

*Canadian Sport Tourism Alliance*



*Alliance canadienne du tourisme sportif*

# 2011 Wharf Rat Rally Digby, NS

---

Economic Impact Assessment

January 2012

---

*The following analysis provides the economic impact of the annual Wharf Rat Rally hosted in Digby, NS from August 29 to September 2, 2011 as generated by the Sport Tourism Economic Assessment Model, Professional version.*

## Table of Contents

Table of Contents ..... 2

1.0 Background ..... 3

2.0 Methodology/ Survey Results..... 4

3.0 Operations ..... 7

4.0 Economic Impact Results ..... **Error! Bookmark not defined.**

Appendix 1: Economic Impact Methodology – STEAM ..... 7

Appendix 2: Glossary of Terms Used by STEAM..... 11

---

For more information about this report, please contact:  
Tony Fisher, Canadian Sport Tourism Alliance, [research@canadiansporttourism.com](mailto:research@canadiansporttourism.com)

## 1.0 Background

The Wharf Rat Rally, which started in 2004 with 750 motorbikes has grown tremendously to become the largest motorbike rally in Atlantic Canada. The 2011 edition featured 22,500 motorbikes coming from Canada and the U.S. Given the great location of Digby in terms of its proximity to major urban centres, the great scenery of the surrounding roads and the warm welcome given by Digby residents have been the keys to the event's growth. Moreover, the spending of the thousands of visitors, in addition to the expenditures made by the event organizers in hosting the event, resulted in a considerable economic impact for Digby and the Province of Nova Scotia.

This report provides an estimate of the economic impacts associated with the 2011 edition of the Digby Wharf Rat Rally as reported by the Canadian Sport Tourism Alliances (CSTA's) Sport Tourism Economic Assessment Model – Professional Version (STEAM-PRO).<sup>1</sup> Information about the visitors and their spending was developed through the use of an on-site survey collecting information from the event participants and spectators, along with additional information from the event organizers. The remainder of the document details the visitor and operational expenditures that were used to generate the economic impact assessment results, which are reported in the final section.

---

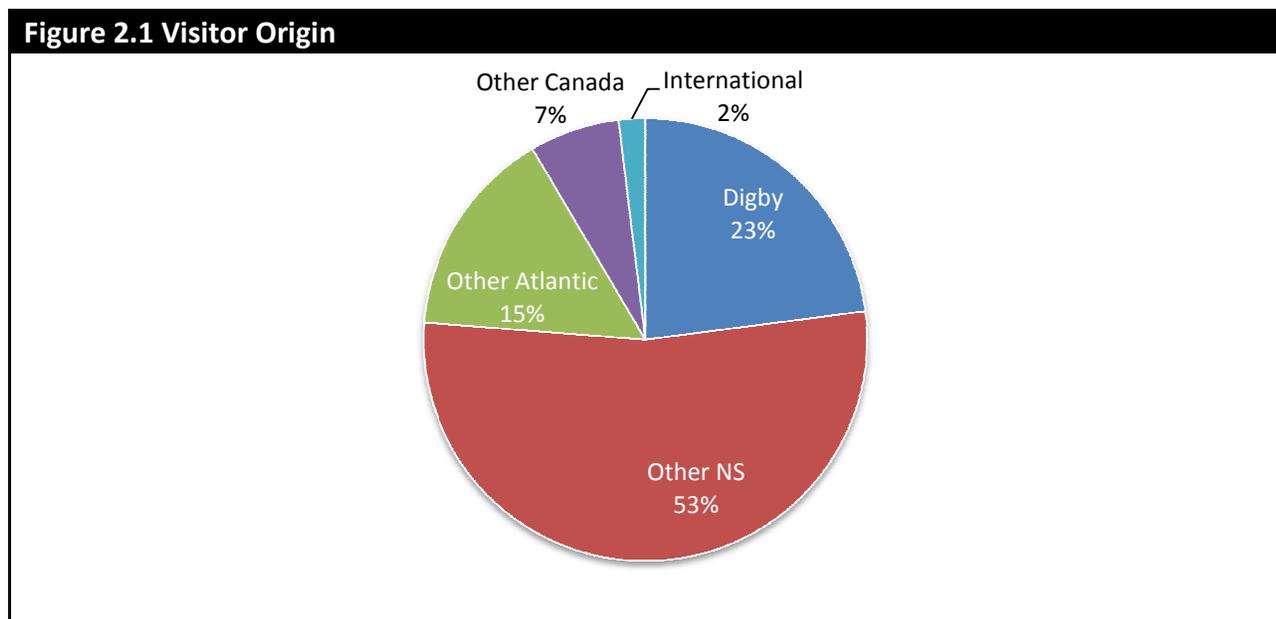
<sup>1</sup>The Canadian Sport Tourism Alliance's (CSTA's) **Sport Tourism Economic Assessment Model**, Professional version (STEAM PRO) was used to generate the economic impact estimates detailed in this report. STEAM PRO, which was developed in 2006, is a model that has been designed to incorporate the results of primary data collected from event visitors and the budget / capital expenditures of event organizers and others to prepare economic impact assessments. The model is based on the Canadian Tourism Research Institute's (CTRI - a branch of The Conference Board of Canada) TEAM model, which is the most widely used tourism economic impact model in Canada. The results of STEAM PRO are fully consistent with the CSTA's STEAM model. A more detailed description of STEAM PRO is contained within Appendix 1.

