.....	26

I. Introduction

The mission of the Virginia Tobacco Indemnification & Community Revitalization Commission (VTICRC) includes helping rural communities transition from a tobacco-based monoculture to a diversified economy. One strategy, given a beautiful and vibrant foundation of natural resources in South and Southwest Virginia, is promotion of ecotourism. The influx of outside dollars adds to the region's economic base.

Committed to environmental conservation and education, the Roanoke River Basin Association (RRBA) initiates planning programs to develop facilities and coordinates marketing of outdoor recreation opportunities and special events throughout the large watershed. Two recent thrusts of the RRBA are its development of an interactive website and investment in capital projects that installed trailhead signs and built launch facilities along the Roanoke River. A unique and noteworthy accomplishment of the RRBA is its design and installation of handicapped accessible launch sites that enable *Wounded Warriors* and other physically-challenged citizens to easily access the water.

The *2007 Virginia Outdoors Plan* (Department of Conservation & Recreation, Rev. 2013) advocated regional partnerships among agencies and cooperative agreements among localities to leverage resources for developing and promoting ecotourism. Rural counties in Southern Virginia are encouraged to work with riparian landowners and entrepreneurial business establishments to enhance paddling operations along the Roanoke River Basin (RRB).

Hence, the VTICRC and RRBA wish to ascertain the economic effectiveness of their combined efforts in the "Upper Reach" mid-basin of the RRB. The *Upper Reach Blueways Master Plan* focuses specifically on six Virginia counties: Campbell, Charlotte, Halifax, Lunenburg, Mecklenburg, and Pittsylvania (Upper Reach 2011).

In response to their Call for Proposals, Virginia Tech's (VT) Center for Economic Education in the Department of Agricultural Applied Economics of the College of Agriculture and Life Sciences submitted a competitive research proposal to conduct an economic impact assessment of ecotourism in Virginia's Upper Reach of the Roanoke River Basin during 2013-14. VT was awarded the study. This Report summarizes our findings.

II. Goals

Among economists, it has been said that: "*Rural economic development is not rocket science ... it's harder than that!*" Indeed, rural communities face complex challenges in planning their futures: building their tax base and infrastructure; countering the "brain drain" of losing bright young educated professionals who leave home; recruiting industries that will create a positive net flow of jobs, goods and services; finding niche markets for their unique assets and amenities; identifying "value-added" services that enhance the products of other regions; using

the internet to integrate with urban/rural linkages; maintaining environmental quality and their natural resource base; and respecting local historical traditions and cultural values.

Assessing the net economic impacts of rural development policies and programs is also a challenging task. It seeks to distinguish among direct, indirect and induced effects across various sectors of the local economy. Accuracy of the findings necessitates partitioning between dollars that would have been spent locally anyway versus new dollars spent as a result of a marketing program or new facility development. Hence, measures of economic impacts are estimates with modest degrees of certainty.

Many rural economies have been hurt by the recent recessions and other financial factors; however, there are ways for these communities to create economic development. Natural scenic beauty can be a vital way to stimulate the economy by drawing in visitors from outside of the community. This is an example of ecotourism and many rural areas are using it as a keystone of their economic recovery projects. A Blueway, or paddling trail, is a prime example of a project that uses the natural endowments of the community to stimulate economic growth by attracting outside guests.

A Blueway is a padding trail that is used for canoeing and kayaking. Blueways become a tourist attraction that can draw people from the surrounding area. The paddling trails have various put-in and take-outs along the trail, spreading the economic effects over the entire length of the Blueway. This can provide substantial economic opportunity over a large rural area that still has scenic value (Blair 2012).

In Southern Virginia a project is underway to institute economic change for six counties along a newly made Blueway. The new Blueway has 22 access points that visitors can use, distributed over the various counties. The new tourist destination will principally assist the counties of Mecklenburg, Halifax, Pittsylvania, Campbell, Lunenburg, and Charlotte. Using Input-Output modeling one can try to glean the economic impacts that the Blueway will have on the surrounding communities (UpperReach.org).

The goals of this two-year collaborative research effort between Virginia Tech, the RRBA - Upper Reach Blueways and VTICRC are to:

- 1) Collect via personal interviews and online survey and validate existing visitation data of ecotourism, focused on paddling recreation, to the Southside Virginia District;
- 2) Estimate the number and type of jobs created by ecotourism in the Upper Reaches of the Roanoke River Basin; and,
- 3) Develop a scope and description for future metrics programs.

III. Literature Review

Urban citizens in densely populated areas who seek outdoor recreation are increasingly drawn to rural amenities. Economic concerns and a heightened sense of values for nature are key factors behind the ecotourism movement. Thus, rural communities frequently try to attract people willing to spend money to enjoy rural scenic resources. Impacts of these trends occur throughout a region as a direct result of household expenditures on tourism.

