

DOWN EAST SUNRISE TRAIL ECONOMIC IMPACT ASSESSMENT



Prepared by the:
Hancock County Planning Commission
8/20/2016



This study was implemented with generous support from the Sunrise Trail Coalition, Davis Conservation Foundation, Maine Bureau of Parks and Lands and Maine Department of Transportation.

Contents

Executive Summary	1
Historical Perspective	2
Location Analysis	3
Down East Sunrise Trail Map	4
Demographic Analysis	7
Trail User Counts	10
Trail User Count Methodology.....	10
Trail Use by Month.....	12
Trail Use by Day of Week	13
Trail Use by Time of Day	15
Trail User Survey	17
User Survey Methodology	17
How do people find out about the Sunrise Trail?	19
Who uses the Down East Sunrise Trail?	19
Where do the users live and where do they use the trail?.....	20
How do users travel along the trail?	21
What do trail users like to do along the way?	23
User Opinions: Trail Maintenance, Security and Cleanliness	24
Economic Impact of the Down East Sunrise Trail.....	27
Spending on Supplies.....	27
Spending on Food and Rentals	30
Spending on Lodging	31
Total Economic Impact	33
Conclusions.....	35
Appendix A - Trail Counter Data	36
Appendix B - Down East Sunrise Trail User Survey.....	37
References:.....	38

Executive Summary

The Down East Sunrise Trail (DEST) was inaugurated in sections starting in 2009 for multiple users including bicyclists, walkers, ATV riders, snowmobilers and cross country skiers. The designated trail soon reached 85 miles and formed an east-west corridor to which numerous other snowmobile and ATV trails would eventually connect. In 2016 an additional two-mile section is being constructed to connect the trail to the urban center of Ellsworth, Maine. An undesignated section of trail also connects with Route 1 in Perry, Maine, bringing the useable length to over 90 miles.

This report combines several streams of data to assess the economic impacts of the Sunrise Trail between 2013 and 2015. Direct, indirect and induced economic impacts have been significant and positive.

- A trail-count camera identified more than 6,000 trips by individuals as users crossed the checkpoint at the western gateway in Washington Junction in the town of Hancock during 9 months in 2014 and 2015.
- Camera counts provide a very detailed map of time of travel, mode, date, day of week, season, weather conditions, persons per vehicle and more.
- Two-hundred ten respondents to a user survey at trail intercepts and online indicated spending an average of \$31.04 per day on food, \$22.56 per day on lodging as well as major purchases of equipment such as snowmobiles, ATVs and bicycles.
- Total direct economic impacts of the trail are estimated to be approximately \$236,000 over the ten month study period (excluding November and December). Indirect and induced impacts may match the direct benefits, doubling the overall impact.
- Overall satisfaction with the DEST is high, but bicyclists were more likely to be critical of trail surface conditions.
- Users provided a wealth of comments about their experiences and attitudes about the trail.

User counts and economic impacts in this study are conservative. This study concentrates on the busiest trail head location, but a great deal of activity occurs on other sections. Future research should include additional locations for cameras and trail user intercept surveys.



Historical Perspective

The Calais Branch railroad corridor is 127 miles long and connects Brewer to Calais in Downeast Maine. Construction of the corridor began in 1835 in Calais, but was abandoned in 1841. Work began again in 1852, but did not reach Washington Junction in Hancock until 1893. It became formally known as the Calais Branch in 1911. Passenger service declined and was terminated in 1957. Freight service also declined until it was discontinued in 1987 when the State of Maine acquired the tracks to preserve the corridor and right of way.



After numerous studies, MaineDOT encouraged the Legislature to dismantle tracks between Washington Junction in Hancock and Ayers Junction in Pembroke for provisional use of the right of way as the Down East Sunrise Trail. Tracks remain from Brewer to Washington Junction, a portion of which is employed as an excursion rail. Tracks remain from Ayers Junction to Calais, but are largely out of use.

The Down East Sunrise Trail was inaugurated in sections starting in 2009 for multiple users including bicyclists, walkers, ATV riders, snowmobilers and cross country skiers. The designated trail soon reached 85 miles and formed an east-west corridor to which numerous other snowmobile and ATV trails eventually connected. In 2016 an additional two-mile section is being constructed to connect the trail to the urban center of Ellsworth, Maine. An undesignated section of trail also connects with Route 1 in Perry, Maine, bringing the useable length to over 90 miles.



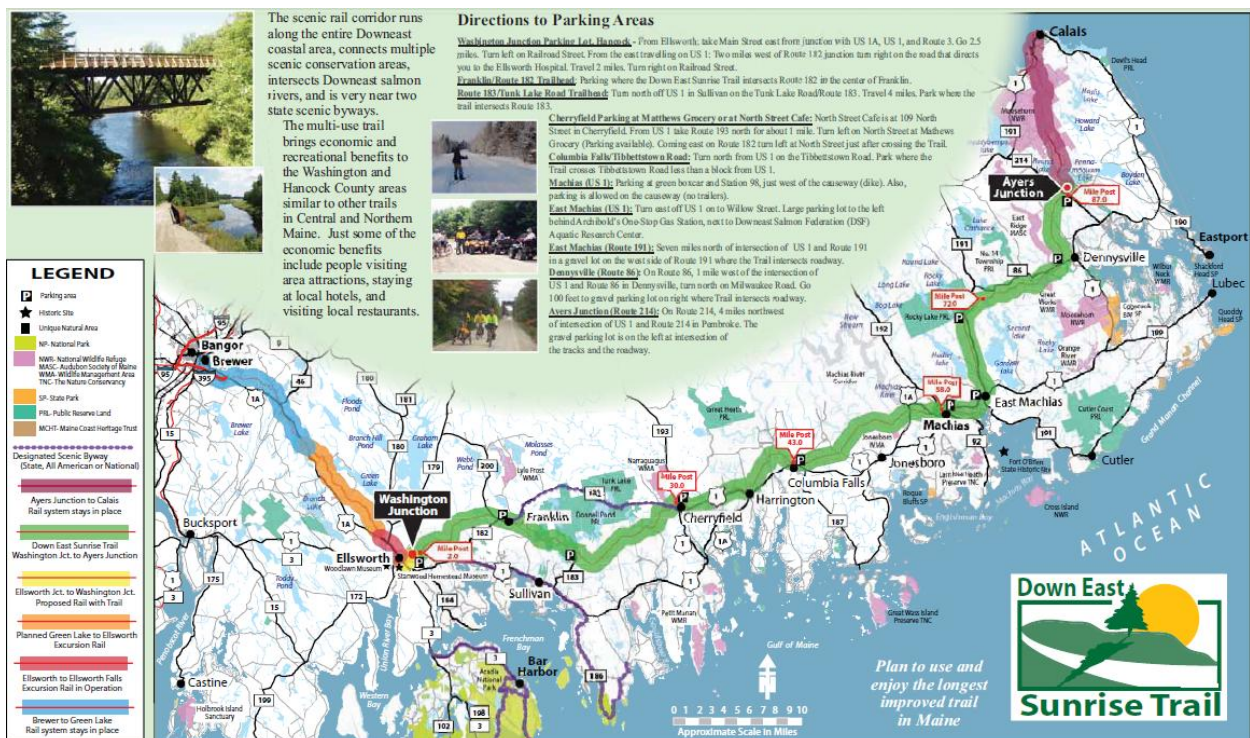
Location Analysis

The context will be established very briefly with a summary of the geographic context of Washington and Hancock Counties. Data are presented in tables, maps and GIS analyses. Secondary data including the US Census and data from the Maine Office of GIS will be employed.

The Calais Branch Rail was originally built to carry passengers and freight between maritime Canada and Bangor, also connecting coastal Washington and Hancock Counties. Larger population centers include Calais, Machias, Ellsworth, Brewer and Bangor. The converted 82 mile portion follows the downeast coast, until this year only reaching Machias as a population center. Completion of the 2 mile extension in 2016 will enable trail users to reach the center of Ellsworth.

The balance of the trail passes through forests, fresh water marshes, and small rivers, and offers occasional glimpses of blueberry barrens. As a rail line, the trail topography is flat, with inclines.

Most of the land on either side of the trail is held privately. The trail also touches on public lands including the Donnell Pond-Tunk Lake, Rocky Lake, and Great Works. The trail passes numerous municipal parks including Cherryfield's Cable Pool and the Machias-East Machias causeway.



Early Version of the Trail Map: Excursion Rail Operates Close to Ellsworth

Down East Sunrise Trail Map

Section 1: Ellsworth to Cherryfield



Washington Junction to Cherryfield = 28 miles

The Down East Sunrise Trail (DEST) takes riders off-road on a gentle journey through a natural landscape of forests, vast marshes, mountain views, and through habitat for Maine's iconic moose, beaver, eagles, osprey, waterfowl, wild turkeys, and white-tailed deer. 85 miles and growing, the DEST is the longest off-road section of the East Coast Greenway.

FMI: www.sunrisetrail.org
www.greenway.org
www.parksandlands.com



Washington Junction

Location: Railroad Siding Street, Ellsworth

Parking: Large off-street lot

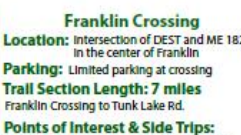
Trail Section Length: 9 miles

Washington Junction to Franklin

Points of Interest & Side Trips:

Restored rail cars by Down East Heritage Rail at Washington Junction. Wildlife-watching opportunities on this section of the trail and most impressively near wetlands. Watch out for deer crossing the trail. A side trip to Franklin Memorial Park is a nice stop to take in local history and have a picnic.

Lamoine State Park and Acadia National Park offer additional cycling & hiking adventures.



Franklin Crossing

Location: Intersection of DEST and ME 182 in the center of Franklin

Parking: Limited parking at crossing

Trail Section Length: 7 miles

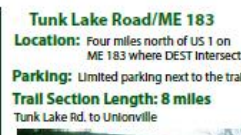
Franklin Crossing to Tunk Lake Rd.

Points of Interest & Side Trips:

Schoodic Bog and the view of Schoodic Mt. is stunning, especially in autumn. A picnic table awaits you. Take North End Rd. from trail to Schoodic Beach Rd. for hiking on Schoodic and Black Mts. and camping and day use on Schoodic Beach. NOTE: Trailhead is a 1/2-mile walk from beach. The Blackwoods Scenic Byway/ME 182 provides access to Tunk Mt. hiking trails and Tunk Lake.



Schoodic Mountain



Tunk Lake Road/ME 183

Location: Four miles north of US 1 on ME 183 where DEST intersects

Parking: Limited parking next to the trail.

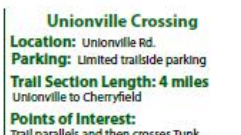
Trail Section Length: 8 miles

Tunk Lake Rd. to Unionville

Points of Interest & Side Trips:

Trail passes through remote forestland and crosses a few logging roads before reaching Unionville. Hike, swim, and camp at Donnell Pond Public Lands. From trail take North End Rd or ME 183. The Schoodic National Scenic Byway (US 1)

To learn more about the geology of the area, view Maine's Ice Age Trail at <http://iceagetrail.umaine.edu>.



Unionville Crossing

Location: Unionville Rd.

Parking: Limited trailside parking

Trail Section Length: 4 miles

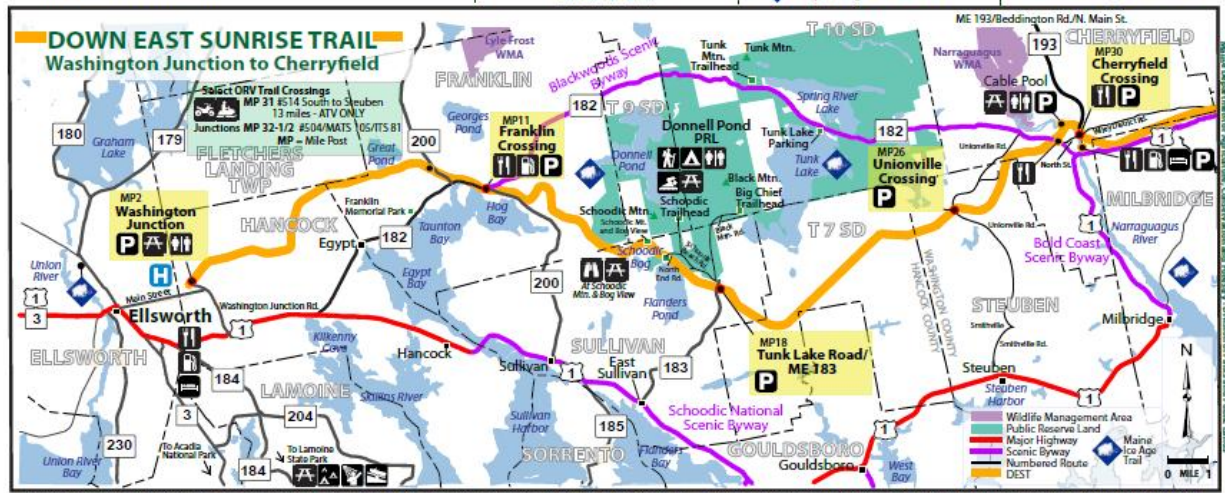
Unionville to Cherryfield

Points of Interest:

Trail parallels and then crosses Tunk Stream as it leaves Unionville. It intersects the eastern end of the Blackwoods Scenic Byway/ME 182, then crosses the Narraguagus River at Cable Pool in Cherryfield via an early 20th-century steel trestle bridge. Cable Pool, now a town park, is a historically significant salmon pool. It makes a great picnic spot.



Steel trestle bridge at Cable Pool



While the entire length of the DEST is rural and at times remote from any population, the western gateway is relatively populated. Washington Junction is the center of excursion rail activity and is an attraction for train enthusiasts. This end is also one of the most active sections of trail, particularly the first few miles that are popular for walking, bicycling and cross country skiing. The first two miles east of Washington Junction have a superior trail surface rich in crushed concrete, ideal for bicycling. Nearby facilities include a large parking area, a snowmobile club house and a business that is renting ATVs.

Users departing from Washington Junction are immediately into the woods. Other than the occasional dirt road crossing, travelers don't encounter much sign of population before reaching Franklin, mile post 11. Franklin offers visitors a small general store that serves meals and sells gasoline. There are small municipal parks, seasonal lodging and recreation areas. Franklin permits ATVs on many local roads.