## 2.0 Survey Results

The on-site research was conducted in partnership with Events Nova Scotia, who developed a paper based survey that was completed by 1028 people. Of this total, 147 surveys (14%) were discarded as they were either filled out incorrectly or did not contain key information. The survey included information about the visitors' length of stay, travel party composition and expenditures in Digby.

### Survey Results

The survey found that people travelled extensively in order to attend the Wharf Rat Rally, as illustrated in Figure 2.1



The event organizers estimated that there were a total of 22,500 motorbike visits at the 2011 Wharf Rat Rally. With the average bike staying for 3.1 nights in Digby, there were 7,227 unique motor bikes who participated in the rally. With 1.1 people per bike, total rider attendance was 7,950. The survey found that there was an additional 1,610 people who attended the Wharf Rat Rally in their car, giving a total attendance of 9,559 people, of which 7,431 came from outside of Digby (Table 2.1).

Survey respondents were asked a number of other questions about their trip to Digby. As noted, the average visitor spent 3.1 nights in Digby as part of their trip, with trip lengths ranging from 2.1 nights for other Nova Scotia residents to 4.5 nights for Canadian residents from outside of Atlantic Canada

2011 Wharf Rat Rally – Economic Impact Assessment

Origin	Bikes	Riders	Non-Riders	Total
Digby	1,659	1,825	304	2,129
Other NS	3,851	4,236	1,018	5,254
Atlantic	1,106	1,216	149	1,365
Other Can	474	521	113	634
International	138	152	25	177
<b>Total</b>	<b>7,227</b>	<b>7,950</b>	<b>1,609</b>	<b>9,559</b>
<b>Visitors</b>	<b>5,569</b>	<b>6,125</b>	<b>1,305</b>	<b>7,431</b>

**Table 2.2 – Survey Results**

Origin	Average Party Size	Nights in Digby
Digby	2.4	3.1
Other NS	2.9	2.8
Atlantic	3.2	3.6
Other Can	4.0	4.5
International	5.1	4.0
<b>Total</b>	<b>3.0</b>	<b>3.1</b>

Visitors to Digby were also asked how much they spent in the community over the course of their trip, with the average out of town party spending \$468 per person over the duration of their trip. For the purposes of the spending analysis, expenditures made by Digby residents have been excluded as they do not represent new money being spent in the local economy. Table 2.3 corresponds to the spending made per person while Table 2.4 refers to the aggregate spending by all visitors. In total, spending made by visitors in Digby as a part of the Wharf Rat Rally totalled \$3.5 million.

**Table 2.3 Average Spending Per Person**

	<b>Sameday</b>	<b>Other N.S.</b>	<b>Other Atlantic Canada</b>	<b>Other Canada</b>	<b>Inter-national</b>	<b>Average</b>
Accommodation	\$3.57	\$132.48	\$217.74	\$212.12	\$187.36	\$124.36
Concession	\$11.51	\$35.04	\$28.83	\$78.92	\$12.27	\$32.35
Restaurant	\$36.64	\$106.60	\$143.50	\$216.63	\$89.20	\$104.61
Grocery	\$6.36	\$41.46	\$40.22	\$73.64	\$26.91	\$36.64
Rec & Entertainment	\$1.38	\$10.11	\$13.71	\$56.67	\$8.18	\$13.20
WRR Merchandise	\$58.14	\$61.86	\$73.27	\$101.09	\$47.73	\$67.71
Shopping	\$18.39	\$27.56	\$42.94	\$305.78	\$21.02	\$57.74
Rental Vehicle	\$0.00	\$0.00	\$0.00	\$1.26	\$13.64	\$0.53
Other Transport	\$0.26	\$0.98	\$5.81	\$15.84	\$15.07	\$3.49
Gas	\$14.04	\$30.66	\$36.09	\$27.60	\$31.59	\$27.62
<b>Average</b>	<b>\$150.29</b>	<b>\$446.77</b>	<b>\$602.12</b>	<b>\$1,089.55</b>	<b>\$452.98</b>	<b>\$468.26</b>