Ecotourism in nature is a less intense form of tourism. Ecotourism is preserving environmentally threatened resources by generating an economic incentive to sustain these areas. Another reason that ecotourism is becoming popular is because tourists can see the impacts of valuing the environment in their choice of destination. By choosing to use an environmental amenity for a tourist destination, the household is placing value on it that can contribute to preservation of the natural resource.

Scenic natural resources can generate tourism revenue and stimulate overall economic revitalization. A link exists between an economic development strategy and the surrounding natural beauty and resources of an area. Areas with abundant natural resources can grow to become attractive to both individuals and industries.

Regional impacts must take into account the effects of travel by households or individuals to an ecotourism location. Travel costs can also be associated with the expenditures of a household in the way the resource is valued. Trip length also has a direct effect on the recreation enjoyment and the cost of the overall trip. Other activities may also occur in the trip, such as shopping or other related interests. Each of these activities has an effect on the economic development and calculation of the money into the community.

Direct effects occur through immediate spending of the tourist, e.g., lodging, food, outfitting, and gas. Indirect effects are the expenditures that businesses make to provide the services or goods that a customer consumes, e.g., when a local restaurant purchases food from a local farmer. Induced effects are the expenditures made by people working in the town from the increased wages they earn from tourism dollars.

Local economic expenditures can spark spin-off effects throughout a larger area. Rafting jobs stimulate employment and income in related sectors beyond the immediate ecotourism community. There can be effects on both state and national levels (Jackson, Styne, Propst and Siverts 1992).

Murthy and Cabbage used weighted multipliers to calculate the effects of tourism in North Carolina economies. These multipliers looked at the effect on forestry products and nature based tourism in North Carolina. Employment among the various industrial sectors ranges from 2.10 to 1.11 (Murthy and Cabbage 2004).

Thompson and Wagenhals studied Worcester County, in Maryland regarding the effects of nature tourism, namely direct impacts. Water recreation was a sizeable part of the study encompassing boating (canoeing, kayaking, motor and sail) and swimming. Motor/Sailing contributed about \$3.4 million and Canoe/Kayak accounted for \$0.3 million (Thompson and Wagenhals 2002).

The Virginia Department of Conservation & Recreation study (2007, Rev. 2013) found that paddling, hiking and backpacking participants drove on average 1.8 hours to their destination, similar to the 80.2 miles driven by paddlers in this study. Similarly, the DCR study found that an average 2.35 persons per household participated four times per year in paddling and 70-80 percent of trips were in-state destinations on public lands, factors also consistent with this study.

Blair (2012) conducted a study on the Chattahoochee Valley, a Blueway development project on the border of Georgia and Alabama, similar to the ECONorthwest study and this study. The aim of the project was to create a “blue” and “green” infrastructure that would help with economic development. A festival for paddlers was held. The study created a comprehensive expenditure report that outlined what tourists were purchasing in the community. The overall effects were calculated relative to the participation data and census data of the regions to estimate the number of people who are potentially participants. This study is close to this study, not only from a regional standpoint, but also measuring a similar asset of a Blueway.

Input-Output multipliers must be carefully selected to gain the most reliability. ECONorthwest (2008, p. 11) conducted a study on the federally designated Wild and Scenic Rogue River in rural Oregon that estimated a set of multipliers with regard to rafting and use of the river by groups of guides and outfitters. The total gross output multiplier ranged from 2.00 to 2.10, the total income multiplier from 2.16 to 2.36, and the employment multiplier from 1.57 to 1.84. Both studies involved similar demographics and focused on rafting recreationists. Using these multipliers is a defensible approach also because the Rogue River study focused on an 84-mile stretch, where the Upper Reach - RRB comprises 81 miles of waterway.

IV. Regional Demographics

The Virginia Roanoke River Basin, home to 866,527 residents, traverses 16 counties over 9,580 square miles, and includes 400 river miles. Population by county (including cities):

Appomattox	14,973	Charlotte*	12,404	Mecklenburg*	31,749
Bedford	74,898	Floyd	15,279	Montgomery	94,392
Botetourt	33,148	Franklin	56,159	Patrick	18,490
Brunswick	17,434	Halifax*	35,849	Pittsylvania*	106,561
Campbell*	55,163	Henry	67,972	Roanoke	<u>189,408</u>
Carroll	30,042	Lunenburg*	12,606	TOTAL	866,527

* The Upper Reach segment of the Roanoke River Basin (UR-RRB) flows through the following counties: Campbell, Charlotte, Halifax, Lunenburg, Mecklenburg, and Pittsylvania, with a combined population of 254,332. The DCR study (2007, Rev. 2013) estimates that 10 percent of the population (25,433) participates annually in canoeing and/or kayaking.

V. Methodology

Input-Output (I-O) analysis has been used to estimate the economics effects of tourism for over four decades. I-O modeling became more sophisticated, including measurement of leakage from the regional economy. It also segregated impacts into various sectors, each affected by tourism dollars.

