

**If you don't Count...  
YOU DON'T COUNT**



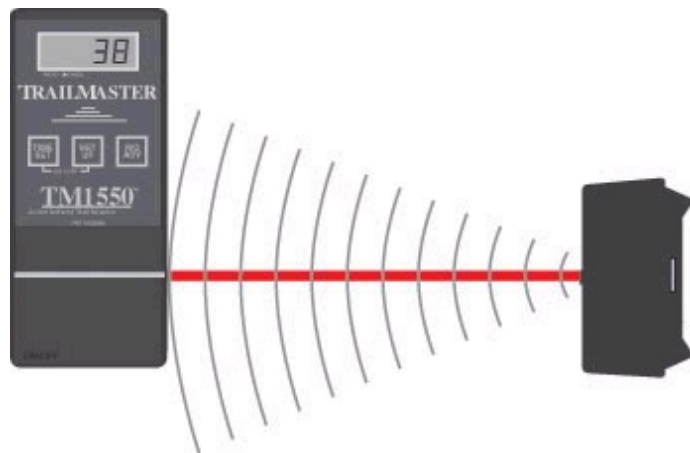
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**rails·to·trails**  
conservancy

# Methods

Electro Mechanical



Manual

# Electro Mechanical

- Active Infrared
  - Uses an infrared beam of light
  - Beam is constantly active
  - Beam bounces off of reflector on the other side of the trail
  - Counts are registered when the beam is broken
- Passive Infrared
  - Uses an infrared beam of light
  - There is no reflector unit
  - Beam detects and counts warm moving objects
- Seismic
  - Pressure Pad
  - Air Tube



# Trail Traffic Counter Study

Missoula Technology and Development Center  
U. S. Forest Service - 1999

## General Problems:

Accuracy	33%
Installation and sensitivity	21%
Maintenance and battery life	21%
Vandalism	15%
Weatherization and malfunctions	11%





# Trail Traffic Counter Study

Missoula Technology and Development Center  
U. S. Forest Service - 1999

## Improvements Needed:

Improved battery life	23%
Increased accuracy	18%
Lower cost	15%
More rugged construction	8%



# Manual Method



- Manual counts of trail users
- Counts at trailheads
- Counts along the trail
- Very labor intensive
- Very accurate
- Low cost if done with volunteers
- Only way to count users by type of use

# National Bicycle and Pedestrian Documentation Project



- Objectives:
  - Establish a consistent national bicycle and pedestrian count survey methodology
  - Establish a national database of bicycle and pedestrian count information
  - Use the count survey information to begin analysis on the correlations between various factors and bicycle and pedestrian activity



# Manual Method

## York County Heritage Rail Trail User Count



- Counts conducted at nine trailheads during September 2001
- Involved nearly 100 volunteers
- Sampling done over six 2 hour time periods
- Weekdays time periods were random based upon volunteer availability
- Weekends efforts were made to sample in all time periods
- Analysis estimated 247,000 annual user visits.

# Infrared Counters



- TrafX
  - Passive infrared
  - Counters
  - Docking Module
  - Software – DataNet
  - Starter package \$2,500
    - 3 counters, docking module and 3 year DataNet subscription
- You provide “protection” for counter
  - Standard off the shelf electrical box
  - DIY assembly
  - Don’t use big locks that can be used as leverage to break into box

# Trail User Surveys

- All counts are conducted during the course of a trail user survey
- Survey provides information on trail user characteristics
  - Trailheads used
  - Time on the trail
  - Type of activity
- Surveys provide data on trail user spending
  - Amount spent on durable goods
  - Amount spent of consumables
- Survey data enables development on annual user estimate and trail related spending – Economic Impact



# Infrared Counters

## Pine Creek Rail Trail

- Counters were in place from May 26 through September 18, 2006
- Placed by the Pennsylvania Department of Forestry at 7 different locations
- Analysis used data collected between June 2 and July 6
- 21 different assumptions were made to account for various user activities
- An analysis yielded an estimate of annual user visits between 109,000 and 138,000