The next section is also remote, but fortuitously crosses Schoodic Bog while passing at the foot of Schoodic Mountain providing a dramatic scenic backdrop. The trail continues to Cherryfield (MP 30) that offers a general store, seasonal lodging and local attractions like Cable Pool Park.

Section 2: Cherryfield to Machias



The Down East Sunrise Trail (DEST) takes riders off-road through a variety of landscapes providing scenic views of coastal mountains, forests, open wetlands, and blueberry barrens. Along the way, 28 bridges span tree-lined streams and salmon rivers.

85 miles and growing, the DEST is the longest off-road section of the East Coast Greenway.

FMI: www.sunrisetrail.org
www.greenway.org
www.parksandlands.com

Cherryfield Crossing



Location: Trail crosses ME 193 in Cherryfield.

Parking: At North St. - North St. intersects ME 193 about 1 mile north of US 1, and 1/4 mile south of the DEST/ME 193 crossing.

Trail Section Length: 7 miles
 Cherryfield to Harrington

Points of Interest & Side Trips:

Trail skirts downtown Cherryfield's historic district and then parallels US1 for almost 3 miles before crossing the Harrington River. A side trip to the historic district for the history and cafes makes for a fun lunch stop. To learn more about the geology of the area view Maine's Ice Age Trail at <http://iceagetrail.umaine.edu>.

Harrington and Columbia Falls Crossings

Location: Trail crosses North St. just north of Harrington, enters Columbia Falls at Tibbetstown & Centerville Rds.

Parking: Limited at Harrington and Columbia Falls Crossings. Summer and weekend parking at Narraguagus High School, Harrington.

Trail Section Length: 10 miles
 Harrington Crossing to Columbia Falls = 6 miles
 Columbia Falls to Jonesboro Station = 4 miles

Points of Interest & Side Trips:

Pass by blueberry barrens and the Gallison Memorial Library. Pleasant River before the trail becomes semi-remote beyond Columbia Falls. The Wild Salmon Resource Center, Pleasant River Community Forest, Forest Hills Cemetery, Gallison Library, and Ruggles House & Garden are great side trips. A country store, 1 mile east of Columbia Falls is known for doughnuts and makes a good lunch and provisions stop.

Jonesboro Station

Location: Trail crosses Station Road northwest of Jonesboro.

Parking: Limited parking next to the trail

Trail Section Length: 8 miles
 Jonesboro Station to Whitneyville Crossing



Points of Interest & Side Trips:
 The trail becomes increasingly remote, crossing the Chandler River, numerous streams, and beaver ponds. It passes by the Jonesboro Wildlife Management Area and provides opportunities for wildlife viewing.

Whitneyville Crossing

Location: Trail crosses ME 1A just south of Whitneyville.

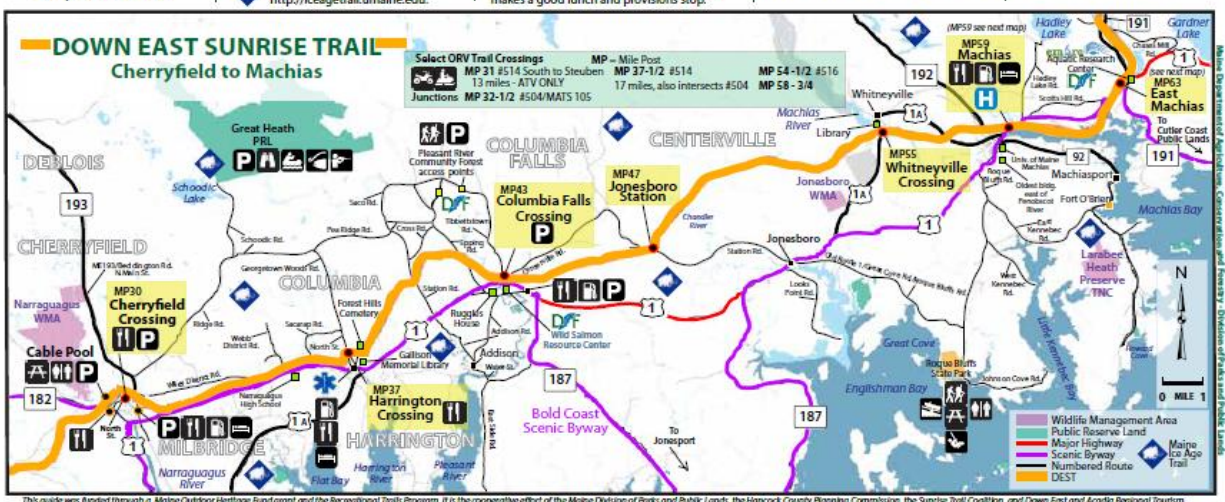
Parking: Limited roadside parking

Trail Section Length: 4 miles
 Whitneyville to Machias

Points of Interest:

An 1868 schoolhouse turned library in 1966 is located close to the trail in Whitneyville.

Leaving Whitneyville, the trail crosses the Machias River and cuts through freshwater marshes and upland forests. Skirting downtown Machias, the trail crosses just two roads in this section before reaching the Machias Station 98.



Departing Cherryfield, the trail passes a small primitive camping area that is free for trail users (MP 32). The trail continues by, but not through Harrington (Restaurants, Fuel) (MP 37), Colombia Falls (Ruggles House Museum) (MP 43), and Whitneyville (confluence of rivers). Travelers are encouraged to leave the trail and make brief side trips into these historic Maine villages. The second section of the trail ends in Machias (MP 58). Machias offers hotels, restaurants, shopping, parks and other amenities. Machias is also the second most popular section of the Sunrise Trail with many local users walking and pedaling.



Section 3: Machias to Ayers Junction



Sunrise Trail
www.sunrisetrail.org



Machias to Ayers Junction = 28 miles

The Down East Sunrise Trail (DEST) takes riders off-road on a journey along the entire Downeast coastal area. Stunning views, wildlife-watching opportunities, and interesting side trips are plentiful for the adventurous. Its compacted gravel surface follows an old railroad bed from Ellsworth to Ayers Junction.

85 miles and growing, the DEST is the longest off-road section of the East Coast Greenway.

FMI: www.sunrisetrail.org
www.greenway.org
www.parksandlands.com



Machias

Location:

Trail crosses US 1 in Machias.

Parking:

At green boxcar and Station 98 just west of causeway (dike) and on causeway (no trailers)

Trail Section Length: 4 miles

Machias to East Machias

Points of Interest & Side Trips:

On this trail section visitors cross over extensive salt marshes and experience beautiful views across the Machias and East Machias rivers. The trail crosses the Machias Dike, where both flea and farmers' markets take place in the summer. A motel, ATM, and nationally famous blueberry pie-making restaurant provide amenities just west of the dike (causeway). Explore town, then consider a side trip to Roque Bluffs State Park for an on-road bike loop ride.

East Machias

Location: Trail crosses US 1 and ME 191.

Parking: Large lot on Willow St. just east of US 1. Limited at ME 191/DEST crossing

Trail Section Length: 7 miles

East Machias to Rocky Lake Crossing

Points of Interest & Side Trips:

This section of the trail runs through fields and forest while paralleling ME 191. The trail intersects the SE corner of Rocky Lake Public Lands, accessed by a multi-use trail, before swinging east toward Dennysville. It is just a short side trip to the boating and camping areas on Rocky Lake's shore.



Visit the East Machias Aquatic Research Center (EMARC) to learn about Maine's fisheries. Cutler Coast Public Lands, Cobscook Bay and Quoddy Head State Parks and lighthouse are recommended side trips.

Rocky Lake Crossing

Location: Trail crosses ME 191 just south of Diamond Match Rd.

Parking: West side of ME 191 at trail

Trail Section Length: 10 miles

Rocky Lake Crossing to Dennysville



Points of Interest & Side Trips:

Forests and numerous ponds and streams define this trail section. Don't miss Rocky Lake Public Lands. Consider a picnic by the smaller Patrick Lake (access off ME 86). Enjoy beautiful views over Harmon's Stream, the East Ridge, Great Works Wildlife Management Area, and the Denny's River. Cobscook Bay & Quoddy Head State Parks are great side trips from Dennysville.

Dennysville/Ayers Junction

Location: Trail crosses Milwaukee Rd. in Dennysville.

Parking: US 1 north to ME 86 west to Milwaukee Rd. north 100-ft. to where trail intersects the road.

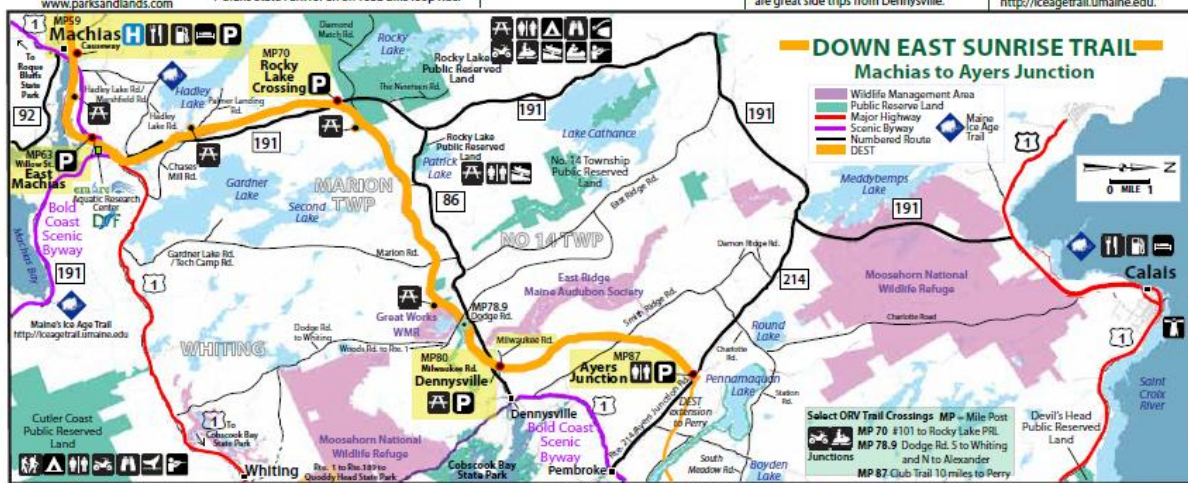
Trail Section Length: 7 miles

Dennysville to Ayers Junction

Points of Interest & Side Trips:

The trail continues through relatively remote forestland until it reaches its eastern terminus at Ayers Junction, just a few miles north of Pembroke.

Add to your adventure by visiting the village of Pembroke, Reversing Falls, Moosehorn National Wildlife Refuge, Gleason Cove Park, Shackford Head State Park, and historic Eastport. View Maine's Ice Age Trail at <http://iceagetrail.umaine.edu>.



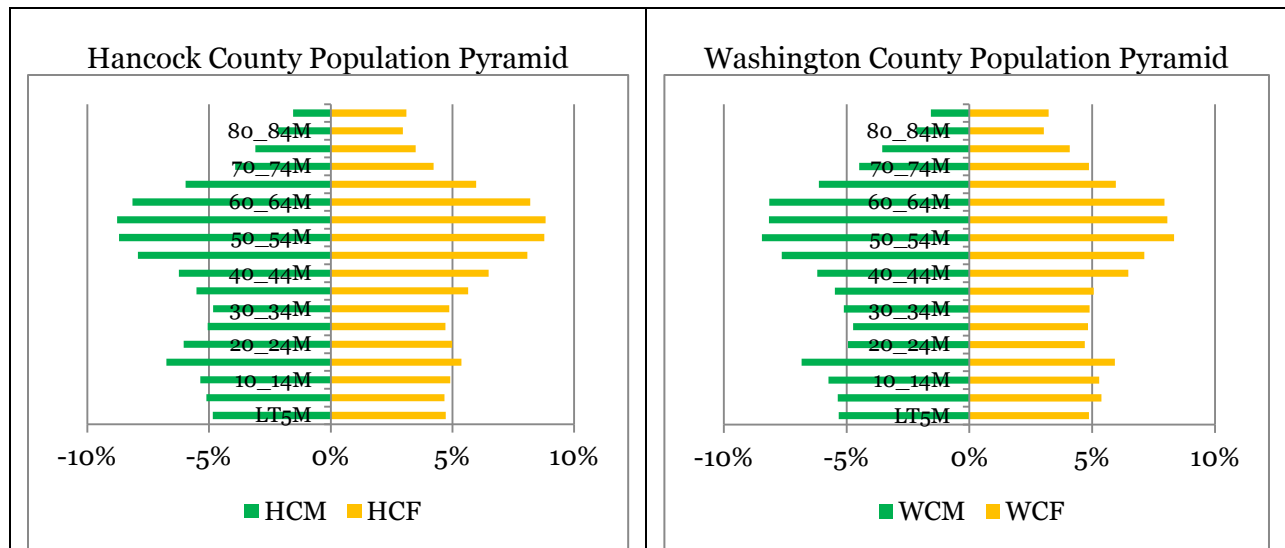
The trail turns north (note change in map orientation) and does not encounter another population center to the end in Ayers Junction. There is one very scenic causeway over brackish water of the tidal Machias River between East Machias and Machias. This is the only coastal view on the Sunrise Trail. There are, however numerous scenic stream and wetland crossings, some of which are popular for sport fishing. The trail passes next to Rocky Lake Public Reserve Land and the Great Works Wildlife Management Area. One local business close to Ayers Junction rents cabins and campsites. Ayers Junction is a parking lot in a remote area. Fortunately a non-designated rail-trail continues to Route 1 in Perry with an onward trail for non-motorized users into Eastport. Efforts are underway to continue the Sunrise Trail to Calais using a combination of rail right of way, Moosehorn Wildlife Preserve and road shoulders.