I-O modeling uses a set of multipliers to relate the spending patterns of people to the economic impacts generated. Surveys or interviews are two ways to acquire these spending patterns. Multipliers are then applied to the general population, therefore the demography of a particular region is key to estimating the overall impacts on the economy. These effects can be partitioned into three separate groups; direct effects, indirect effects, and induced effects (Cordell, Bergstrom, Ashley, Karish 1990).

SPRING 2013: With a team of employed students, we first studied the Virginia Department of Conservation and Recreation's *2013 Outdoor Plan* and the Roanoke River Basin Association's *Upper Reach Blueways Master Plan* to identify capital improvement projects on which to conduct field surveys in an attempt to quantify the economic impact of the RRBA's marketing efforts.

SUMMER 2013: To advertise our research efforts, generate public interest, and encourage responses to our online Survey, we developed a Brochure (Appendix, p. 20) about the RRBA - Upper Reach program, with either of two links website visitors could use to electronically access our Survey. We simultaneously developed a Survey Monkey on the RRBA's website to ascertain whether enhanced visibility of the website has occurred, as well as to invite online responses to our Survey (Appendix, p. 21).

To elicit assistance from ecotourism agencies and retail outfitters, we sent a personal letter (Appendix, p. 25) to 26 organizations or establishments seeking their help in distributing our Brochure. Their generous assistance enabled distribution of approximately 2,000 Brochures to the public (Appendix, p. 26).

We also conducted on-site interviews at selected sites along the Roanoke River. Particular focus was paid to monitoring the use of universally accessible ramps erected during Summer 2013. However, the number of paddlers available for interview on most days was only two to five people, not generating a statistically sufficient database of responses.

SUMMER & FALL 2014: Additional data collected were used to assess the impact on job creation, i.e., the number and types of jobs related to paddling/hiking recreation in the Roanoke River Basin's Upper Reaches. We distributed a second round of 2,000 Brochures to the 26 outfitters and tourist organizations. At Gander Mountain Outfitters and Backcountry Ski & Sport, we gave Brochures to customers in the parking lot who were purchasing kayaks. In the absence of sufficient first-hand data on actual jobs created, we made theoretical estimates based on similar impact studies. Economic analysis was conducted to estimate the direct, indirect and induced effects generated by the RRBA's marketing program and capital development projects.

PARTNERSHIP: Throughout the project, we remained flexible and worked closely with the RRBA staff to identify key audiences and activities to address. Virginia Tech committed \$21,000 in matching funds: \$8,000 in student wages, plus at least one month (\$13,000) in Ellerbrock's unpaid summer salary. As a 9-month employee, his services are in-kind. Half of the matching funds were allocated in 2013 and half in 2014.

VI. Survey Design

The Survey instrument was designed to be brief, user-friendly, and focused on essential information. Respondents were encouraged to participate by being enrolled in a raffle for a \$300 credit card.

Survey questions solicited information on outdoor activities, frequency of visits, party size, daily expenditures by category, days visited, distance traveled, place of origin, and suggestions for improvement in policies and/or facilities. Respondents were also asked about their level of awareness of RRBA's marketing efforts.

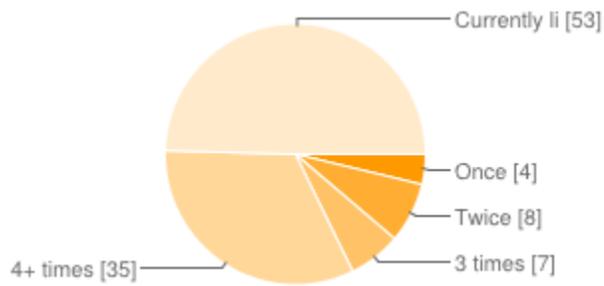
VII. Data Collection

During the study period (June 2013 - October 2014) we received 107 Survey responses. The tables and charts below summarize the responses:

When you visit the Roanoke River Basin (RRB), which activities do you typically enjoy (check all that apply)?

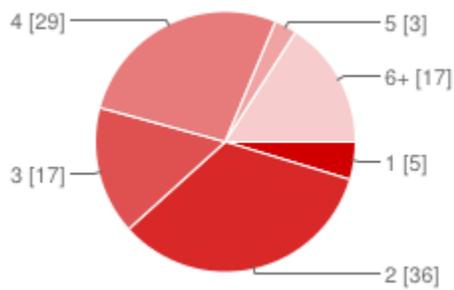
Kayaking or canoeing	84	79%
Day hiking or bird-watching/wildlife observation	47	44%
Onshore fishing	24	22%
Camping	31	29%
Other	24	22%

How often do you travel to the RRB for recreation per year?



Once	4	4%
Twice	8	7%
3 times	7	7%
4+ times	35	33%
Currently live in the RRB	53	50%

Typically, how many people are in your party when you travel to the RRB for recreation?



1	5	5%
2	36	34%
3	17	16%
4	29	27%
5	3	3%
6+	17	16%

How far do you travel from your HOME to the RRB for recreation?