**Table 2.4 Aggregate Spending**

	<b>Sameday</b>	<b>Other N.S.</b>	<b>Other Atlantic Canada</b>	<b>Other Canada</b>	<b>Inter-national</b>	<b>Average</b>
Accommodation	\$5,417	\$500,367	\$297,966	\$130,624	\$28,204	\$962,577
Concession	\$17,485	\$132,357	\$39,455	\$48,599	\$1,847	\$239,744
Restaurant	\$55,658	\$402,634	\$196,377	\$133,399	\$13,428	\$801,496
Grocery	\$9,662	\$156,606	\$55,040	\$45,349	\$4,051	\$270,707
Rec & Entertainment	\$2,103	\$38,185	\$18,762	\$34,896	\$1,232	\$95,177
WRR Merchandise	\$88,318	\$233,657	\$100,264	\$62,252	\$7,184	\$491,675
Shopping	\$27,927	\$104,084	\$58,760	\$188,301	\$3,165	\$382,235
Rental Vehicle	\$0	\$6	\$6	\$778	\$2,053	\$2,842
Other Transport	\$391	\$3,698	\$7,956	\$9,753	\$2,268	\$24,066
Gas	\$21,326	\$115,818	\$49,387	\$16,997	\$4,755	\$208,283
<b>Average</b>	<b>\$228,286</b>	<b>\$1,687,413</b>	<b>\$823,971</b>	<b>\$670,947</b>	<b>\$68,186</b>	<b>\$3,478,803</b>

### 3.0 Operations

Organizing and hosting the 2011 Wharf Rat Rally required considerable expenditures on the part of the event organizers, including: entertainment, communications (i.e. advertising, printing, signage), event production (i.e. venue rental, contractors, and special events) and administration (i.e. salaries, rent, dues, etc). In total, operational expenditures reached \$250,000.<sup>2</sup>

### 4.0 Economic Impact Results

The combined spending of the participants and spectators at the 2011 Wharf Rat Rally, plus the operational expenditures made by the organizers of the event reached \$3.7 million and generated a net economic activity (GDP) of \$4.2 million throughout the Province of Nova Scotia, with \$2.5 million occurring in Digby. Furthermore, the spending associated with the event supported \$3.0 million in wages and salaries in the Province through the support of 138 jobs, of which 120 jobs were supported in Digby.<sup>3</sup> Overall, the event generated \$8.9 million in economic activity for the Province of Nova Scotia, of which \$5.7 million occurred in Digby.

Considerable tax revenues were also produced by the event, totalling \$1.9 million. The event supported federal government tax revenues of \$873,000 while an additional \$829,000 in taxes accrued to the Province of Nova Scotia. Moreover, \$241,000 in taxes was supported in municipalities throughout the province, of which \$187,000 was in Digby.

---

<sup>2</sup> Note that prize money paid by the event organizers were excluded as these funds were not necessarily spent in Digby.

<sup>3</sup> Jobs reported in this study refer to the number of jobs, vs. full time equivalent (FTE: two people working half time would represent two jobs or one FTE). Additionally, the direct employment effects are generally extra shifts or overtime for existing workers rather than new employment.