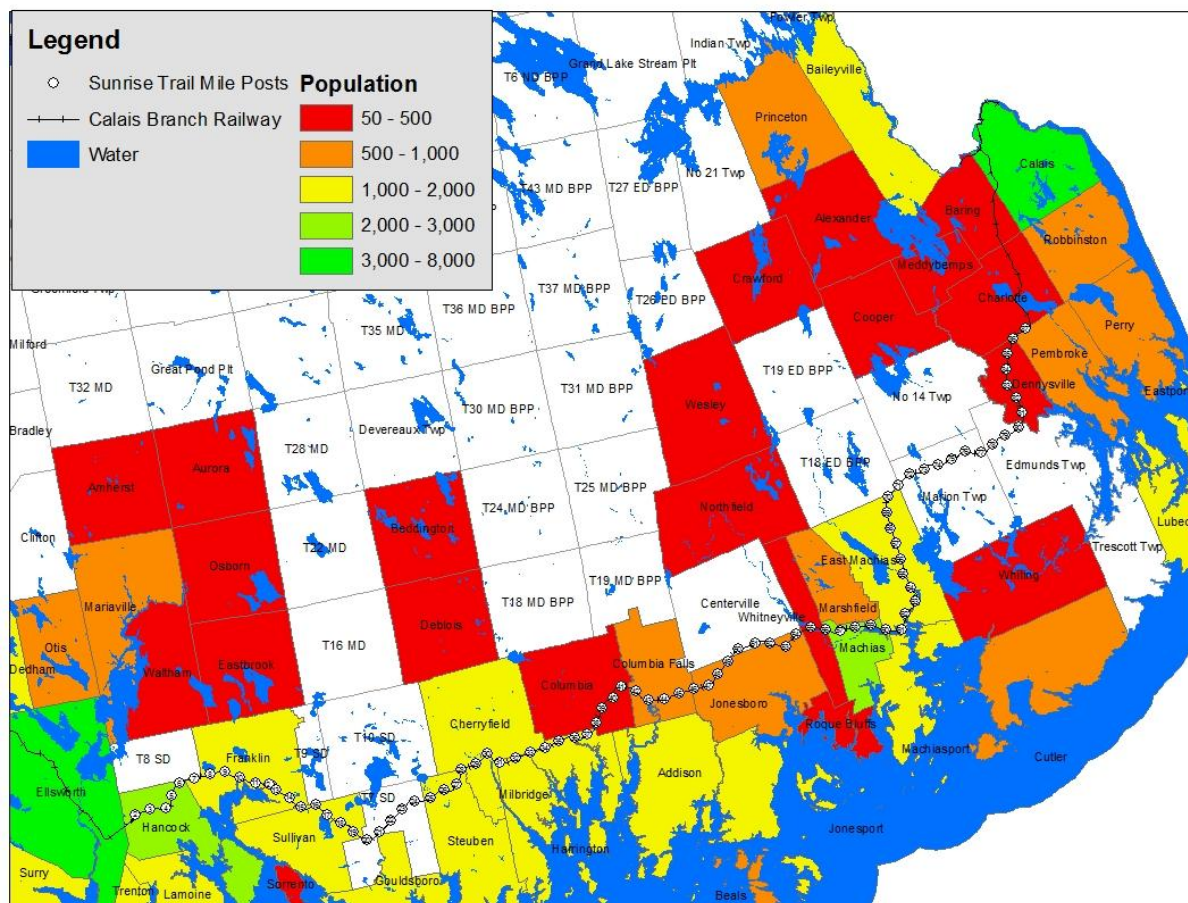
Demographic Analysis

The combined population of Hancock and Washington County was 87,274 in the 2010 Census of Population. Hancock County accounted for 62% of the combined population. Both counties are aging rapidly. Both are at risk from year to year of shrinking as the aging population moves away or passes away faster than they are replaced by births and in-migration. Both counties are dominated by a large proportion of baby boomers and a smaller “echo” of boomer children.

2010 Census Population for State and Down East Counties						
	Maine		Hancock County		Washington County	
Age	Male	Female	Male	Female	Male	Female
<5	35,767	33,753	1,291	1,312	862	812
5_9	38,081	36,035	1,362	1,297	868	895
10_14	40,495	38,518	1,429	1,363	929	881
15_19	45,541	42,769	1,799	1,490	1,105	986
20_24	40,426	39,220	1,608	1,384	800	782
25_29	36,145	36,536	1,345	1,308	767	805
30_34	35,662	36,281	1,288	1,354	828	815
35_39	39,302	40,603	1,469	1,566	886	843
40_44	44,957	46,514	1,663	1,803	1,002	1,079
45_49	52,861	54,758	2,111	2,244	1,237	1,186
50_54	54,129	56,827	2,318	2,438	1,368	1,388
55_59	49,861	52,580	2,338	2,453	1,321	1,343
60_64	44,361	45,299	2,171	2,277	1,318	1,324
65_69	31,432	33,582	1,587	1,658	992	994
70_74	22,234	25,403	1,044	1,174	726	812
75_79	17,338	21,556	826	970	574	681
80_84	12,125	18,274	581	822	351	504
85+	9,339	19,797	411	864	254	538
Total	650,056	678,305	26,641	27,777	16,188	16,668
(Source: US 2010 Census)						

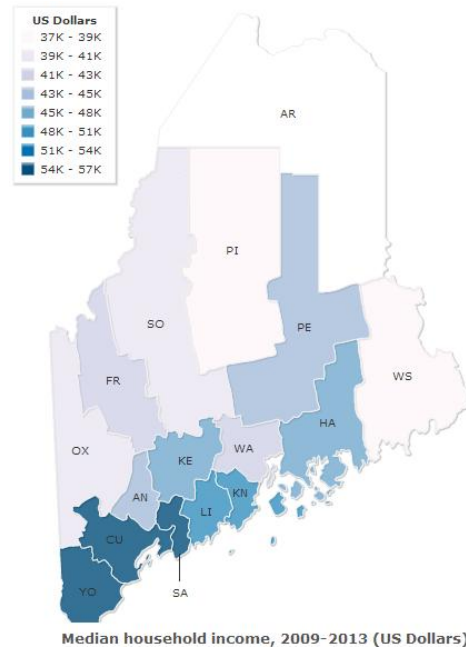


The following map illustrates the very small sizes of most of the towns abutting the Down East Sunrise Trail. The population data for townships are not included here, but these population counts are uniformly low. The largest City, Ellsworth, has a population under 8,000 persons.



The population of Down East Maine is rural and is aging rapidly. Both counties are at risk of additional population losses. The DEST is part of a broader effort to maintain quality of life while creating attractive public infrastructure with an eye to encouraging additional migration into the region.

Median income in Maine is related to location. As one moves from the southern corner of the state income declines, with the lowest medians in the three rim counties Piscataquis, Aroostook and Washington. Eastern and northern portions of Hancock County also have relatively modest incomes, but Mount Desert Island and other western, coastal Hancock County towns increase the median. The DEST passes through areas that are characterized as working landscapes that generate few high paying jobs. One goal of creating the trail has been to attract visitors from higher income areas to devote time and money to recreation on the trail.



Trail User Counts

The following analyses are based on 3,606 photographs that contained useful information. Most of these, as illustrated in the methodology, show one or more trail users on ATVs, snowmobiles, motorcycles, walking, bicycling, skiing, or snowshoeing.

The trail camera photographs provide two units of analysis, vehicles and individuals. Each is useful for measuring economic impact, but people are the basis for purchases of food, lodging and other supplies.

Trail User Count Methodology

Trail use counter data was collected with hidden cameras that snapped photographs when motion was detected. The advantage of using cameras over traditional look or infrared counters is that we are able to determine mode of travel, number of vehicles, number of individuals, direction of travel, time, date, light conditions and a host of contextual values. The drawbacks are also notable, including undercounts of fast-moving ATVs and slow moving walkers, camera failure at one location, battery failure on a few occasions, and a very labor-intensive process of manually tabulating each of several thousand photographs. In the end, the process was successful at collecting representative data for nine months between 2014 and 2015. Samples for three months, June, November and December, were incomplete at the time of this analysis, but will be added when the data are available.

The process of transforming photographs to data is very time consuming. Each photograph is viewed by the coder and data are entered in a database (Excel spreadsheet in this case). Each photograph is coded with location (Latitude, Longitude), date, time, direction of travel, mode of travel, number of vehicles and number of individuals.

With good camera placement most of the photographs are triggered by users, but wind moving tree branches and shadow movements also triggered photographs. We learned that camera placements needed careful testing. In one case a camera was left for several weeks only to discover that it took no user photographs, but many hundreds of images of scenic sunsets.

Another set of considerations of using hidden cameras is the potential impact on privacy and security. The privacy concerns are generally addressed by withholding specific photographs from publication. In most cases individuals are not identifiable. As it happens cameras provided useful information for improving trail security. In particular the camera enabled the trail manager to determine illegal use of the trail by cars and trucks that present a risk to other users. We placed cameras in locations that we hoped would not be visible to users, fearing theft or vandalism. The need to find obscure camera locations had the undesirable consequence that some users were missed by the motion detector.

Sample photographs and a sample data entry page are included below. A comments field was used to tag unusual images such as snow bikes, dog sled teams and wildlife.

Sample Photographs of Down East Sunrise Trail Users

				
Hidden Camera	Motorcycle	Infrared Photograph of Walker in Winter	Three Cross Country Skiers Going West	Tandem Bicycle Heading East
				
Snowmobile Heading West	Dog Sled Team going West	ATV Heading East – Counting riders was challenging	Runner Heading west	

Sample Data Entry Page

Seq	Cam	Lat	Lon	Date	Time	Dir	Mode	NumV	NumP	Cnt	Comments
635	3	44.55627	-68.37661	1/25/2015	15:08	W	S	1	1	1	
636	3	44.55627	-68.37661	1/25/2015	15:38	W	X	0	3	3	
637	3	44.55627	-68.37661	1/25/2015	17:51	E	S	1	1	1	
638	3	44.55627	-68.37661	1/25/2015	18:14	E	G	1	1	1	Groomer
639	3	44.55627	-68.37661	1/26/2015	11:27	E	S	1	1	1	
640	3	44.55627	-68.37661	1/26/2015	13:02	W	S	1	1	1	
641	3	44.55627	-68.37661	1/26/2015	13:28	E	X	0	1	1	
642	3	44.55627	-68.37661	1/26/2015	13:33	E	W	0	1	1	
643	3	44.55627	-68.37661	1/26/2015	13:51	E	B	1	1	1	Snow Bike
644	3	44.55627	-68.37661	1/26/2015	14:38	W	X	0	1	1	
645	3	44.55627	-68.37661	1/26/2015	14:57	W	B	1	1	1	Snow Bike

Codes

Mode		Mode	
A	ATV	H	Snowshoe
B	Bicycle	M	Motorcycle
C	Car or Truck	S	Snowmobile
D	Dust	T	Train
F	Fauna (Deer, etc)	W	Walker
G	Groomer	X	Cross Country Ski
		O	Other
NumV	Number of Vehicles	NumP	Number of People

Trail use in June appears to be divided with the first two weeks being similar to May and the later two weeks being similar to July. In order to smooth some analyses, June is interpolated as the average of May and July ridership values.

The winter of 2014-2015 was probably exceptional with heavy snow and consistent cold temperatures. As a result, trail use, particularly in February and March was very high. Other winters have suffered from significant thaws and extended periods of very limited access.

Process for Weighting Months and Interpolating Values for June						
Month	Persons Counted	Measured Days	Total Days	Weight	Round Trip	Estimated Persons
Jan	185	17	31	1.82	0.525	177
Feb	943	28	28	1.00	0.525	495
Mar	711	31	31	1.00	0.525	373
Apr	163	30	30	1.00	0.525	86
May	635	20	31	1.55	0.525	517
Jun	Assume average of Weighted May and July					452
Jul	320	13	30	2.31	0.525	388
Aug	263	24	31	1.29	0.525	178
Sep	1,092	29	30	1.03	0.525	593
Oct	587	20	31	1.55	0.525	478
Nov						
Dec						
TOTAL	4,899	212				3,737

Additional adjustments were made to the data to compensate for a few missing weeks of data (inverse weights were applied by month) and reduction of total trips by about half to avoid double counting as the same users pass one way, then return the other. We adopted the Rails to Trails Conservancy assumption that a correction of .525 (52.5%) of actual trips will remove double counting for round-trip riders.

Data transformation and analysis was carried out using a variety of software packages including Excel, EpiInfo and ArcGIS. Summary tabulations are included in the appendices. Advance analysis is incorporated in the document.

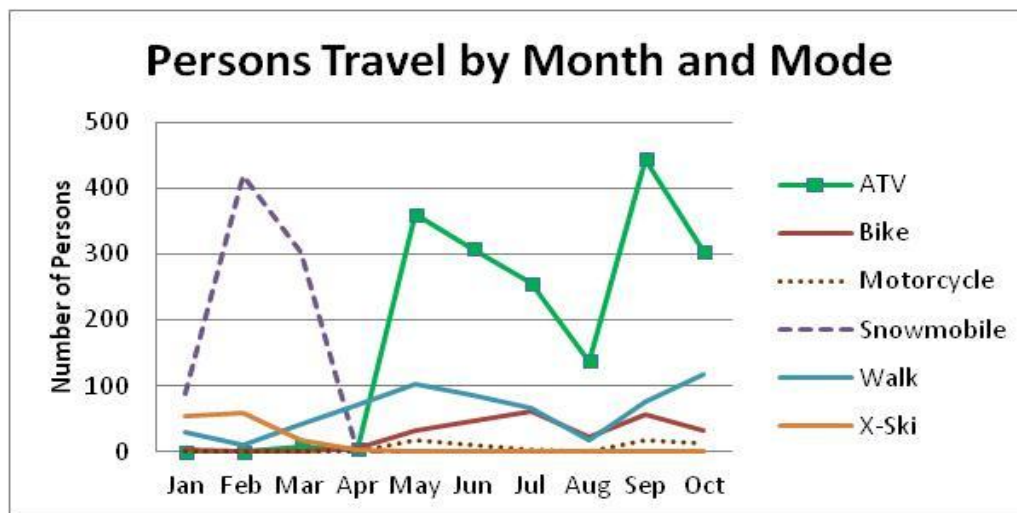
Trail Use by Month

The following table shows the weighted and estimated counts of people that passed our cameras in the months of January through October by mode and month. The graph that follows this table helps to visualize use patterns throughout the 10 months. Three dominant uses in the winter are shown to rise from January to February and decline through March before stopping in April. The trail was closed most of April except for pedestrians during the annual mud season. Thus the only significant users in April are pedestrians. Note that pedestrian use is significant in April and into May. This comes as a surprise given that this is a time when the trail can be patchy with mud and snow and by May the biting black flies emerge. The big advantage for walkers in April is that they have exclusive use of the trail and may be taking advantage of the relative quiet and dust-free environment. Walking hits another peak in October when cooler temperatures and autumn colors may draw visitors. Springtime use is higher than anticipated and suggests that people are ready to get out in nature after a long, snowy winter.