I live in the RRB **49** 46%

1-24 miles	11	10%
25-49 miles	16	15%
50-99 miles	13	12%
100-199 miles	13	12%
200+ miles	5	5%

In which COUNTY of the RRB do you normally recreate?

Montgomery	3	3%
Floyd	0	0%
Botetourt	5	5%
Roanoke	32	30%
Franklin	5	5%
Bedford	0	0%
Patrick	1	1%
Carroll	0	0%
Henry	0	0%
Pittsylvania	2	2%
Campbell	2	2%
Appomattox	2	2%
Charlotte	0	0%
Halifax	19	18%
Mecklenburg	33	31%
Brunswick	3	3%

Equipment rentals [On a typical outing in the RRB, approximately how much do you spend per person per day on each of the following?]

\$0	94	88%
\$1-\$50	7	7%
\$51-100	1	1%

\$101-150	1	1%
\$151-200	3	3%
\$201-250	0	0%
\$251-300	0	0%
\$301+	0	0%

Equipment purchases [On a typical outing in the RRB, approximately how much do you spend per person per day on each of the following?]

\$0	60	56%
\$1-\$50	36	34%
\$51-100	3	3%
\$101-150	2	2%
\$151-200	1	1%
\$201-250	1	1%
\$251-300	1	1%
\$301+	2	2%

Lodging [On a typical outing in the RRB, approximately how much do you spend per person per day on each of the following?]

\$0	85	79%
\$1-\$50	11	10%
\$51-100	4	4%
\$101-150	2	2%
\$151-200	3	3%
\$201-250	1	1%
\$251-300	0	0%
\$301+	0	0%

Food [On a typical outing in the RRB, approximately how much do you spend per person per day on each of the following?]

\$0	6	6%
\$1-\$50	79	74%
\$51-100	9	8%
\$101-150	2	2%
\$151-200	6	6%
\$201-250	1	1%
\$251-300	1	1%
\$301+	2	2%

Transportation (gas/airfare/etc.) [On a typical outing in the RRB, approximately how much do you spend per person per day on each of the following?]

\$0	5	5%
\$1-\$50	80	75%
\$51-100	10	9%
\$101-150	6	6%
\$151-200	1	1%
\$201-250	1	1%
\$251-300	2	2%
\$301+	1	1%

Shopping [On a typical outing in the RRB, approximately how much do you spend per person per day on each of the following?]

\$0	49	46%
\$1-\$50	44	41%
\$51-100	5	5%

\$101-150	2	2%
\$151-200	1	1%
\$201-250	2	2%
\$251-300	2	2%
\$301+	1	1%

Activities/entertainment [On a typical outing in the RRB, approximately how much do you spend per person per day on each of the following?]

\$0	49	46%
\$1-\$50	42	39%
\$51-100	8	7%
\$101-150	4	4%
\$151-200	2	2%
\$201-250	0	0%
\$251-300	0	0%
\$301+	1	1%

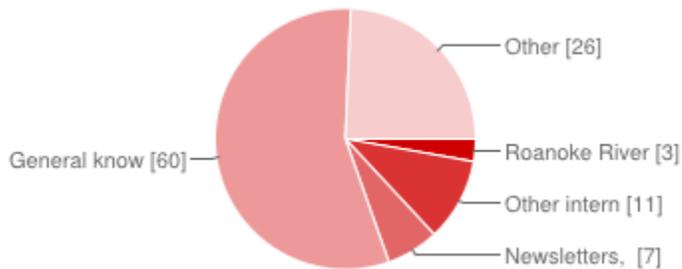
Guided trip fees [On a typical outing in the RRB, approximately how much do you spend per person per day on each of the following?]

\$0	98	92%
\$1-\$50	4	4%
\$51-100	0	0%
\$101-150	1	1%
\$151-200	1	1%
\$201-250	0	0%
\$251-300	0	0%
\$301+	2	2%

Other [On a typical outing in the RRB, approximately how much do you spend per person per day on each of the following?]

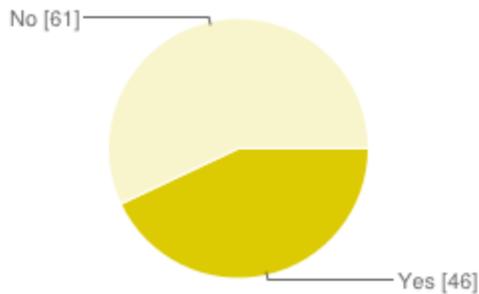
	77	72%
\$0		
\$1-\$50	23	21%
\$51-100	1	1%
\$101-150	0	0%
\$151-200	1	1%
\$201-250	1	1%
\$251-300	1	1%
\$301+	2	2%

What drew you to recreate in the RRB?