## 2011 Wharf Rat Rally – Economic Impact Assessment

### Economic Impact Results

	Total Nova Scotia		Digby		Rest of Nova Scotia	
Initial Expenditure		\$3,723,213		\$3,723,213		\$0
<b>Gross Domestic Product</b>						
Direct Impact		\$1,479,965		\$1,479,965		\$0
Indirect Impact		\$1,346,678		\$389,157		\$957,521
Induced Impact		\$1,366,353		\$667,149		\$699,204
Total Impact		\$4,192,996		\$2,536,271		\$1,656,725
<b>Industry Output</b>						
Direct & Indirect		\$6,041,251		\$4,366,408		\$1,674,843
Induced Impact		\$2,831,714		\$1,376,308		\$1,455,405
Total Impact		\$8,872,964		\$5,742,716		\$3,130,248
<b>Wages &amp; Salaries</b>						
Direct Impact		\$1,113,357		\$1,113,357		\$0
Indirect Impact		\$920,780		\$431,343		\$489,438
Induced Impact		\$972,631		\$493,886		\$478,745
Total Impact		\$3,006,768		\$2,038,585		\$968,182
<b>Employment (Full-year jobs)</b>						
Direct Impact <sup>4</sup>		78.1		78.1		0.0
Indirect Impact		27.3		15.8		11.5
Induced Impact		32.6		23.8		8.8
Total Impact		138.0		117.7		20.3
<b>Taxes (Total)</b>						
Federal		\$873,176		\$587,710		\$285,466
Provincial		\$829,725		\$591,919		\$237,806
Municipal		\$240,960		\$187,064		\$53,896
Total		\$1,943,860		\$1,366,693		\$577,168

<sup>4</sup> Direct employment impact is generally extra shifts or overtime for existing workers rather than new employment.

## Appendix 1: Economic Impact Methodology – STEAM

### *Background*

Briefly, the purpose of STEAM is to calculate both the provincial and regional economic impacts of sport tourism. The economic impacts are calculated on the basis of capital and operating expenditures on goods, services and employee salaries, and on the basis of tourist spending within a designated tourism sector. The elements used to measure the economic impacts are Gross Domestic Product (GDP), Employment, Taxes, Industry Output and Imports. STEAM measures the direct, indirect & induced effects for each of these elements.

### *Technical Description of the Impact Methodology used by STEAM*

STEAM and many other impact studies are based on input-output techniques. Input-output models involve the use of coefficients that are based on economic or business linkages. These linkages trace how tourist expenditures or business operations filter through the economy. In turn, the coefficients applied are then used to quantify how tourism related activity in a particular region generates employment, taxes, income, etc. The input-output approach indicates not only the direct and indirect impact of tourism, but can also indicate the induced effect resulting from the re-spending of wages and salaries generated.

All impacts generated by the model are given at the direct impact stage (i.e. the "front line" businesses impacted by tourism expenditures), indirect impact stage (i.e. those industries which supply commodities and/or services to the "front line" businesses) and the induced impact stage (induced consumption attributable to the wages and salaries generated from both the direct and indirect impact). In this sense, the model is closed with respect to wages. Imports are also determined within the model, so the model is closed with respect to imports. Exports are not endogenized (i.e. additional exports are not assumed with the induced impact) which consequently generates more conservative impacts. Another assumption of the model, which leads to more conservative impacts, is that not all commodities and/or services purchased are assumed to have at least one stage of production within the province. This assumption is crucial for souvenirs, gasoline and other commodities.

Taxes and employment are key economic considerations. However, as these concepts fall outside of the System of National Account Provincial input/output tables, their impacts must be calculated separately. Current tax and employment data for each region is used to econometrically estimate a series of coefficients and rates. These coefficients and/or rates are then applied to measures determined within the input-output framework of the model, yielding the final tax and employment figures.

### *Regional (Sub-Provincial) Impact Methodology*

The method used to simulate intraprovincial commodity flows and ultimately regional impacts follows directly from regional economic principles. The principle is referred to as the "gravity model". Basically the "gravity model" states that the required commodity (& service) inputs will be "recruited" in a manner that takes into consideration economies of scale (i.e. production costs), transportation costs and the availability of specific industries. Economies of scale (i.e. lower production costs) are positively correlated with input demand while greater transportation costs are negatively correlated with input demand. Fulfilling that demand from other provincial regions is contingent on the fact that the specific industry does actually exist. An advantage of using the "gravity model" to simulate intraprovincial commodity flows is that as the industrial composition of the labour force changes, or as new industries appear for the first time in specific regions, the share of production between the various sub-provincial regions also changes.

By following this principle of the gravity model, all sub-provincial regions of a province are assigned a coefficient for their relative economies of scale in each industry (using the latest industry labour force measures) as well as a coefficient to represent the transportation cost involved to get each industry's output to the designated market. One variation on the "gravity model" principle involves the estimation of "relative trade distances" by incorporating different "weights" for different modes of transport. Once these coefficients are generated for all regions and over all industries, a measure of sensitivity (mostly relative to price, but in the case of service industries also to a "local preference criteria") is then applied to all commodities. Another variation on the strict "gravity model" approach is that the measure of sensitivity is adjusted by varying the distance exponent (which in the basic "gravity model" is 2) based on the commodity or service required. The variation in distance exponents revolve, principally, around two research hypotheses: (1) the greater the proportion of total shipments from the largest producer (or shipper), the lower the exponent, and (2) the greater the proportion of total flow which is local (intraregional), the higher the exponent.