ATV use jumps in May when the trail opens, and surprisingly declines gradually through the summer before reaching a higher peak in September before cold weather triggers another decline. Bicycle use appears to have peaks in July and September.

The big take-away is that the trail is attracting higher levels of all use in the shoulder and winter seasons. These are ideal times for a positive economic impact. Hotels, campgrounds, and restaurants all experience a fall-off in business by October and many struggle to remain open in the winter and spring.

Adjusted Count of Trail Users by Month and Mode of Travel							
Month	ATV	Bike	Motorcycle	Snowmobile	Walk	X-Ski	TOTAL
Jan	0	2	0	87	29	55	172
Feb	0	1	0	419	11	58	489
Mar	9	1	0	302	43	17	371
Apr	3	6	0	1	72	2	84
May	360	33	18	1	103	0	514
Jun	308	47	11	0	85	0	451
Jul	256	62	4	0	67	0	388
Aug	138	23	0	0	17	0	178
Sep	443	55	17	0	75	0	591
Oct	304	33	12	0	117	0	466
TOTAL	1,821	263	62	810	617	132	3,704



Trail Use by Day of Week

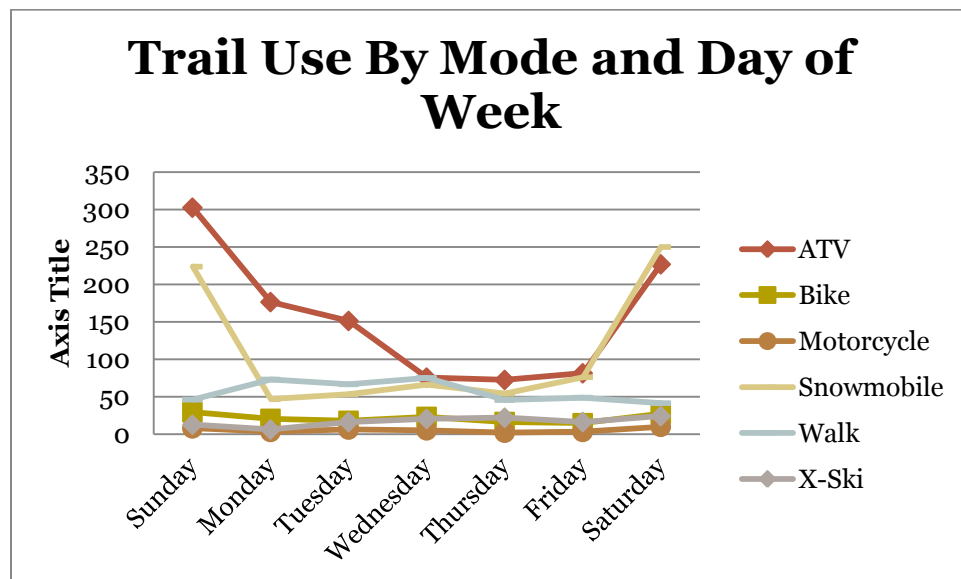
Another consideration for economic impact and management of trail use is the day of week that people choose to travel. This following table uses weighted values, but does not include estimates for June, November nor December. The overall pattern is not surprising. Use is highest on weekends and lowest mid week. Friday use is lower than anticipated, perhaps because it is a travel day. Use on Mondays probably benefits from some busy three-day weekends.

Breaking the data down by mode of travel presents a somewhat nuanced pattern. Snowmobiles are the most concentrated weekend users while ATV use remains higher on Monday and

Tuesday. Motorcycles are the smallest mode, but show a pattern similar to ATVs. Bicycle use shows relatively little variation, though like ATV's; the weekend numbers are higher.

Walkers and cross country skiers, however, appear to be avoiding the trail on weekends, with the slight bumps-up in the middle of the week. This suggests that ATV and Snowmobile use may actually discourage slower, muscle powered use of the trail.

Day of Week	ATV	Bike	Motorcycle	Snowmobile	Walk	X-Ski	TOTAL
Sunday	302	29	8	224	46	13	622
Monday	176	20	3	47	73	6	326
Tuesday	151	18	6	54	67	16	312
Wednesday	76	23	5	66	75	20	266
Thursday	72	16	2	54	46	22	213
Friday	81	15	3	76	49	16	240
Saturday	227	27	10	250	41	24	580
TOTAL	1,086	149	38	770	397	118	2,558



“Saw a bear today. Weekdays have been better for cycling as there are fewer ATVs.”

“I love the fact that the trail is there. I have seen lots of wild animals. I do question the wheelers in spring with the turtles that nest along the trail. Saw lots last year.”



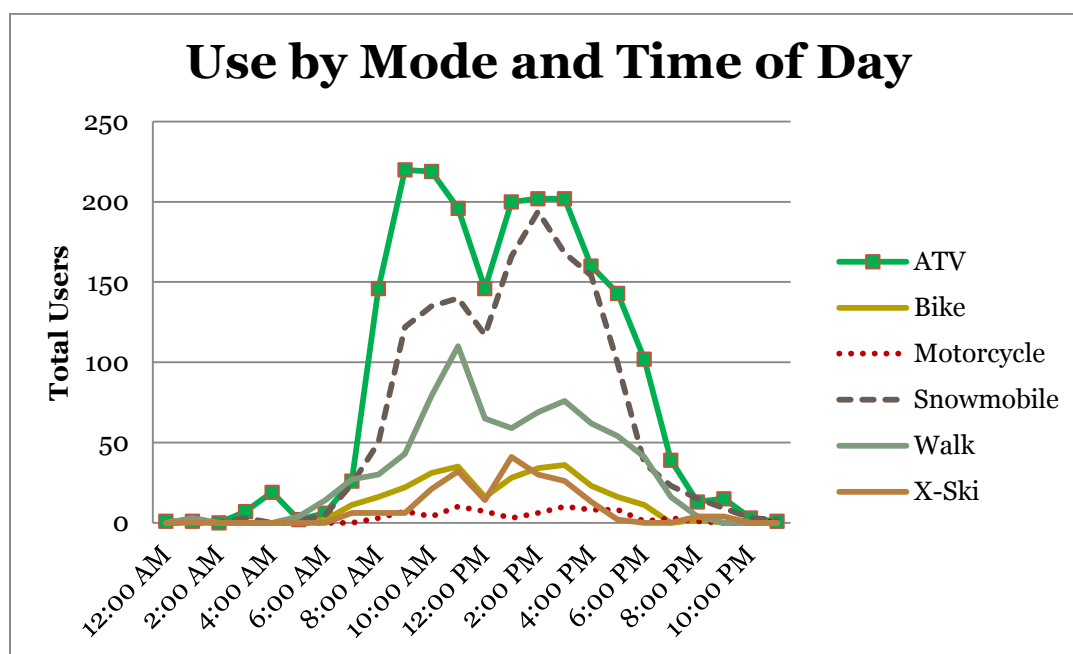
Trail Use by Time of Day

The DEST is open 24/7 with the exception of mud season, which generally occurs in April. The trail cameras have infrared capability and recorded use at all hours of the day and night. Night ridership was far lower than day time with no recorded riders between 2:00 and 3:00 AM. The following graph shows counts of persons by time of day across all months and all days of the week.

As the counter is located very near the western trail head, the travelers tend to be just starting or just ending their trips. Another smaller group is in the middle of their trip, reaching Washington Junction. There are no services or amenities other than a picnic table and privy at Washington Junction, so motorized riders often turn around immediately to head back east. The bump at 3:00 and 4:00 AM for ATVs appears to be one user that makes the same trip at the same time, like a commuter.

Unlike the other patterns, there appears to be little difference in trail use by mode by time of day. All users startup at sunrise, show a noon-time dip, and a second peak in the afternoon. The winter snowmobilers and skiers start later and peak later in the morning and peak and end earlier in the afternoon reflecting shorter daylight hours during colder months.

Construction of the final two miles to High Street is going to change the time of day pattern, perhaps dramatically. Trips by ATV and snowmobile are not destination oriented. The trail is the destination. However, many riders plan their journey around lunch at the destination. Until now it has been impossible for ATV riders to access restaurants in Ellsworth. In the near future originating trips in the east will be more attractive to riders that want to go out for lunch in grand fashion.



Ridership by Mode and Time of Day							
Hour	ATV	Bike	Motorcycle	Snowmobile	Walk	X-Ski	TOTAL
12:00 AM	1	0	0	0	0	0	1
1:00 AM	1	1	0	0	3	0	5
2:00 AM	0	0	0	0	0	0	0
3:00 AM	7	0	0	3	0	0	10
4:00 AM	19	0	0	0	0	0	19
5:00 AM	2	0	0	1	4	0	8
6:00 AM	6	2	0	5	14	0	27
7:00 AM	26	11	0	24	27	6	96
8:00 AM	146	16	3	50	30	6	259
9:00 AM	220	22	7	122	43	6	425
10:00 AM	219	31	4	135	79	21	492
11:00 AM	196	35	10	140	110	32	529
12:00 PM	146	16	7	117	65	14	371
1:00 PM	200	28	3	166	59	41	502
2:00 PM	202	34	6	194	69	30	539
3:00 PM	202	36	10	168	76	26	519
4:00 PM	160	23	8	154	62	13	422
5:00 PM	143	16	8	99	54	2	324
6:00 PM	102	11	1	37	41	0	193
7:00 PM	39	0	3	23	16	0	81
8:00 PM	13	2	1	15	4	4	39
9:00 PM	15	0	0	9	0	4	28
10:00 PM	3	0	0	3	0	0	6
11:00 PM	1	0	1	2	0	0	4
	2,069	284	72	1,467	756	205	4,899

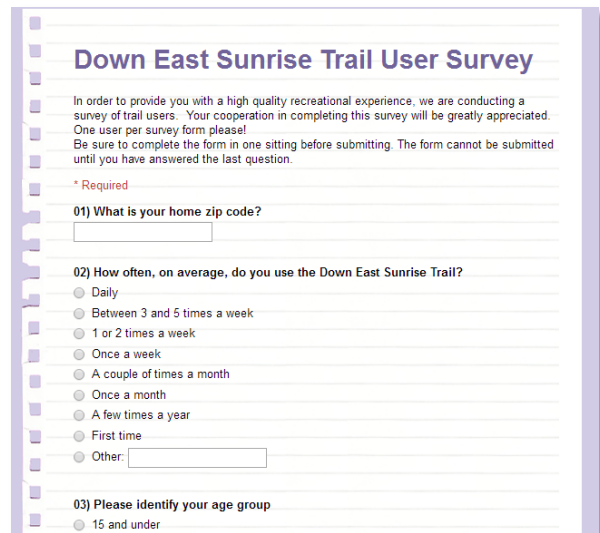


“The most amazing is that ALL get along, if it's ATVs or Snow machines, bikers, walkers or horses. Everyone shows deep respect for one another.”

Trail User Survey

User Survey Methodology

In addition to measuring the flow of users on the trail, economic impact depends on the behavior of the users and factors that affect future decisions about repeat visits, length of stay and purchases. The Sunrise Trail employed a rural trail survey developed by the Rails to Trails Conservancy www.railstotrails.org and used on numerous trail studies throughout the United States. This survey is most effective when it reaches a representative (random or clustered) sample of trail users. HCPC implemented the survey in two ways. A concentrated intercept survey was carried out on one full day during the summer at Washington Junction. It was a very busy day and many users agreed to complete the survey on the spot. This would be an excellent strategy, but several drawbacks should be noted. Being a warm weather survey, no winter users are captured. All the data are gathered for Washington Junction and therefore over represents walkers and cyclists relative to the eastern end of the trail. On a number of other occasions surveys were handed out along the trail and at trail related public events, but these were short duration collections and produced relatively few responses.



The image shows a printed survey form titled "Down East Sunrise Trail User Survey". The form includes an introductory paragraph explaining the purpose of the survey and a note that only one user per form should be completed. It then lists three questions: 01) What is your home zip code? (with a blank box for the answer), 02) How often, on average, do you use the Down East Sunrise Trail? (with radio button options: Daily, Between 3 and 5 times a week, 1 or 2 times a week, Once a week, A couple of times a month, Once a month, A few times a year, First time, and Other: with a blank box), and 03) Please identify your age group (with radio button options: 15 and under). The form is designed with a purple border and small square checkboxes next to each question number.

Help the Sunrise Trail look ahead with your observations.

Take our short [User Survey](#) here.



In order to capture data on year-round use, HCPC also posted the survey at: www.sunrisetrail.org/plans/DESTSurvey.html with a variety of announcements in newsletters, emails and banners to encourage participation. The online survey has generated a trickle of respondents over several years. Readers are encouraged to visit the website to read the entire survey. A print copy is included in the appendices.

The user survey has four focus areas:

- 1) User characteristics: age, gender, zip code, group composition, favorite sections
- 2) Trail use patterns: travel mode, time, frequency, length of stay, reason for use

- 3) Spending patterns on food, lodging and supplies
- 4) Attitudes about the trail and willingness to contribute to its future

The Rails to Trails Conservancy has conducted more than 20 impact assessments using variants of this User Survey and have standardized data analysis and created norms for results. This is very helpful in order to understand where the Sunrise Trail Survey may differ from other trails and where results appear to be consistent with national data.



“I travelled the trail two days ago. It was the most scenic trail I have ever been on.”

The analysis now moves to user survey responses as described in the methodology. In an ideal design, all or a random sample of those recorded by the trail camera would also volunteer to complete a trail survey. This was not practical given the 24/7 camera system and the more sporadic efforts to collect user surveys.