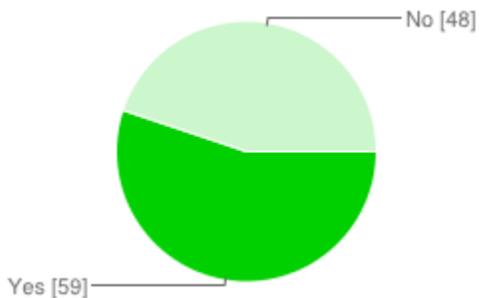
Roanoke River Basin Association (RRBA) website	3	3%
Other internet sources	11	10%
Newsletters, advertisements, newspaper, or TV	7	7%
General knowledge	60	56%
Other	26	24%

Have you heard of the RRBA's Upper Reach (www.upperreach.org) program and its projects?



Yes **46** 43%
 No **61** 57%

Have the projects (launch ramps, trailhead signs, etc.) implemented by Upper Reach influenced your travel patterns, recreation choices, or length of stay?

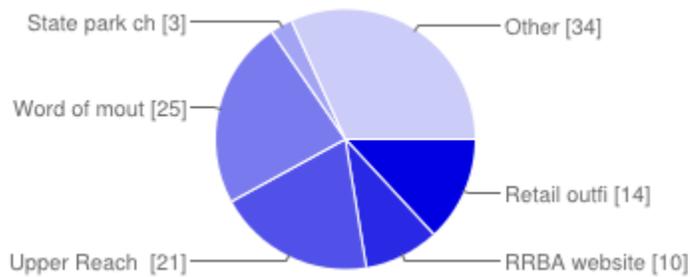


Yes **59** 55%
 No **48** 45%

What additional projects/improvements would cause you recreate in the RRB more often?

More launch ramps	60	56%
More trailhead signs	36	34%
More community events	29	27%
Better parking	24	22%
More handicap accessible amenities	6	6%
Fishing piers	22	21%
Other	22	21%

How did you find out about this survey?



Retail outfitter brochures	14	13%
RRBA website	10	9%
Upper Reach website (www.upperreach.org)	21	20%
Word of mouth	25	23%
State park check-in center brochures	3	3%
Other	34	32%

VIII. Economic Analysis

The 107 Survey responses reported the expenditure behaviors of 361 individuals. These recreationists made a weighted average of 3.4 paddling visits annually, for a total of 1,227 individual site visits per year. Paddlers visiting from outside the RRB traveled an average of 80.2 miles to access RRB launch sites. Survey respondents (RRB residents and visitors) collectively spent weighted average expenditures per person on the following items.

<u>Category</u>	<u>\$ per Day</u>	<u>\$ per Year</u>
Equipment Rentals	\$8.49	\$10,417
Equipment Purchases	25.00	30,675
Lodging	15.33	18,810
Food	47.64	58,454
Transportation/Fuel	44.81	54,982
Shopping	30.19	37,043
Activities/Entertainment	26.42	32,417
Guided Trip Fees	9.43	11,571
Other	<u>18.16</u>	<u>22,282</u>
TOTAL	\$225.47	\$276,651

Survey Respondents' Impacts. The economic impacts of these expenditures were calculated using the average multipliers utilized in the ECONorthwest (2008) study of rafters: Output = 2.05; Income = 2.26; Employment = 1.70. Baseline output, income and employment from direct involvement in the rafting industry equals 1.0. Thus, using the ECONorthwest rafting multipliers above, each dollar spent directly on paddling items generates an additional (indirect) \$1.05 of output by related sectors and \$1.26 of

income earned in related sectors. Each person directly employed in paddling corresponds to an additional (indirect) 0.7 jobs created/supported in related sectors.

Assuming an average annual salary/wages of \$30,000 paid to full-time workers directly employed in the paddling industry, the total direct expenditures by Survey Respondents of \$276,651 annually support:

9.23 Paddling Jobs in the Roanoke River Basin.

The multiplier effects mean that the total direct expenditures by Survey Respondents of \$276,651 also generated an additional (indirect):

*\$290,484 = \$276,651 x 1.05 of Output by related industries, plus
\$348,580 = \$276,651 x 1.26 of Income earned throughout the Roanoke River Basin, and
6.47 = 9.23 x 0.7 Jobs created/supported in related sectors.*

Extrapolation to the UR-RRB Population.

The U.S. population in 2011 was 310 million. According to the *Outdoor Foundation*, 9,787,000 citizens went canoeing and 8,229,000 went kayaking (Hansel 2012). Therefore, consistent with other historical estimates of annual paddling participation rates, those 18,016,000 paddlers represent 5.8 percent of our nation's general population. Since the DCR study estimated that 10 percent of Virginians canoe and/or kayak annually, this study will assume an average annual paddling participation rate of 8.0 percent in the Upper Reach sub-basin of the RRB.