# Infrared Counters

## Perkiomen Trail



- Trail count conducted from Mid-August through late-November 2008
- Three counters were placed at approximately 7.5 mile intervals along the 19 mile trail
- This is the first time that Rails-to-Trails Conservancy controlled the placement of the counters
- The data collected in September and October was used to develop an estimate of annual user visits
- Only three assumptions were required to develop the estimate
- Annual user visits were estimated at 398,000

# Infrared Counters Schuylkill River Trail

- Beginning in May 2007, the Schuylkill River Heritage Area placed infrared counters at 9 trailhead locations
- Seven separate sections of trail are open along the 125-mile planned route
- Data from these counters is collected on a 12 month basis
- Counter data from 2008 and 2009 was used to develop an estimate of annual usage
- Based upon the counter data it was estimated that there were 802,000 user visits during 2009



# Infrared Counters

## Ghost Town Trail



- Trail count was conducted between April and October 2009.
- Rails-to-Trails Conservancy placed 4 infrared counters along the 36 mile trail
- Trail consisted of two sections at the onset of the project that were joined by the placement of bridges in August
- An analysis of the counter data yielded an annual user estimate of 75,500.



# Infrared Counter

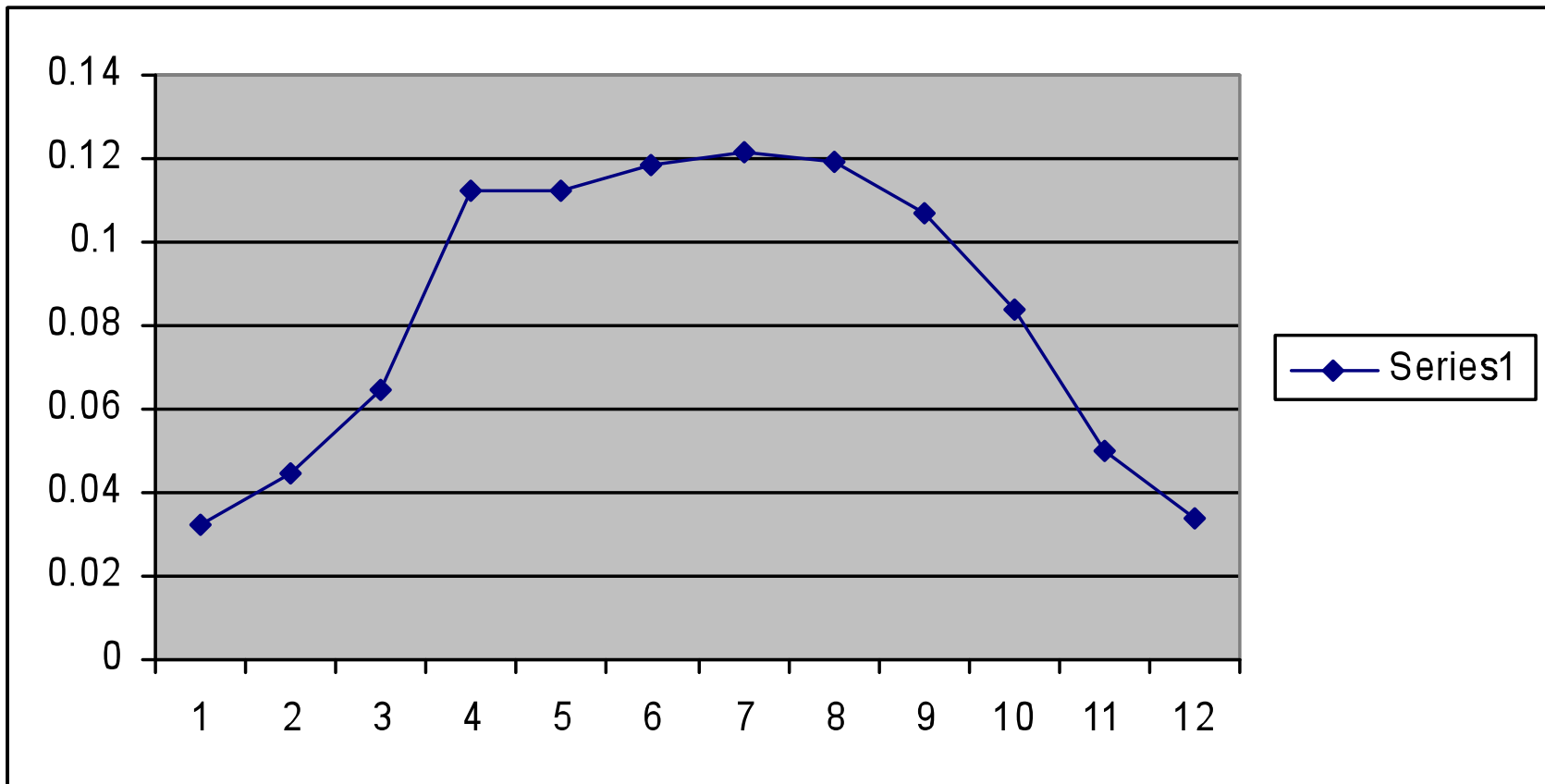
## Blackwood Railroad Trail

- Data collected from May through September 2009 on the 2.7 mile community trail
- Counter placed in approximately the center of the trail
- Monthly total counts ranged from a low of 320 in September to a high 4,188 in June





# Annual Trail User Distribution



Based upon 58 different counter locations and 5 million user counts across the US