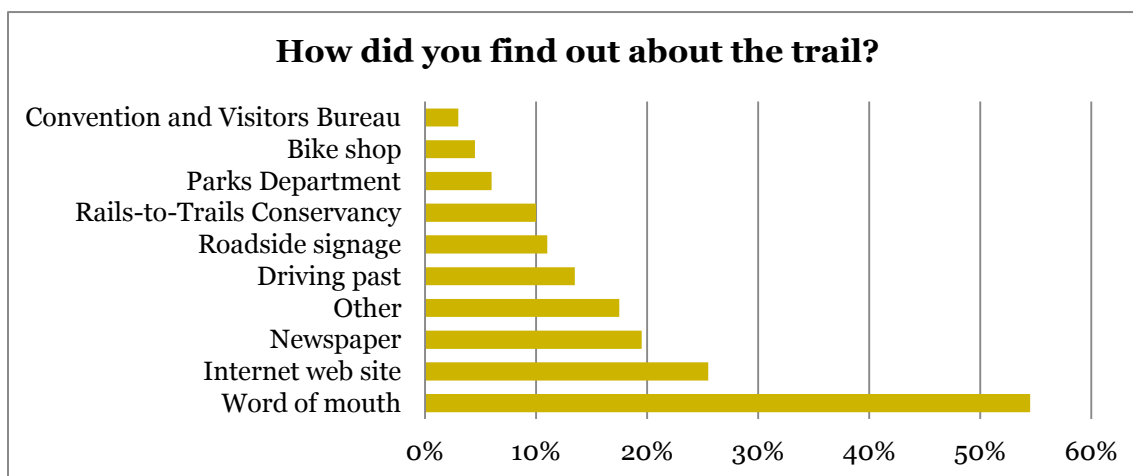
Consequently, there is no physical connection between the user survey and the trail counter data. The survey size of 209 responses is less than 1% of the trail count population. It is also the case that many of the user survey respondents participated before the trail cameras were installed and calibrated. Fortunately many of the discontinuities between counters and user survey responses can be managed statistically.

How do people find out about the Sunrise Trail?

The Sunrise Trail is promoted through several channels. In addition to having its own website, www.sunrisetrail.org, it is also listed on a wide variety of public, non-profit and private websites. The trail is featured in publications by the Maine Office of Tourism, the Maine Tourism Association, regional Chambers of Commerce and host communities.



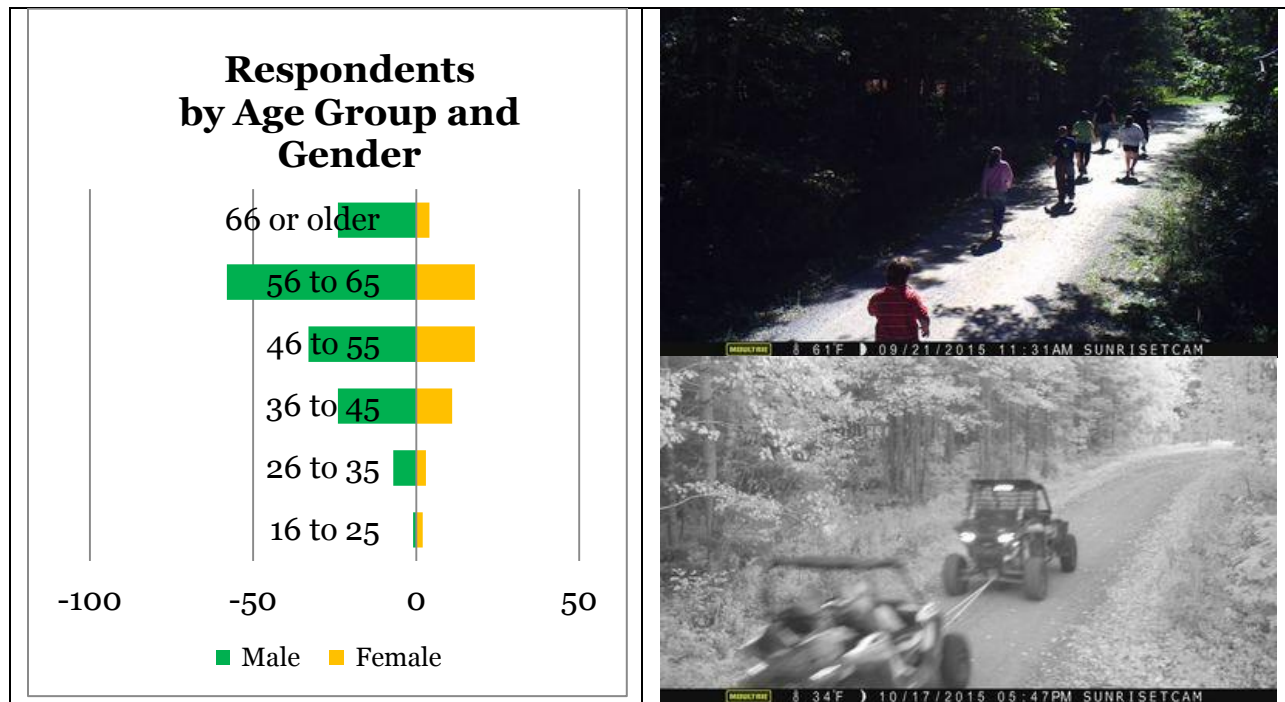
Most respondents to the user survey cite word of mouth as the most important source of information about the trail (55%). The internet (26%) and print media (20%) are also cited as information resources by a significant segment of users.



Who uses the Down East Sunrise Trail?

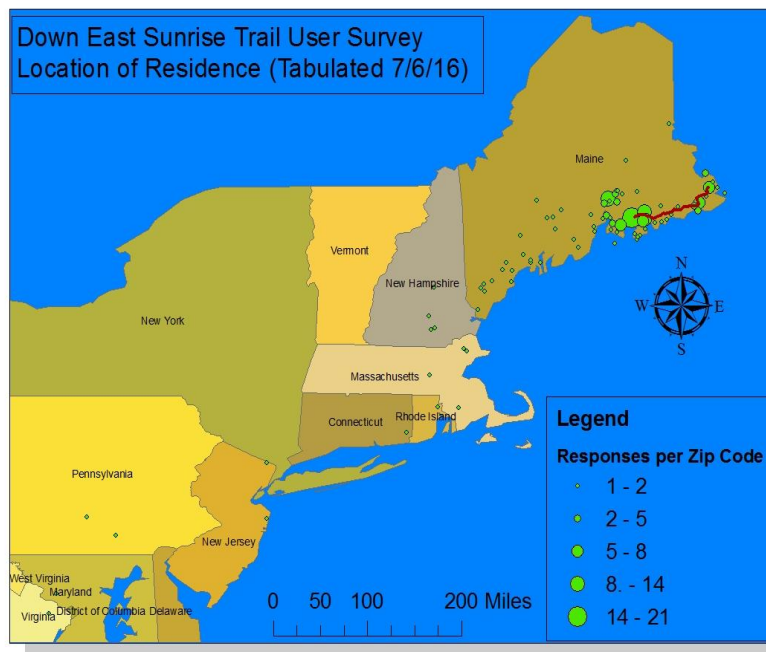
Sunrise Trail users mirror the demographic profile of this region in many respects. The User Survey instrument collects information on the respondent and their travelling group. The age profile of respondents is older than the distribution of adults in eastern Maine, with a very large group in the 56 to 65 bracket and very few in the younger cohort. Survey response rates are typically lower among younger trail users, so this pattern may be as much the result of measurement problems as actual user age distribution. The photographic data suggest that young adults are using the trail in significant numbers. 17% of respondents also indicated that

they were traveling with children under 15. Photographic evidence showed the benefits of traveling in groups, including numerous cases of vehicle failure resulting in towing.



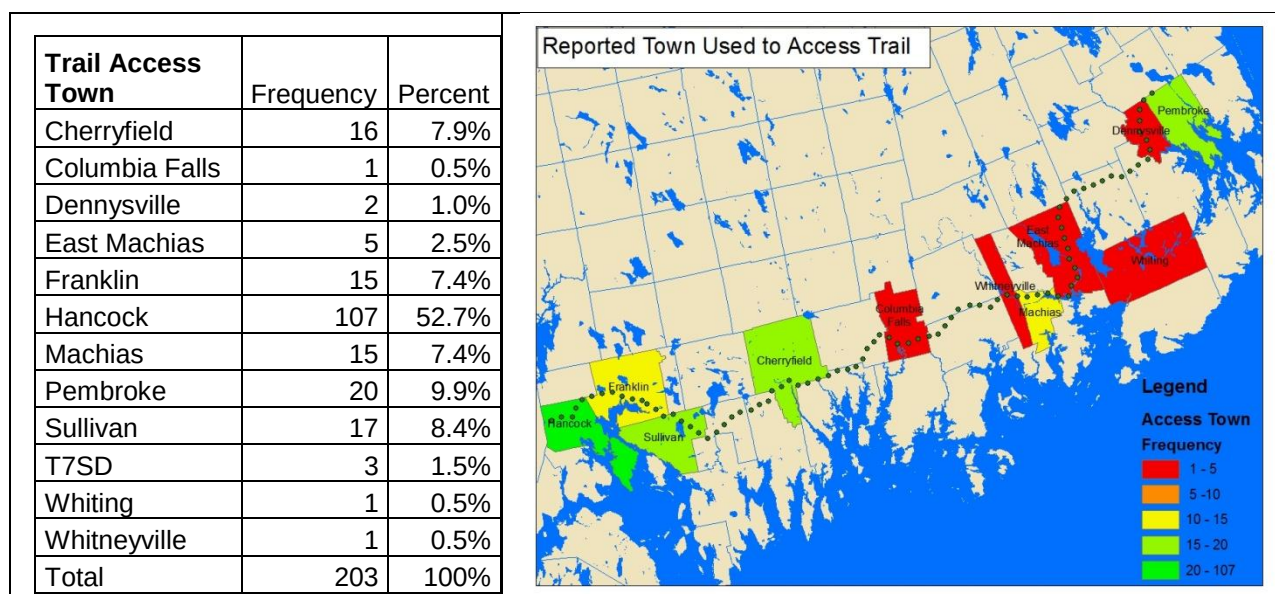
Where do the users live and where do they use the trail?

The following zip code map illustrates the distribution of Sunrise Trail Survey respondents. Individuals from North Carolina and Ohio are not included in the map for scaling purposes.



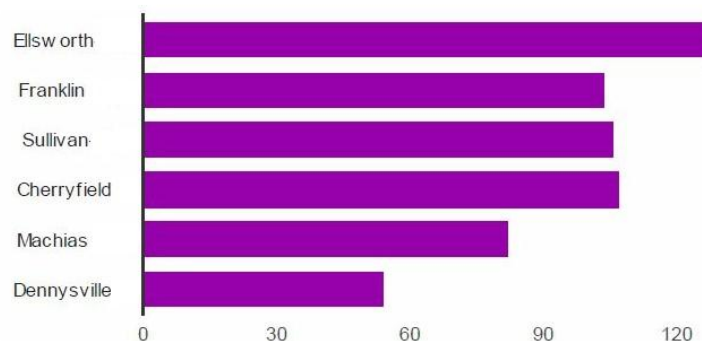
The data suggest that respondents and thus trail users are overwhelmingly drawn from the downeast region including Hancock, Washington and Penobscot Counties with smaller streams coming from southern and midcoast Maine and New Hampshire. Very small numbers of respondents are coming from mid-Atlantic and mid-west states.

Users reported where they began their travel along the trail, as presented in the Trail Access table and map below. About half of all respondents reported beginning their journey at the Washington Junction Trail Head. This is not a random sample as many intercept surveys were conducted at this site. The online survey results show that several other locations including Machias, Ayers Junction (Pembroke), Franklin, Sullivan and Cherryfield are also popular.



Trail use follows from trail origin to a point, but the motorized users report traveling through multiple segments in a typical visit. This bar chart shows use by segment with each segment labeled by its western-end. As such “Ellsworth” refers to the segment from Washington Junction to Franklin. The Trail Segment Used chart indicates that there the entire trail is popular, though use declines on the eastern end. This is particularly the case for non-motorized use.

Trail Segments Used



How do users travel along the trail?

Unlike the trail counter data that benefited from a very snowy winter, the user survey is dominated by summer use. Only one respondent indicated snowmobile to be their primary use,

where as ATV use weighed in with 55% of respondents. Bicyclists and walkers are also over-represented in the survey when compared with the trail count data. Many respondents noted a second and even a third mode on the trail. Snowmobile use increases to 9% of respondents and ATV use climbs to 60%. Similarly, cross-country skiing and snowshoeing are noted by 11 respondents as a secondary activity. Note that the “any use” responses are not mutually exclusive and add up to more than 100%.

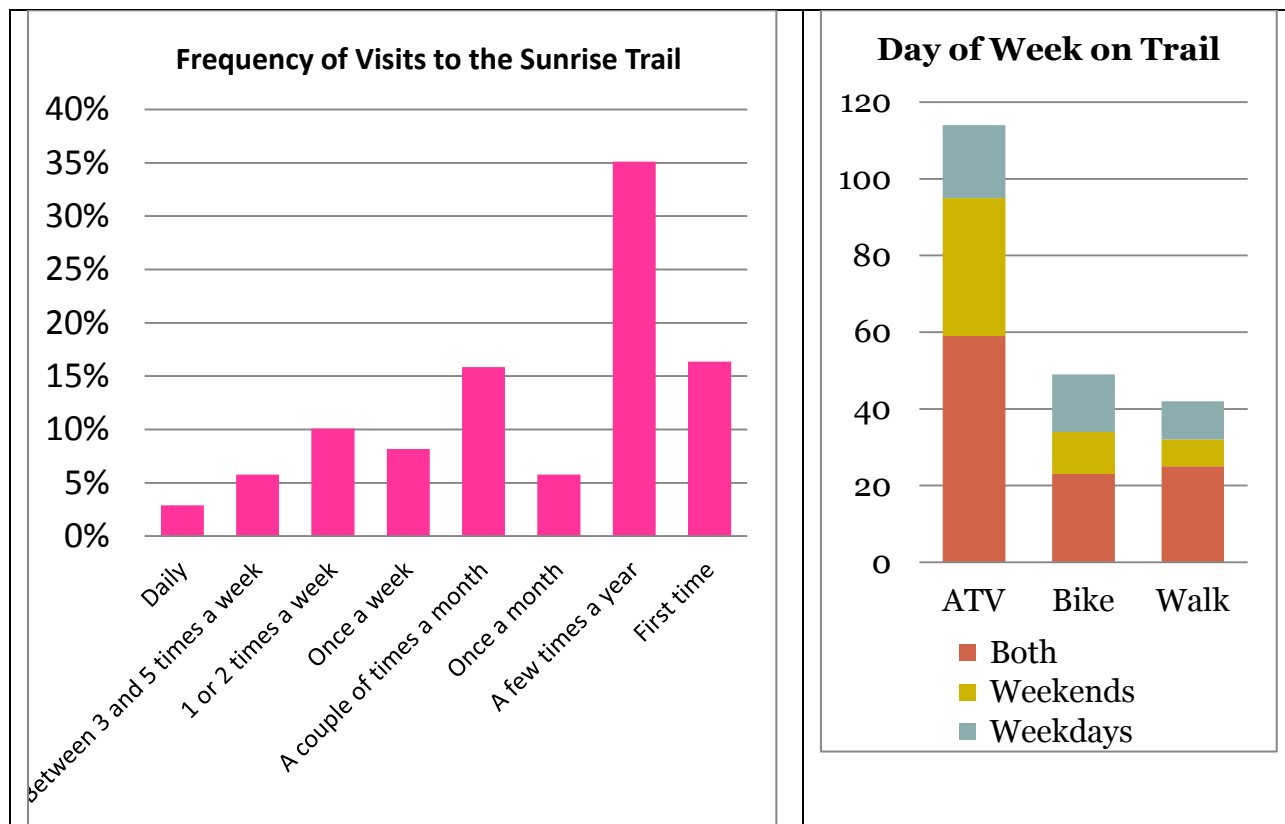
Mode	Primary Use		Any Use	
	Freq	Percent	Freq	Percent
ATV	115	55.3%	125	60.1%
Biking	49	23.6%	64	30.8%
Walking / Hiking	42	20.2%	42	20.2%
Snowmobile	1	0.5%	19	9.1%
Cross Country Skiing / Snowshoeing	0	0.0%	11	5.3%
Jogging / Running	0	0.0%	6	2.9%
Other	0	0.0%	5	2.4%
Motorcycle	1	0.5%	1	0.5%
Horseback Riding	0	0.0%	1	0.5%
Total	208	100.0%	273	

Respondents reported the frequency of their visits across a broad spectrum. The overall pattern is relatively large numbers of infrequent users and smaller numbers of regular users. The Sunrise Trail differs from urban trails in that it rarely can serve as a convenient route for commuters. There are some exceptions, such as the relative proximity of the trail to places of employment in Cherryfield, Harrington and Machias.