If 8.0 percent of the 254,332 UR-RRB residents annually participate in paddling, then approximately 20,347 UR-RRB residents enjoy paddling RRB waters each year. Assuming that the general population of 20,347 UR-RRB paddlers includes less-intensive users (e.g., 2.0 visits per year) than the Survey Respondents' average (3.4 visits per year), the total number of paddling days by UR-RRB residents are 40,694 launches annually. This conservative assumption of 2.0 visits per year, compared to 3.4 visits per year by Survey Respondents, amounts to a 40 percent decline in annual expenditures by local paddlers. Therefore, at the same levels of spending per capita per day as Survey Respondents, their collective expenditures on paddling are estimated to be about \$9,175,276 (40,694 x \$225.47), thereby creating:

306 Paddling Jobs (at \$30,000 FTE salary/wages) in the Roanoke River Basin.

The multiplier effects mean that the estimated total direct expenditures by all UR-RRB paddlers of \$9,175,276 generated an additional (indirect):

*\$9,634,040 of Output by related industries, plus
\$11,560,848 of Income earned throughout the Roanoke River Basin, and
214 Jobs (at \$30,000 FTE salary/wages) created/supported in related sectors.*

IX. Conclusions

Based solely on the data received from 107 Survey Responses, these 361 individuals paddled 3.4 times per year and spent \$225.47 per person per day, thereby generating:

*\$567,135 of Output (\$276,651 direct + \$290,484 indirect)
\$625,231 of Income (\$276,651 direct + \$348,580 indirect) and
15.7 Jobs (9.23 direct + 6.47 indirect) in the Roanoke River Basin.*

If 8.0 percent of the UR-RRB general population (254,332 x 0.08 = 20,347) paddle only twice per year and spend the same average of \$225.47 per person per day as Survey Respondents, their 40,694 annual launches correlate with:

*\$18,809,316 of Output (\$9,175,276 direct paddling + \$9,634,040 indirect)
\$20,736,124 of Income (\$9,175,276 direct paddling + \$11,560,848 indirect) and
520 Jobs (306 direct paddling + 214 indirect) in the Roanoke River Basin.**

* Note that these estimates do not include the economic impacts of paddlers visiting from outside the 16 counties of the RRB.

In sum, Survey Responses suggest that investment in paddling facilities, supplies, services and marketing programs is a good investment throughout the Roanoke River Basin. Furthermore, these economic impact estimates do not include the public goodwill and private inspiration generated by the human/human and human/nature interactions in paddling, especially for our *Wounded Warriors*.

X. Future Metrics Development

The *Upper Reach Blueways Master Plan* (2011) identified eight metrics for measuring the success of its marketing and development efforts: Membership, Attendance, Classroom Participants, Trail Usage, Website Hits, Fundraising, Rentals/Excursions, and Post-Event Surveys, including this 15-month study. These assessment criteria should be continued and monitored over time and compared with similar Blueways programs in the Commonwealth.

Economic impact studies are most reliable when the demographic data and participants' behavior can be partitioned among residents versus visitors, as demonstrated in the DCR study (2007, Rev. 2013) and this study. Future metric records should continue to seek to distinguish the expenditure patterns of paddlers from out-of-state, Virginia, RRB, and the UR-RRB.

XI. Appendices

References

Department of Conservation & Recreation, *2007 Virginia Outdoors Plan*. Richmond, Virginia, Rev. 2013, 405 pp., http://www.dcr.virginia.gov/recreational_planning/vop.shtml.

Upper Reach, *Upper Reach Blueways Master Plan*, Roanoke River Basin Association. Boydton, Virginia, November 2011, 66 pp., http://upperreach.org/index.php?option=com_docman&task=doc_view&gid=11&Itemid=192.

Blair, B. F. (2012). *The Economic Impact of the Proposed Chattahoochee Valley Blueway Project*. The Butler Center for Business and Economic Research, Turner College of Business: Columbus State University.

ECONorthwest (2008). *Regional Economic Impacts of Recreation on the Wild and Scenic Rouge River*, Save the Wild Rouge Campaign with funding from the Giles & Elise Mead Foundation.

Jackson, R. S., et al. (1992). *Economic Impact Analysis as a Tool in Recreation Program Evaluation*. Department of the Army. Washington D.C., US Army Corps of Engineers.

Murthy, A. and F. W. Cabbage (2004). "An Economic Analysis of Forest Products and Nature-Based Tourism Sectors in North Carolina." *Southern Rural Sociology*, 20(1): 25-38.

Repahnn, T. J. (2012). *Outdoor Recreation Demand for Virginia: An Analysis Using 2011 Virginia Outdoor Survey Data*. Center for Economic and Policy Studies, Weldon Cooper Center for Public Service: University of Virginia.

Thompson, M. and E. Wagenhals (2002). *Economic Impact of Nature Tourism and Cultural Activities in Worcester County, Maryland*. Institute for Government Services, Center for Applied Policy Studies.

Cordell, H.K., J. C. Bergstrom, G.A. Ashley, and J. Karish (1990). "Economic Effects of River Recreation on Local Economies," *Water Resources Bulletin*, 23(1); 53-60.

Hansel, B. (2012). "Kayaking and Canoeing Participation Rates," *Outdoor Recreation Participation Topline Report 2012*. Outdoor Foundation. www.paddlinglight.com/articles/kayaking-and-canoeing-participation-rates.