# Annual User Estimate

January	3.2%
February	4.4%
March	6.5%
April	11.2%
May	11.2%
June	11.8%
July	12.1%
August	12.0%
September	10.7%
October	8.5%%
November	5.0%
December	3.4%

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May	11.2%	
June	11.8%	
July	12.1%	
August	12.0%	4,212
September	10.7%	
October	8.5%%	
November	5.0%	
December	3.4%	
Estimate		35,100

# Annual User Estimate

Trail Counter Location	Actual Counter Data	Estimated 12-Month Count	Adjusted for passing Multiple Counters	Adjusted for Missing Counts	Adjusted for Out and Back Trips
Any Trail	4,212	35,100	33,019	39,623	20,853



# Challenges



- Placement
  - Car and truck engines throw off a big heat signature





# Challenges



- Vandalism
  - Rural areas are just as susceptible as urban areas
    - Counter on Pine Creek Rail Trail stolen
    - Counter of Ghost Town Trail was vandalized
    - Counter of Metropolitan Branch Trail stolen

# Challenges

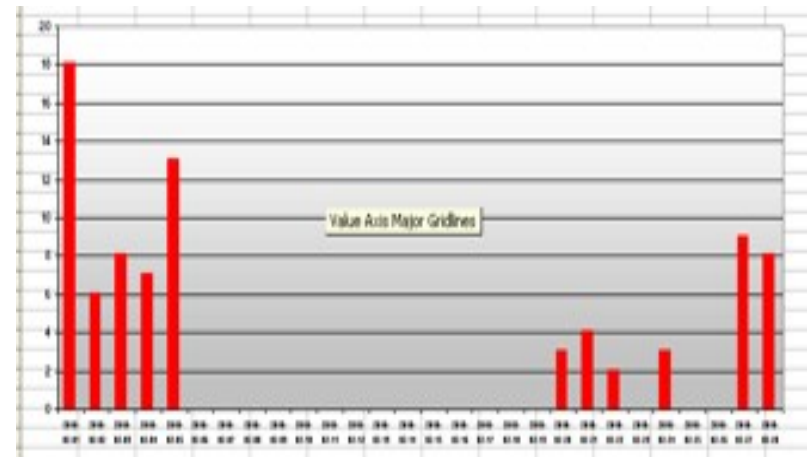


- Accuracy
  - Counters should be “calibrated” by comparing IR counter data with manual count.
  - Under counting
    - 20% + or -

# Challenges



- Weather
  - Between February 6 and February 9, 2010 area received 42" of snow



# How Count Data is Used

- Supports grant requests
  - San Jose, CA - Trail Count 2008 data supported efforts to secure \$1,377,000 in grant funding.
- Fosters new business formations
  - Trail Town Initiative uses trail counts to attract new businesses to towns along the Great Allegheny Passage
- Encourages community investment
  - Portion of hotel tax revenue goes to trail organization
- Helps in developing strategies for trail facility development
  - Parking lots, benches, picnic facilities...