Respondents also reported on their preferred day of the week for traveling on the trail. The results for the three largest modes are consistent with the trail counter data. 32% of ATV users reported a preference for weekends, falling to 22% for bicyclists and 17% for walkers.



Down East Sunrise Trail Information Kiosk



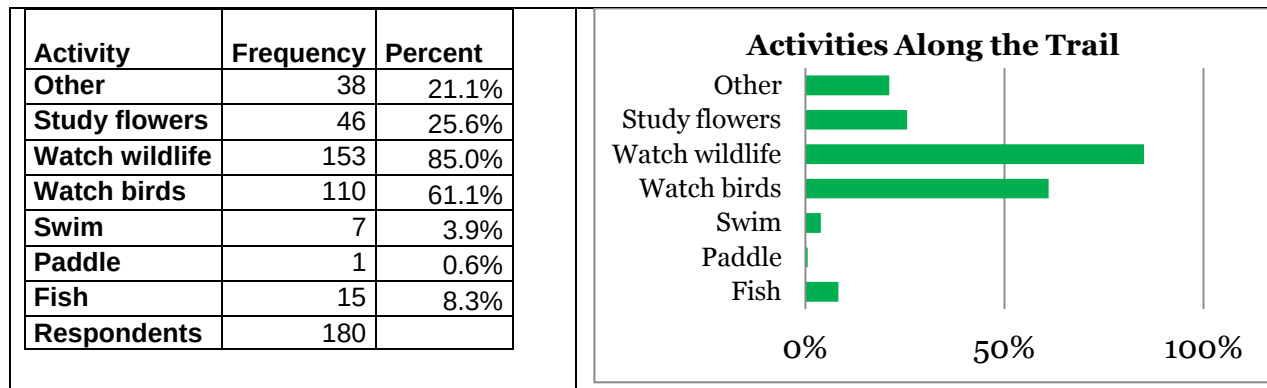
What do trail users like to do along the way?

Trail users are asked to identify their primary reason for using the trail. The following table compares responses from three primary modes. The motorized users all cite recreation as their primary reason. About half of the muscle power users also cite recreation as primary, with most of the remaining respondents citing health, exercise and fitness training. The “other” category tended to be “all of the above” or variants of recreation and health.

Use the Trail For	ATV *	Bike	Walk	TOTAL
Recreation	99%	51%	48%	77%
Health and Exercise	0%	33%	38%	16%
Fitness Training (marathon, triathlon)	0%	8%	5%	3%
Other	1%	8%	10%	4%
Total	100%	100%	100%	100%
Total(n)	114	49	42	205

Users were also asked about ancillary activities along the trail. Not surprisingly watching flowers, wildlife and birds were relatively popular. Fishing is a very good fit with this trail, given the many river, stream and wetland crossings. Trail itineraries highlighting fun fishing spots might attract another segment of people that would appreciate a day’s ride to a quiet fishing spot. Fishing, bird watching, wildlife and flora merit additional promotion in the future.





User Opinions: Trail Maintenance, Security and Cleanliness

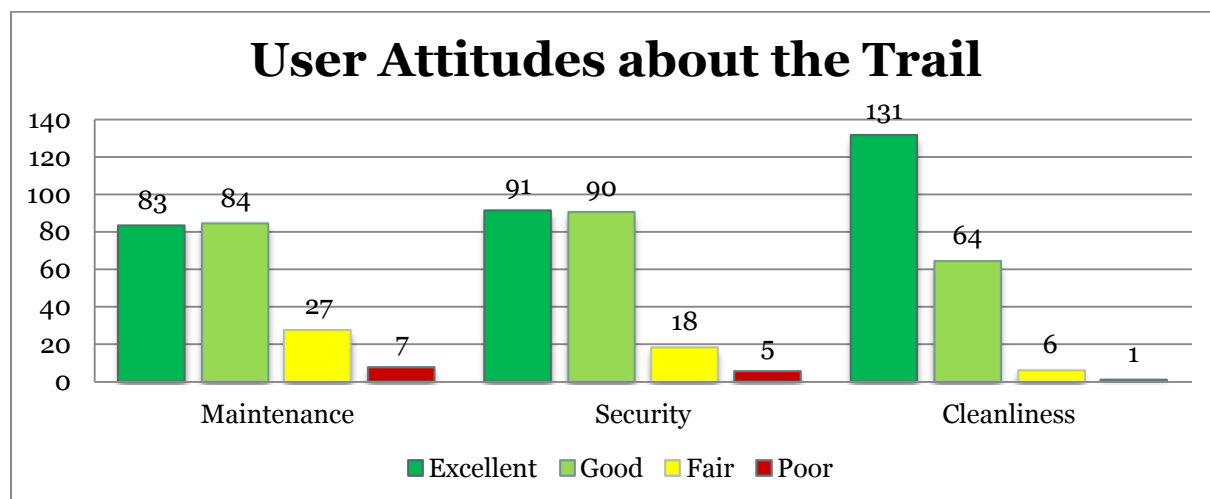
The final panel of questions in the Rails to Trails Conservancy User Survey is an assessment of user attitudes about the trail.

19: In your opinion, the maintenance of the trail is:

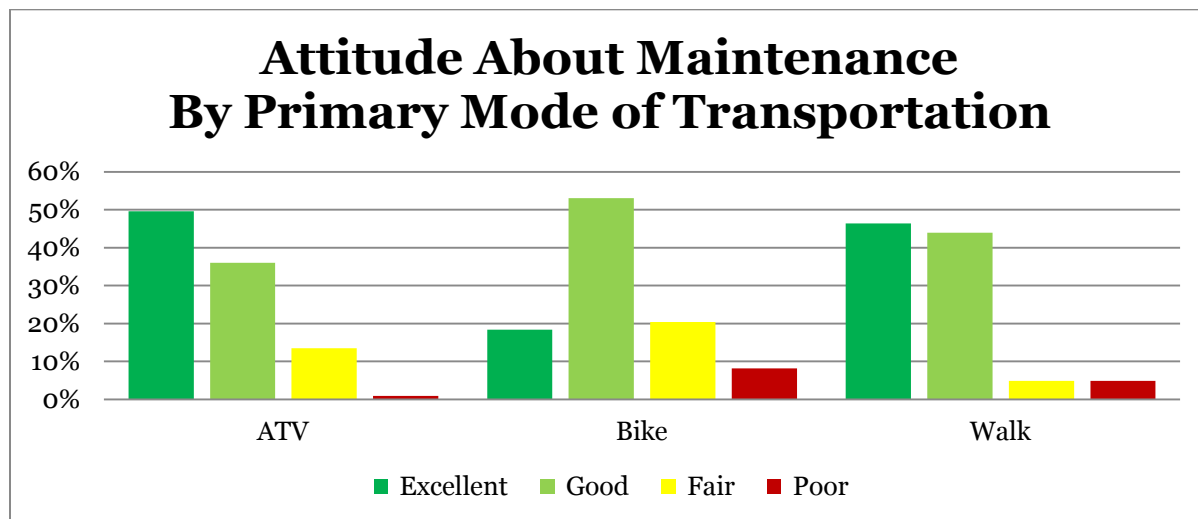
20: In your opinion, the safety and security along the trail is:

21: In your opinion, the cleanliness of the Trail is:

	Maintenance		Security		Cleanliness	
Excellent	83	41%	91	45%	131	65%
Good	84	41%	90	44%	64	32%
Fair	27	13%	18	9%	6	3%
Poor	7	3%	5	2%	1	0%
	201		204		202	



Respondents give high marks to the Sunrise Trail overall, with more than 80% responding good or excellent for all three criteria. Cleanliness receives 97% good or excellent ratings.



Concerns have been expressed by many cyclists about bumpy conditions along the trail. Cyclists and walkers have described occasional unsafe passing by ATVs and snowmobiles. The data indicate that ATV riders were most likely to give an excellent rating to the trail, while cyclists are most likely to give the trail a good rating. The poor ratings were most likely to come from cyclists, and it is possible that cyclists are staying away from the trail and thus not being counted in this survey. Nearly all long distance cyclists on thin-tire bikes are using the paved road network called Bike Route 1 (BR1).

- ***“It would be great if the surface toward Machias was similar to the one closer to Ellsworth (which was perfect on our trip). [smaller gravel]”***
- ***“Guardrails along some areas of the trail would help improve safety, where the banks drop off steeply.”***
- ***“We love to use the sunrise trail to get onto the airline trail. One complaint is people's speed on the trail when they're using ATVs or snowmobiles.”***

22: Would you be willing to pay an annual usage fee to help maintain the trail?

Primary Mode	ATV	Bike	Walk	TOTAL
Yes	58	28	22	108
No	49	20	18	87
Total	107	48	40	195
Primary Mode	ATV	Bike	Walk	TOTAL
Yes	54%	58%	55%	55%
No	46%	42%	45%	45%
Total	100%	100%	100%	100%

Better than half of all riders indicate that they would be willing to pay an annual usage fee to maintain the Downeast Sunrise Trail. Despite somewhat lower maintenance evaluations from cyclists, they are slightly more likely to indicate a willingness to pay. The difference between these groups is not statistically significant. Most economists caution that stated willingness to pay is vastly inflated.

Caveats and Future Research Needs

There are many challenges to collecting data along a remote rural trail. These include camera undercounts, low winter participation in the user survey, high levels of local use, and self reports of spending. The camera counted use at the busiest point of entry, but there are dozens of other points that will merit counting in the future. It is likely that the economic behavior of users is related to the section of trail they are visiting. As such, future efforts should include trail intercept user surveys at all major entry points.



Down East Sunrise Trail Inaugural Event

Economic Impact of the Down East Sunrise Trail

Estimating the total economic impact of the trail integrates the numeric counts achieved with the trail cameras and economic data acquired through the user survey. Trail users reported a variety of expenses connected with their mode of travel overall and their current visit specifically. The survey focuses on three clusters of travel expenses: supplies, food and lodging. These are what economists call “direct impacts”, or the amount that is generated immediately by increasing demand for local goods and services. After reviewing these direct impacts, the study will explore subsequent “indirect and induced” impacts, or those that result in subsequent transactions such as hiring additional wait staff or new restaurant equipment.

Spending on Supplies

Of these expenses, supplies are the most difficult in terms of attribution. Responders are asked:

12: Has your use of the trail influenced your purchase of: (circle all that apply)

Supply	Frequency	Percent	
Nothing	80	39.2%	*****
ATV	76	37.3%	*****
Clothing	42	20.6%	****
Bike supplies	32	15.7%	***
Bike	26	12.7%	**
Footwear	20	9.8%	**
Snowmobile	13	6.4%	*
Auto accessories	6	2.9%	
Respondents	205		

39% of respondents reported not buying any supplies as a result of this trail. They have often spent a great deal on their vehicles, but they believe they would have purchased the vehicle were there no DEST. The next largest response is 37% that do attribute the purchase of their ATV at least to some extent to the existence of the DEST. Significant numbers of respondents also attributed their other purchases in part to the DEST. The snowmobile response is particularly notable since none of the respondents considered snowmobiles to be their primary use of the trail.

13: Approximately how much did you spend on the items above in the past year?

The average expenditures by primary mode are clearly higher than one can reasonably assign to a single or even multiple trips on the DEST, but they are not out of the range of what riders are spending overall. During the intercept interviews a number of respondents had to count all the ATV's they had purchase for their children that were also riding on the trail that day. As such, an average supply expense for ATV users of \$3,495 can be understood as the attribution of a major

purchase for use on the trail. The costs associated with bicycles and walkers appear unrealistically high. Part of this is the result of multiple mode respondents that walk and also use an ATV or snowmobile.

The gap between mean (average) and median (the amount spent by the individual that had 50% of respondents spending less and 50% spending more) is large and indicates that the distribution of expenditures is highly skewed by a small number of persons that spent very large amounts.

Supply Cost by Primary Mode of Travel on the Trail					
Primary Mode	Obs	Total	Mean	Median	Max
ATV	112	\$391,399	\$3,495	\$150	\$30,000
Bike	48	\$40,542	\$845	\$200	\$20,000
Walk	41	\$47,725	\$1,164	\$50	\$15,000
All Users	201	\$479,666	\$2,386	\$150	\$30,000

Average Expenditure on Supplies

If one were to attribute 100% of these expenditures to the trail, then the sum of the three modalities would be the answer, in the range of \$479,666 for 201 users for hard goods, or \$2,386.40 average per users. If this amount is then projected to the estimated 3,704 users from the trail counter, the impact is \$8,839,218.23. This figure is unrealistic, particularly as many of the users have repeat visits, and many are counting their entire investment in ATV and snowmobile equipment. Divide this total by an average of 41 visits per year per user in the survey to calculate a total economic impact of \$215,590.69.