Related Studies

Beardsley, W. G. (1971). "The Economic Impact of Recreation Development: A Synopsis," *Proceedings*, Upper Darby, N.E. Forest Experiment Station, U.S. Forest Service.

Elrod, R. H. (1972). "Recreation: Economic Development Impact and Seasonality: Comment." *Review of Regional Studies*, 3(2), Winter, 169-170.

Garrison, C. B. (1972). "Local Economic Impact of Reservoir Recreation." Center for Business and Economic Research, Water Resources Research Center, University of Tennessee, Research Report No.27, July, 1972.

Hvenegaard, G. T. (1994). "Ecotourism: A Status Report and Conceptual Framework," *Journal of Tourism Studies*, 5(2): 24-35.

Taylor, J. E., *et al.*, (2009). "Ecotourism and Economic Growth in the Galapagos: An Island Economy-wide Analysis," *Environment and Development Economics*, 14(2): 139-162.

Thigpen, J. F., *et al.*, (2001). *North Carolina Coastal Plains Paddle Trails Initiative: The State of North Carolina Coastal Paddling Survey*, North Carolina Sea Grant.

Wang, P. C. M. (1997). "Economic Impact Assessment of Recreation Services and the use of Multipliers: a Comparative Examination," *Journal of Park and Recreation Administration*, 15(2): 32-43.

Weaver, D. B. (2002). "The Evolving Concept of Ecotourism and Its Potential Impacts," *International Journal of Sustainable Development*, 5(3): 251-264.

Survey Brochure

→ WHAT IS UPPER REACH?

Upper Reach is a program initiated by the Roanoke River Basin Association. The program promotes adventure education and eco-tourism which furthers RRBA's mission of stewardship of the Roanoke River Basin.

Upper Reach's main points of focus include trail building and maintenance, accessible canoe/kayak launch ramps, events and promotion, educational programming, outings and excursions, and wildlife habitat and photography.

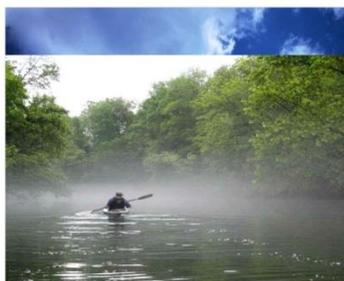
For more information please visit:

www.rrba.org
www.upperreach.org



RECREATION SURVEY ROANOKE RIVER BASIN 2013-2014

Roanoke River Basin Association's
Upper Reach Program



→ UPPER REACH'S

SURVEY GOALS

Please help us:

- Understand your outdoor needs and desires
- Estimate the economic impact of eco-tourism in the RRB
- Plan for new facilities and events

SURVEY LENGTH

- 12 short questions in 2-3 minutes

SURVEY AGENT

- Virginia Tech's Center for Economic Education in the Department of Agricultural & Applied Economics

→ SURVEY LINK

In order to continue Upper Reach's developments in the Roanoke River Basin, we need as many participants as possible! If you are interested in helping, please take our survey:

→ www.upperreach.org

www.rrba.org

See "About Us" on the RRBA website for a map of the RRB.

→ SURVEY PRIZE

By taking the survey you can enter a raffle to win a \$300 Visa gift card!



→ WHAT COMES NEXT?

This survey will be used to evaluate Upper Reach's effectiveness and will also be shared with state programs and retail outfitters to maximize future projects and events. Results of the survey will be available to the public through the Roanoke River Basin Association website.

Recreation Survey - Roanoke River Basin

* Required

*When you visit the Roanoke River Basin (RRB), which activities do you typically enjoy (check all that apply)? **

- Kayaking or canoeing
- Day hiking or bird-watching/wildlife observation
- Onshore fishing
- Camping
- Other:

*How often do you travel to the RRB for recreation per year? **

*

- Once
- Twice
- 3 times
- 4+ times
- Currently live in the RRB

*Typically, how many people are in your party when you travel to the RRB for recreation? **

- 1
- 2
- 3
- 4
- 5
- 6+

*How far do you travel from your HOME to the RRB for recreation? **

- I live in the RRB

- 1-24 miles
- 25-49 miles
- 50-99 miles
- 100-199 miles
- 200+ miles

*In which COUNTY of the RRB do you normally recreate? **

- Montgomery
- Floyd
- Botetourt
- Roanoke
- Franklin
- Bedford
- Patrick
- Carroll
- Henry
- Pittsylvania
- Campbell
- Appomattox
- Charlotte
- Halifax
- Mecklenburg
- Brunswick

*On a typical outing in the RRB, approximately how much do you spend per person per day on each of the following? **

	\$0	\$1- \$50	\$51- 100	\$101- 150	\$151- 200	\$201- 250	\$251- 300	\$301+
Equipment rentals	<input type="radio"/>							
Equipment purchases	<input type="radio"/>							
Lodging	<input type="radio"/>							
Food	<input type="radio"/>							
Transportation (gas/airfare/etc.)	<input type="radio"/>							
Shopping	<input type="radio"/>							
Activities/entertainment	<input type="radio"/>							
Guided trip fees	<input type="radio"/>							
Other	<input type="radio"/>							