## Appendix 2: Glossary of Terms Used by STEAM

**Initial Expenditure** - This figure indicates the amount of initial expenditures or revenue used in the analysis. This heading indicates not only the total magnitude of the spending but also the region in which it was spent (thus establishing the "impact" region).

**Direct Impact** - Relates ONLY to the impact on "front-line" businesses. These are businesses that initially receive the operating revenue or tourist expenditures for the project under analysis. From a business perspective, this impact is limited only to that particular business or group of businesses involved. From a tourist spending perspective, this can include all businesses such as hotels, restaurants, retail stores, transportation carriers, attraction facilities and so forth.

**Indirect Impact** - Refers to the impacts resulting from all intermediate rounds of production in the supply of goods and services to industry sectors identified in the direct impact phase. An example of this would be the supply and production of bed sheets to a hotel.

**Induced Impact** - These impacts are generated as a result of spending by employees (in the form of consumer spending) and businesses (in the form of investment) that benefited either directly or indirectly from the initial expenditures under analysis. An example of induced consumer spending would be the impacts generated by hotel employees on typical consumer items such as groceries, shoes, cameras, etc. An example of induced business investment would be the impacts generated by the spending of retained earnings, attributable to the expenditures under analysis, on machinery and equipment.

**Gross Domestic Product (GDP)** - This figure represents the total value of production of goods and services in the economy resulting from the initial expenditure under analysis (valued at market prices).

**NOTE:** The multiplier (A), Total/Initial, represents the total (direct, indirect and induced) impact on GDP for every dollar of direct GDP. This is a measure of the level of spin-off activity generated as a result of a particular project. For instance if this multiplier is 1.5 then this implies that for every dollar of GDP directly generated by "front-line" tourism businesses an additional \$0.50 of GDP is generated in spin-off activity (e.g. suppliers).

The multiplier (B), Total/\$ Expenditure, represent the total (direct, indirect and induced) impact on GDP for every dollar of expenditure (or revenue from a business perspective). This is a measure of how effective project related expenditures translate into GDP for the province (or region). Depending upon the level of expenditures, this multiplier ultimately determines the overall level of net economic activity associated with the project. To take an example, if this

multiplier is 1.0, this means that for every dollar of expenditure, one dollar of total GDP is generated. The magnitude of this multiplier is influenced by the level of withdrawals, or imports, necessary to sustain both production and final demand requirements. The less capable a region or province is at fulfilling all necessary production and final demand requirements, all things being equal, the lower the eventual economic impact will be.

**GDP (at factor cost)** - This figure represents the total value of production of goods and services produced by industries resulting from the factors of production. The distinction to GDP (at market prices) is that GDP (at factor cost) is less by the amount of indirect taxes plus subsidies.

**Wages & Salaries** - This figure represents the amount of wages and salaries generated by the initial expenditure. This information is broken down by the direct, indirect and induced impacts.

**Employment** - Depending upon the selection of employment units (person-years or equivalent full-year jobs) these figures represent the employment generated by the initial expenditure. These figures distinguish between the direct, indirect and induced impact. “Equivalent Full-Year Jobs”, if selected, include both part-time and full-time work in ratios consistent with the specific industries.

**NOTE:** The multiplier (B) is analogous to Multiplier (B) described earlier with the exception being that employment values are represented per \$1,000,000 of spending rather than per dollar of spending. This is done to alleviate the problem of comparing very small numbers that would be generated using the traditional notion of a multiplier (i.e. employment per dollar of initial expenditure).

**Industry Output** - These figures represent the direct & indirect and total impact (including induced impacts) on industry output generated by the initial tourism expenditure. It should be noted that the industry output measure represents the **sum** total of all economic activity that has taken place and consequently involve double counting on the part of the intermediate production phase. Since the Gross Domestic Product (GDP) figure includes only the **net** total of all economic activity (i.e. considers only the value added), the industry output measure will always exceed or at least equal the value of GDP.

**Taxes** - These figures represent the amount of taxes contributed to municipal, provincial and federal levels of government relating to the project under analysis. This information is broken down by the direct, indirect and induced impacts.

**Imports** - These figures indicate the direct, indirect and induced final demand and intermediate production requirements for imports both outside the province and internationally.