Predicting Expenditures Using Regression Analysis

A regression analysis was performed predicting level of expenditure (Supply Cost) in order to understand the independent effects of travel mode, age, frequency of trail use and length of stay on the trail.

The analysis indicates that use of an ATV contributes \$2,809.83 to reported expenditure on supplies. Time spent and frequency of visits to the trail contribute to the amount people spent on supplies. More time and more frequent visits result in more spending. Age was included as a proxy for ability to spend, but the effect is only marginally significant ($p=.10$) and indicates that younger users report spending more, after accounting for the other variables.

While these variables are statistically significant, the model only accounts for 13% of the overall variability in amount spent. The model is stronger for motorized users, and not among cyclists and walkers is greater, and as noted some of the high spenders are probably reporting on purchase of ATVs and snowmobiles. The model helps us to understand factors contributing to expenditures on supplies, but also illustrates challenges.

Outcome variable: Supply Cost / Covariates: AgeN, M_ATV, TimeSpendN, OftenUseN					ANOVA Table Correlation Coefficient: $r^2 = 0.13$				
Variable	Coefficient	Std Error	F-test	P-value	Source	df	Sum of Squares	Mean Square	F-statistic
AgeN	-50.50	30.578	2.7280	0.100235	Regression	4	687881211.55	171970302.89	7.2227
M_ATV	2809.83	748.376	14.0967	0.000230	Residuals	193	4595250845.54	23809589.87	
TimeSpendN	716.43	375.886	3.6327	0.058149	Total	197	5283132057.09		
OftenUseN	503.77	205.161	6.0294	0.014959					
CONSTANT	-710.94	2143.155	0.1100	0.740458					

Rails to Trails Conservancy Methodology

The Rails to Trails Conservancy have designed a simple formula they use to convert these hard-good purchases to an amount they feel comfortable attributing to the trail. This strategy has drawbacks as there is no analysis of variance, nor analysis of the actual predictive value of the model.

Hard Goods = (% Usage X (Avg. \$ ÷ Avg. Life*) X (# Users ÷ Avg. Number of Trips)

Hard Goods = (61% X (\$3,843.83 / 6) X (3,704 / 41)

Hard Goods = \$35,304.48

*The Average Life is assumed to be six years consistent with Rails to Trails Trust.

Supplies Expenditures Summary

The range of estimated economic impacts for purchase of supplies is considerable, from \$35,304 to \$215,590, or more depending on how the large reported expenditures on ATVs, snowmobiles and bicycles are counted. The Rails to Trails Conservancy Trust study for the Sussex Trail estimates an impact of \$77,119 for 19,934 visits. As motorized users are not permitted on the Sussex trail, a much lower impact per users is likely.



Spending on Food and Rentals

14: In conjunction with your most recent trip to the trail, did you purchase any of the following? (Circle all that apply)

Expenditures on Food, Beverages, and Rentals			
Item	Frequency	Percent	
Beverages	125	61.3%	*****
Meals at a restaurant along the trail	113	55.4%	*****
Candy/Snack foods	97	47.5%	*****
Sandwiches	68	33.3%	*****
None of these	44	21.6%	****
Other	34	16.7%	***
Ice cream	29	14.2%	**
Horse rental	1	0.5%	*
ATV rental	0	0.0%	
Snowmobile rental	0	0.0%	

Most trail visitors report purchasing food and beverages. Rentals are not reported with the exception of one horse rental. Most of the trail is remote and lacks any access to food or restaurants, but there are several points including Franklin, Cherryfield, Harrington and Machias where riders have easy access. Ellsworth will soon be on the trail as well. Even off the trail, riders tended to report visits to Ellsworth restaurants prior to beginning their trail ride. The data are supported by reports from restaurants and convenience stores along the trail that report a significant uptick in business when the trail was active. This effect is particularly important during otherwise slow months in late autumn, winter and late spring.

15: Approximately how much did you spend, per person, on the items above on your most recent visit?

Mode	Obs	Total	Mean	Median
ATV	107	\$4,304.00	\$40.22	\$25.00
Bike	48	\$1,386.50	\$28.89	\$4.75
Walk	41	\$509.50	\$12.43	0
All Modes	196	\$6,200.00	\$31.63	\$15.00

Other News

- Sunrise Trail Coalition publishes Spring 2011 Newsletter
- Bangor Daily News: Snow Sheds Trailside Business (01/24/2011)
- Ellsworth American Photo: ATVs in a Post-Ecological Era
- Photo Journal Article by Susan Shaw, Have you heard about the Sunrise Trail?
- W481 Ports Inauguration News Broadcast online



Franklin Trading Post
Last updated by user on Feb 26, 2010
A convenient stop for food and fuel. A small trail connects the Franklin Trading Post to the Down East Sunrise Trail.
Directions Search nearby Save to... more



www.sunrisetrail.org provides information about local services.

Simple Average Technique

This approach simply multiplies the average by the 3,704 users, which would be \$117,157.52.

Expenditures on food and beverages is significantly related to mode of travel, with ATV riders reporting the highest amount, followed by cyclists and walkers. The medians are lower, indicating that a few high spending visitors are skewing the average higher. This is borne out by reports of spending \$500 by an ATV respondent for his group, \$275 and \$200 by a walker. The figures are likely to be a misinterpretation of the question, reporting expenditures for the group rather than expenditures per individual.

Eliminating the eight highest spenders, greater than \$100, reduces the reported means.

Mode	Obs	Total	Mean	Median
ATV	103	\$3,004.00	\$29.17	\$20.00
Bike	45	\$731.50	\$16.26	\$2.00
Walk	40	\$309.50	\$7.74	\$0.00
All Modes	188	\$4,045.00	\$21.52	\$15.00

Multiplying the adjusted average expenditure of \$21.52 by 3,704 users produces a total impact of \$79,695.26. For comparative purposes, the Sussex Trail study estimates a total impact of \$100,837 for a much higher number of users.

Spending on Lodging

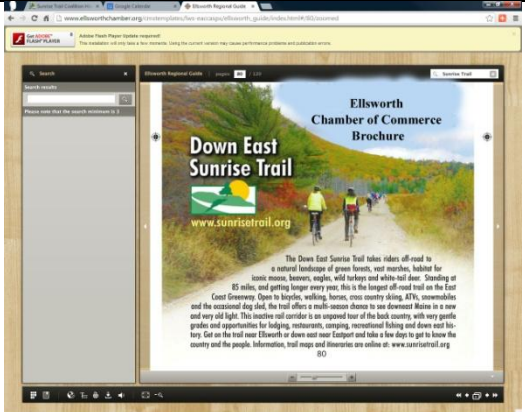
16: Did your visit to the trail involve an overnight stay in one of the following types of accommodations? (circle one response)

Accommodation	Frequency	Percent	
Motel / Hotel	24	12%	**
Campground	12	6%	*
Friend or Relatives Home	11	5%	*
Bed and Breakfast	6	3%	
None	148	74%	*****
Total	201	100%	

In retrospect, the survey missed many housing arrangements that are characteristic of Maine including cabins, camps and short-term rental homes. These show up irregularly in the comments. Knowing that most respondents and likely most trail users live in three nearby counties suggests that lodging is not needed by most. In this case 21% of respondents list hotels, campgrounds and B&Bs where they would be expected to pay on a daily basis. The numbers are low, but suggest that bike riders (36%) are more likely to use rental accommodations than ATV (20%) and walkers (10%). Only the bike riders reported using Bed and Breakfast accommodations. ATV users were most likely to use hotels and motels.

Accommodation	ATV	Bike	Walk	Total
Bed and Breakfast	0	5	0	5
Campground	7	3	1	11
Motel / Hotel	14	8	2	24
Total	21	16	3	40

Accommodation	ATV	Bike	Walk	Total
Bed and Breakfast	0%	31%	0%	13%
Campground	33%	19%	50%	28%
Motel / Hotel	67%	50%	50%	59%
Total	100%	100%	100%	100%



17. How many nights did you stay in conjunction with your visit to this trail?

Analysis of nights using accommodations shows small, but statistically insignificant differences among types of rental facilities and mode of travel. All numbers round to about 2 nights, which is reasonable. ATVs often run the trail end to end and back, or 164 miles with a hotel stay the night before leaving and one on the trail or when the return to their starting point. Cyclists need three days to ride the entire trail, but many are mixing a trail ride with riding in Acadia National Park. Only two walkers reported using rental facilities. Most walkers are likely to be local residents staying in their own homes.

Accommodation Days	Obs	Total	Mean
Bed and Breakfast	5	10	2.0
Campground	11	17	1.5
Motel / Hotel	21	53	2.5
Overall	37	80	2.2

Accommodation Days	Obs	Total	Mean
ATV	21	49	2.3
Bike	14	26	1.9
Walk	3	5	2.5
Overall	38	80	2.2

18: Approximately how much did you spend on over-night accommodations per night?

Accommodation	Obs	Total	Mean
Bed and Breakfast	5	\$740.00	\$148.00
Campground	11	\$508.00	\$46.18
Motel / Hotel	20	\$3,470.00	\$173.50
Overall	36	\$4,718.00	\$131.06
Overall (<=\$200)	33	\$2,788.17	\$84.49

Primary Mode	Obs	Total	Mean
ATV	20	\$2,608.00	\$130.40
Bike	13	\$1,540.00	\$118.46
Walk	3	\$570.00	\$190.00
Overall	36	\$4,718.00	\$131.06
Overall (<=\$200)	33	\$2,788.17	\$84.49

Since the differences between modes and lengths of stay are not statistically significant, the methodology employed by the Rails to Trails Conservancy is employed.

Accommodations= (% Usage X Users Avg. \$ X # Users x Avg. # Nights)

Accommodations= 18% X \$131.06 X 3,704 X 2.2

Accommodations= \$187,987.39

This is an impressive figure, and may be inflated by a few very high rental values that may represent more than one night or multiple rooms for the traveling group. Attribution can also be complicated by the multi-destination travelers that are visiting Acadia National Park or Eastport. Removing three rents greater than \$200 has a significant impact on the average.

Accommodations= (% Usage X Users Avg. \$ X # Users x Avg. # Nights)
 Accommodations= 18% X \$84.49 X 3,704 X 2.2
 Accommodations= \$121,193.30

For comparison, the calculation for Spring Valley Road on the Sussex trail is:
 (.115 X \$52.75 X 19,934 X 2.9) = \$48,790



“Great connector to ATV Trail System. Makes ATV recreation very easy and fun!”

“Spent a lot.”

Total Economic Impact

Costs to Riders	Low Estimate	High Estimate	Comments
Supplies – Hard goods	\$35,304.48	\$215,590.69	Attribution over multiple visits.
Food, Beverage, Consumables	\$79,695.26	\$117,167.35	Impact of removing outliers
Lodging	\$121,193.30	\$187,987.39	Impact of removing outliers
Total	\$236,193.04	\$520,745.43	

Multiplier Effect

We should further consider indirect and induced impacts of the trail. For instance purchase of food, lodging and supplies indirectly stimulates purchases of food by restaurants, business services, parts and other links back through the supply chain. Another set of economic consequences are induced through hiring additional workers in the supply chain that in turn demand housing, groceries, education. These indirect and induced effects are often summarized as a “multiplier” effect.

	Low Estimate	High Estimate	Comments
Total Direct Effect	\$236,193.04	\$520,745.43	Range due to attribution of big purchases and excluding “big spenders”.
Total + Direct + Indirect effects	\$472,386.08	\$1,041,490.86	The use of multipliers questioned in rural projects due to leakage of benefits.

Calculating the precise multiplier effect for the Down East Sunrise Trail is another process we cannot incorporate at this time. However, looking at projects, New York State uses a multiplier of 2.0 for rural rail to trail projects.ⁱ Typically multipliers diminish as the economic catchment

area becomes more rural. If the supply chain is outside of the region, money leaves the system before having a chance to be re-spent. The indirect and induced impacts are quickly dispersed.

In the case of Washington Junction, many local services are relatively near, including ATV and snowmobile sales and service, hotels, motels, campgrounds, restaurants and other conveniences. Using a multiplier of 2.0 would result in total benefits ranging between \$500,000 and \$1,000,000.

If the western gateway of the trail can produce direct economic impacts valued at \$236,192 (the low end), and total impacts at close to \$500,000, the question remains whether the benefits are sufficient to justify the investment and ongoing operating costs. A full account of these costs is essential to answering the question, and as such will be the subject of a future report.

Other News

- Sunrise Trail Coalition publishes [Spring, 2011 Newsletter](#).
- Bangor Daily News: [Snow Boosts Trailside Business](#) (01/24/2011)
- Ellsworth American Photo: [ATV's in a Post Fossil Fuel Era](#)
- Photo Journal Article by Susan Shaw, [Have you heard about the Sunrise Trail?](#)
- WABI Posts Inauguration [News Broadcast online](#)

[Sunrise Trail Offers new business signage options](#)

The Sunrise Trail website highlights businesses providing food, fuel, supplies and lodging.

Conclusions

The Down East Sunrise Trail has produced measurable and significant economic benefits for downeast Maine ranging from approximately \$236,000 to \$1,000,000 for a 10 month period in 2014-2015. Even at the low end of this range, the measured benefits appear noteworthy. In addition to these economic benefits, there have been a variety of important recreation, health, quality of life and community benefits. Rider satisfaction is high, but will only be sustained if there is ongoing attention to trail maintenance, security and cleanliness. Community satisfaction, particularly the business community, will require additional systematic research.

In order to arrive at this conclusion the Sunrise Trail Coalition with partners including the Hancock County Planning Commission, Maine Bureau of Parks and Lands, Maine Department of Transportation, Rails to Trails Conservancy and many others. The partners each have an important role for the success of the Sunrise Trail. Each also has costs associated with their role. A helpful extension to this analysis will be to identify processes to sustain the trail, helping to offset partner costs and continuing to build trail ridership and local business development.

Measuring the benefits is fraught with challenges relating to measurement, inaccurate self-reports and attribution of big assets. This study adopted the Rails to Trails Conservancy methodology in order to maintain comparability with other studies.