*What drew you to recreate in the RRB? **

- Roanoke River Basin Association (RRBA) website
- Other internet sources
- Newsletters, advertisements, newspaper, or TV
- General knowledge
- Other:

*Have you heard of the RRBA's Upper Reach (www.upperreach.org) program and its projects? **

Upper Reach is a program initiated by the Roanoke River Basin Association. The program promotes adventure education and eco-tourism which furthers RRBA's mission of stewardship of the Roanoke River Basin. Upper Reach's main points of focus include trail building and maintenance, accessible

- Yes
- No

*Have the projects (launch ramps, trailhead signs, etc.) implemented by Upper Reach influenced your travel patterns, recreation choices, or length of stay? **

- Yes
- No

*What additional projects/improvements would cause you to recreate in the RRB more often? **

- More launch ramps
- More trailhead signs
- More community events
- Better parking
- More handicap accessible amenities
- Fishing piers
- Other:

*How did you find out about this survey? **

- Retail outfitter brochures
- RRBA website
- Upper Reach website (www.upperreach.org)
- Word of mouth
- State park check-in center brochures

Other:

If you would like to be enrolled in a \$300 Raffle Prize, please provide some identifying information so that we can contact you if you are the winner. Your information will not be shared or released to any organization or individual.

Please enter your name, phone number, and email address.

Never submit passwords through Google Forms.

Powered by


This form was created inside of Virginia Tech.
[Report Abuse](#) - [Terms of Service](#) - [Additional Terms](#)

Correspondence with Collaborators



Agricultural & Applied Economics
Hutcheson Hall (0401)
Blacksburg, Virginia 24061
540/231-6301 Fax: 540/231-7417
www.aaec.vt.edu

[Date]

[Address]

Dear [Outfitter]:

Would you please be willing to offer during 2013-14 the enclosed Brochure to your customers? It is an informational brochure which invites them to respond to an online Survey linked to the Roanoke River Basin Association's (RRBA) website. It is a confidential Survey of 12 short questions, taking 2-3 minutes to respond.

Our Center for Economic Education at Virginia Tech is conducting a study for the RRBA to understand the outdoor recreation patterns of paddlers and hikers, estimate the economic impact of their expenditures, and plan future launch and trail facilities.

Responders will be invited to identify themselves only if they wish to be enrolled in a Raffle for a \$300 Gift Certificate. Your establishment's identification will not be revealed, nor linked with any responses.

Please call (540-231-7722) if you have any questions. Thank you for your assistance.

Sincerely,

A handwritten signature in black ink that reads "Mike Ellerbrock".

Mike Ellerbrock, PhD
Professor
(540) 231-7722
mebroek@vt.edu

Invent the Future

VIRGINIA POLYTECHNIC INSTITUTE AND STATE UNIVERSITY
An equal opportunity, affirmative action institution

RRBA Brochures – Distribution List

<u>Establishment</u>	<u>Contact</u>	<u>Date Sent</u>	<u># of Brochures</u>
Mecklenburg Co Tourism	Justin Kerns	7-22-13	50
Appomattox River Company	Tom Detrick	7-11-13	≈50
Boydton Farm Supply	Ethan Garnett	7-10-14	150
Backcountry Ski & Sport	Lauren & Andrew	7-2-14	200
Farmville Tourist Info Center	Receptionist	7-2-14	100
Farmville Boat Launch Site	kiosk	7-2-14	40
JR's Outdoor Gear	JR Burnette	7-11-13	≈50
Twin Lake Outfitters	Robert Bondurant	7-11-13	≈100
Sportsman's Warehouse	Bill Colvard	7-11-13	≈100
Frog Hollow	Natasha	7-18-13	≈100
Scott Murray		7-18-13	100
Gander Mountain		7-11-13	≈50
Tobacco Heritage Trail	Robin Fowler	7-11-13	≈50
"	"	8-26-13	100
John Kerr Visitor Assist Ctr	Michael Womack	7-11-13	≈100
Occoneechee St Park/Marina	Scott Shanklin	7-11-13	≈50
Staunton River St Park	Beth Diamond	7-11-13	≈100
Clarksville CoC	Ann Bowers	7-11-13	≈50
South Hill CoC	Frank Malone	7-11-13	≈50
Pino's Pizza		7-11-13	≈50
Bowen's Mini Mart II		7-11-13	≈50
Alta Vista English Park	On Site Visit	7-25-13	80

Doug Miley		7-30-13	100
Scott Murray		7-30-13	60
Bobcat's Bait and Tackle		7-30-13	100
Dan River Basin	Tiffany Hayworth	8-1-13	300
Wasena Park, ROA	On Site Visit	8-9-13	200
Rivers Edge Park	On Site Visit	8-9-13	200