***“The trail is absolutely awesome.
It is the best thing so far about moving to Machias.”***

Appendix A - Trail Counter Data

<table> <tr> <th>Hour</th><th>Frequency</th><th>Percent</th></tr> <tr><td>0</td><td>1</td><td>0.03%</td></tr> <tr><td>1</td><td>5</td><td>0.14%</td></tr> <tr><td>3</td><td>8</td><td>0.22%</td></tr> <tr><td>4</td><td>19</td><td>0.53%</td></tr> <tr><td>5</td><td>7</td><td>0.19%</td></tr> <tr><td>6</td><td>22</td><td>0.61%</td></tr> <tr><td>7</td><td>70</td><td>1.94%</td></tr> <tr><td>8</td><td>184</td><td>5.10%</td></tr> <tr><td>9</td><td>294</td><td>8.15%</td></tr> <tr><td>10</td><td>337</td><td>9.35%</td></tr> <tr><td>11</td><td>351</td><td>9.73%</td></tr> <tr><td>12</td><td>283</td><td>7.85%</td></tr> <tr><td>13</td><td>371</td><td>10.29%</td></tr> <tr><td>14</td><td>413</td><td>11.45%</td></tr> <tr><td>15</td><td>390</td><td>10.82%</td></tr> <tr><td>16</td><td>326</td><td>9.04%</td></tr> <tr><td>17</td><td>245</td><td>6.79%</td></tr> <tr><td>18</td><td>153</td><td>4.24%</td></tr> <tr><td>19</td><td>66</td><td>1.83%</td></tr> <tr><td>20</td><td>31</td><td>0.86%</td></tr> <tr><td>21</td><td>21</td><td>0.58%</td></tr> <tr><td>22</td><td>5</td><td>0.14%</td></tr> <tr><td>23</td><td>4</td><td>0.11%</td></tr> <tr> <td>TOTAL</td><td>3606</td><td>100.00%</td></tr> </table>	Hour	Frequency	Percent	0	1	0.03%	1	5	0.14%	3	8	0.22%	4	19	0.53%	5	7	0.19%	6	22	0.61%	7	70	1.94%	8	184	5.10%	9	294	8.15%	10	337	9.35%	11	351	9.73%	12	283	7.85%	13	371	10.29%	14	413	11.45%	15	390	10.82%	16	326	9.04%	17	245	6.79%	18	153	4.24%	19	66	1.83%	20	31	0.86%	21	21	0.58%	22	5	0.14%	23	4	0.11%	TOTAL	3606	100.00%	<table> <tr> <th>Day of Week</th><th>Frequency</th><th>Percent</th></tr> <tr><td>Sunday</td><td>880</td><td>24.40%</td></tr> <tr><td>Monday</td><td>437</td><td>12.12%</td></tr> <tr><td>Tuesday</td><td>433</td><td>12.01%</td></tr> <tr><td>Wednesday</td><td>387</td><td>10.73%</td></tr> <tr><td>Thursday</td><td>312</td><td>8.65%</td></tr> <tr><td>Friday</td><td>358</td><td>9.93%</td></tr> <tr><td>Saturday</td><td>799</td><td>22.16%</td></tr> <tr> <td>TOTAL</td><td>3606</td><td>100.00%</td></tr> </table> <table> <tr> <th>Mode</th><th>Frequency</th><th>Percent</th></tr> <tr><td>ATV</td><td>1443</td><td>40.02%</td></tr> <tr><td>Bike</td><td>212</td><td>5.88%</td></tr> <tr><td>Car</td><td>21</td><td>0.58%</td></tr> <tr><td>Groomer</td><td>21</td><td>0.58%</td></tr> <tr><td>Snow Shoe</td><td>17</td><td>0.47%</td></tr> <tr><td>Motorcycle</td><td>61</td><td>1.69%</td></tr> <tr><td>Other</td><td>6</td><td>0.17%</td></tr> <tr><td>Snowmobile</td><td>1212</td><td>33.61%</td></tr> <tr><td>Walk</td><td>491</td><td>13.62%</td></tr> <tr><td>Cross Country Ski</td><td>122</td><td>3.38%</td></tr> <tr> <td>TOTAL</td><td>3606</td><td>100.00%</td></tr> </table>	Day of Week	Frequency	Percent	Sunday	880	24.40%	Monday	437	12.12%	Tuesday	433	12.01%	Wednesday	387	10.73%	Thursday	312	8.65%	Friday	358	9.93%	Saturday	799	22.16%	TOTAL	3606	100.00%	Mode	Frequency	Percent	ATV	1443	40.02%	Bike	212	5.88%	Car	21	0.58%	Groomer	21	0.58%	Snow Shoe	17	0.47%	Motorcycle	61	1.69%	Other	6	0.17%	Snowmobile	1212	33.61%	Walk	491	13.62%	Cross Country Ski	122	3.38%	TOTAL	3606	100.00%	<table> <tr> <th>Month</th><th>Frequency</th><th>Percent</th></tr> <tr><td>Jan</td><td>163</td><td>4.52%</td></tr> <tr><td>Feb</td><td>751</td><td>20.83%</td></tr> <tr><td>Mar</td><td>570</td><td>15.81%</td></tr> <tr><td>Apr</td><td>105</td><td>2.91%</td></tr> <tr><td>May</td><td>462</td><td>12.81%</td></tr> <tr><td>Jul</td><td>259</td><td>7.18%</td></tr> <tr><td>Aug</td><td>214</td><td>5.93%</td></tr> <tr><td>Sep</td><td>724</td><td>20.08%</td></tr> <tr><td>Oct</td><td>358</td><td>9.93%</td></tr> <tr> <td>TOTAL</td><td>3606</td><td>100.00%</td></tr> </table> <table> <tr> <th>Direction</th><th>Frequency</th><th>Percent</th></tr> <tr><td>E</td><td>1629</td><td>45.17%</td></tr> <tr><td>W</td><td>1977</td><td>54.83%</td></tr> <tr> <td>TOTAL</td><td>3606</td><td>100.00%</td></tr> </table>	Month	Frequency	Percent	Jan	163	4.52%	Feb	751	20.83%	Mar	570	15.81%	Apr	105	2.91%	May	462	12.81%	Jul	259	7.18%	Aug	214	5.93%	Sep	724	20.08%	Oct	358	9.93%	TOTAL	3606	100.00%	Direction	Frequency	Percent	E	1629	45.17%	W	1977	54.83%	TOTAL	3606	100.00%
Hour	Frequency	Percent																																																																																																																																																																																							
0	1	0.03%																																																																																																																																																																																							
1	5	0.14%																																																																																																																																																																																							
3	8	0.22%																																																																																																																																																																																							
4	19	0.53%																																																																																																																																																																																							
5	7	0.19%																																																																																																																																																																																							
6	22	0.61%																																																																																																																																																																																							
7	70	1.94%																																																																																																																																																																																							
8	184	5.10%																																																																																																																																																																																							
9	294	8.15%																																																																																																																																																																																							
10	337	9.35%																																																																																																																																																																																							
11	351	9.73%																																																																																																																																																																																							
12	283	7.85%																																																																																																																																																																																							
13	371	10.29%																																																																																																																																																																																							
14	413	11.45%																																																																																																																																																																																							
15	390	10.82%																																																																																																																																																																																							
16	326	9.04%																																																																																																																																																																																							
17	245	6.79%																																																																																																																																																																																							
18	153	4.24%																																																																																																																																																																																							
19	66	1.83%																																																																																																																																																																																							
20	31	0.86%																																																																																																																																																																																							
21	21	0.58%																																																																																																																																																																																							
22	5	0.14%																																																																																																																																																																																							
23	4	0.11%																																																																																																																																																																																							
TOTAL	3606	100.00%																																																																																																																																																																																							
Day of Week	Frequency	Percent																																																																																																																																																																																							
Sunday	880	24.40%																																																																																																																																																																																							
Monday	437	12.12%																																																																																																																																																																																							
Tuesday	433	12.01%																																																																																																																																																																																							
Wednesday	387	10.73%																																																																																																																																																																																							
Thursday	312	8.65%																																																																																																																																																																																							
Friday	358	9.93%																																																																																																																																																																																							
Saturday	799	22.16%																																																																																																																																																																																							
TOTAL	3606	100.00%																																																																																																																																																																																							
Mode	Frequency	Percent																																																																																																																																																																																							
ATV	1443	40.02%																																																																																																																																																																																							
Bike	212	5.88%																																																																																																																																																																																							
Car	21	0.58%																																																																																																																																																																																							
Groomer	21	0.58%																																																																																																																																																																																							
Snow Shoe	17	0.47%																																																																																																																																																																																							
Motorcycle	61	1.69%																																																																																																																																																																																							
Other	6	0.17%																																																																																																																																																																																							
Snowmobile	1212	33.61%																																																																																																																																																																																							
Walk	491	13.62%																																																																																																																																																																																							
Cross Country Ski	122	3.38%																																																																																																																																																																																							
TOTAL	3606	100.00%																																																																																																																																																																																							
Month	Frequency	Percent																																																																																																																																																																																							
Jan	163	4.52%																																																																																																																																																																																							
Feb	751	20.83%																																																																																																																																																																																							
Mar	570	15.81%																																																																																																																																																																																							
Apr	105	2.91%																																																																																																																																																																																							
May	462	12.81%																																																																																																																																																																																							
Jul	259	7.18%																																																																																																																																																																																							
Aug	214	5.93%																																																																																																																																																																																							
Sep	724	20.08%																																																																																																																																																																																							
Oct	358	9.93%																																																																																																																																																																																							
TOTAL	3606	100.00%																																																																																																																																																																																							
Direction	Frequency	Percent																																																																																																																																																																																							
E	1629	45.17%																																																																																																																																																																																							
W	1977	54.83%																																																																																																																																																																																							
TOTAL	3606	100.00%																																																																																																																																																																																							

Unit of Analysis	Obs	Total	Mean	Var	Std Dev	Min	25%	Median	75%	Max	Mode
Number of Vehicles	3606	3395	0.9415	0.3125	0.559	0	1	1	1	5	1
Number of Persons	3606	4899	1.3586	0.4364	0.6606	0	1	1	2	9	1

Appendix B - Down East Sunrise Trail User Survey

Down East Sunrise Trail User Survey

In order to provide you with a high quality recreational experience, we are conducting a survey of trail users. Your cooperation in completing this survey will be greatly appreciated. One user per survey form please!



- 1: What is your zip code? _____
- 2: How often, on average, do you use the trail? (circle one response) Daily Between 3 and 5 times a week 1 or 2 times a week
Once a week A couple of times a month Once a month A few times a year First time
- 3: Please identify your age group. (circle one response)
15 and under 16 to 25 26-35 36-45 46-55 56-65 66 or older
- 4: Were any children under the age of 15 with you on your trail experience today? Yes No
- 5: What is your gender? (circle your response) Male Female
- 6: What is your primary activity on the trail? (circle all that apply) Walking/ Hiking Biking Jogging/Running
Horseback Riding ATV XC skiing/Snowshoeing Snowmobile Other activity (specify) _____
- 7: Generally, when do you use the trail? (circle one response) Weekdays Weekends Both
- 8: How much time do you generally spend on the trail each visit? (circle one response)
Less than 30 minutes 30 minutes to 1 hour 1 to 2 hours More than 2 hours
- 9: Would you consider your use of the trail to be for... (circle one response)
Recreation Health and Exercise Commuting Fitness Training (marathon, triathlon) Other (specify) _____
- 10: During your trail visit did you (circle all that apply) Fish Paddle Swim Watch birds Watch wildlife Study flowers
- 11: How did you find out about the trail? (circle all that apply)
Word of mouth Roadside signage Driving past Newspaper Parks Department Bike shop
Convention and Visitors Bureau Information from Rails-to-Trails Conservancy Internet web site Other _____
- 12: Has your use of the trail influenced your purchase of: (circle all that apply)
Bike Bike supplies Auto accessories Footwear ATV Snowmobile Clothing Nothing
- 13: Approximately how much did you spend on the items above in the past year? \$ _____
- 14: In conjunction with your most recent trip to the trail, did you purchase any of the following? (circle all that apply)
Beverages Candy/Snack foods Sandwiches Ice cream Meals at a restaurant along the trail
ATV rental Snowmobile rental Horse rental Other _____ None of these
- 15: Approximately how much did you spend, per person, on the items above on your most recent visit? \$ _____
- 16: Did your visit to the trail involve an overnight stay in one of the following types of accommodations? (circle one response)
Motel/Hotel Bed and Breakfast Friend or Relatives Home Campground Other (please specify) _____
- 17: How many nights did you stay in conjunction with your visit to this trail? _____
- 18: Approximately how much did you spend on over night accommodations per night? \$ _____
- 19: In your opinion, the maintenance of the trail is (circle one) Excellent Good Fair Poor
- 20: In your opinion, the safety and security along the trail is (circle one) Excellent Good Fair Poor
- 21: In your opinion, the cleanliness of the Trail is (circle one) Excellent Good Fair Poor
- 22: Would you be willing to pay an annual usage fee to help maintain the trail? (circle one response) Yes No
- 23: What portion of the trail do you use most often? (circle all that apply)
Ellsworth-Franklin Franklin-Sullivan Sullivan-Cherryfield
Cherryfield-Machias Machias-Dennysville Dennysville-Ayers Junction

References:

Rail to Trail Conservancy:

www.railtotrails.org/build-trails/trail-building-toolbox/trail-enhancements-management/trail-user-surveys-and-counting/

Google Form Results: <https://docs.google.com/forms/d/1FLU19Dn057L2on4uojhZsivVpUtFQ-BJuaTwtrruSBQ/viewanalytics>

24: Which trail access points do you generally use when you visit the trail? _____

Additional comments _____

ⁱ “Reviewing the survey data collected on the Town of Hurley Rail Trail, it was found that about 10.5% of the trail users were non-local. Non-local users were found to spend more money in connection with their visits to the trail than local users. They averaged \$202.35/trail visit versus an expenditure of only \$5.19/trail visit for local users. Assuming a multiplier effect of 2.0, (typical for this type of spending in an area similar to where this trail is located, the economic impact would be about \$2 million which would support about 40 FTE (Full Time Equivalent) jobs within the community. Additional economic impact exists because of increased tax revenues to the local community. Currently, Ulster County has a sales tax rate of 8% of which 4% leaves the local area and goes to New York State.” (Every Mile Counts: Economic analysis of 2008 New York Trail User Surveys - OPRHP)