Counting People: Collecting Insightful Data for Improved Conservation, Planning, and Maintenance

Sarah Fioravanti, M.Sc.  
Client Consultant  
sfi@eco-counter.com  
1-866-518-4404
Eco-Counter

- Sales and support office in Montreal, Canada
- Wide range and size of count programs
- Cities, Parks, and Provincial / State Governments

2700+ counters

1100+ counters
What We Do

Professional guidance in the planning stage
High quality, innovative products
Installation and maintenance
Software training
Data validation
Customer care

Develop
Count
Collect
Visualize & Analyze
Communicate
Lifelong technical Support
How We Do It

Sensor
• Reads signal
• Makes decision on counts

Logger
• Stores Data
• Transmits Data
• Provides power to sensor

Software
• View and analyze data on web-based software, Eco-Visio
Eco-Visio: Data Management & Analysis Software
Weekday vs. Weekend Recreational Patterns

Orange County, CA
In California, trails are used differently during the week...

Morning trail use by pedestrians

And cyclists enjoying an evening ride
...versus during the weekend

Both pedestrians and cyclists enjoy the trail early morning.
Case Studies

- City of Sioux Falls
- Marin County
- Fullerton Arboretum
- UCA
- SE Group
Case Studies

City of Sioux Falls

Marin County

Fullerton Arboretum

UCA

SE Group
City of Sioux Falls, South Dakota

PRODUCTS USED
- MULTI
- Eco-Visio

WHO?
- Pedestrians,
cyclists,
trail users

WHERE?
- City of Sioux Falls,
South Dakota

“Counts have really allowed us to hone in on the correct size for the trails. Automatic counters have been very beneficial for us”

Mike Patten, PLA, Park Development Specialist.
Average hourly pedestrian (green) and cyclist (grey) traffic at a trail reveals different peak hours for pedestrian and cyclist traffic respectively.
Outcomes

+ Count data provides valuable evidence for making trail planning decisions
+ Wider trail widths and trail improvements can be justified
+ Overall usage of the trail system can be determined
Case Studies

- City of Sioux Falls
- Marin County Arboretum
- Fullerton Arboretum
- UCA
- SE Group
1) How will trail use change after new trail improvement measures?

2) If there is an increase in use, will this impact wildlife in a negative way?
Endangered Species: What about the Northern Spotted Owls?
Will legalizing bike use on trails displace the hiking community?

Distribution by User Type

- 79.5% Fairway Trail Pedestrian
- 20.5% Fairway Trail Cyclist

Fairway Trail
Case Studies

City of Sioux Falls
Marin County
Fullerton Arboretum
UCA
SE Group
Threatened to be closed…

Cal State Fullerton officials say Arboretum will not be demolished to make room for dorms, but professors, students are concerned

“Having data to back up our arguments has helped strengthen our position to justify keeping the arboretum running.”

-Marta McDaniel, Recorder
(Fullerton Arboretum)
Data Used by the Dept. Of Biology and Envr. Sciences
Justify hiring a greeter during peak hours

9:30 AM – 12:00 PM

2:30 PM – 4:00 PM
Should recreational policies change?

“Lake Maumelle is the principal drinking water source for several major Central Arkansas cities. Lake owner, Central Arkansas Water (CAW), does not allow mountain biking in the watershed due to erosion and water quality concerns. Recent increases in Central Arkansas mountain bike recreation and inadequate dedicated trail systems for mountain bikers have strengthened pressures to remove mountain biking restrictions on Ouachita National Recreation Trail sections in the Lake Maumelle Watershed.”
Data

Field Data → Soil Compaction + Trail Width + Precipitation + User Activity Counts + Total Displaced Sediment

Lab Data → Total Organic Carbon + Sediment Texture + Total Nitrogen + Total Phosphorus

Biweekly Data Collection: January 2019 to June 2019
Silt fence to separate natural sediment (right) from mountain bike displaced sediment (left)

Sediment catch wings for field collection.

Eco-Counter bidirectional infrared trail counter with Bluetooth data retrieval.
CAW Adaptive Management Decision Making Framework (Source: Kleinschmidt, 2016)
Case Studies

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- SE Group
CATAMOUNT TRAIL ASSOCIATION TRAIL COUNTING AND ECONOMIC IMPACT OVERVIEW

DREW POLLAK-BRUCE, CPRP

National Outdoor Recreation Conference, 2019
Introductions
WHO'S IN THE ROOM?

Planning Professionals

- Mountain Resort Planning + Design
- Public Lands + NEPA
- Community Planning
- Landscape Architecture
- Parks, Open Space, Trails and Recreation Planning + Design

Landscape Architects

Drew Pollak-Bruce, CPRP
Associate Planner
dbruce@segroup.com
Project Overview
WHAT WE’VE BEEN UP TO

In a nutshell

- Year-over-year, season-long trail counting in multiple locations along the Catamount Trail and some local chapter trails
- Trying to build an understanding of overall trail use by exploring different sections/character of the Catamount
- Supporting:
  - Economic impact analysis
  - Environmental/Wildlife Analysis
  - Trail and Land Management
A TEAM EFFORT

It started small and really grew from there

- Pro-bono engagement with Catamount Trail Association in 2016/17
  - Rochester-Randolph Area Sports Trail Alliance (RASTA), US Forest Service
  - 2 counting sites and 4 counters: Brandon Gap, Braintree Mountain Forest

- Expanded Partnership in 2017/18
  - CTA, RASTA, US Forest Service, VT FPR, DHASH, CVRPC, TRORPC, WRC, CCRPC
  - 4 counting sites and 9 counters: Brandon Gap, Braintree, Catamount Section 22 (Bolton to Von Trapps), Dutch Hill

- Further Expansion in 2018/19
  - Event more partners, more sites, more counters!
  - Brandon Gap, Braintree, Catamount Section 22 (Bolton to Von Trapps), Dutch Hill, Catamount Section 3 (Route 9 to Somerset Reservoir), Catamount Section 26 (Route 15 to Eden/Crafts bury Town Line), and more!
Assessing Trail Traffic Volumes
GENERAL STATS

“No Name” Backcountry Area, GMNF

- Average Daily Trail Traffic: 18 trail users per day
- Average Weekend Trail Traffic: 38 trail users per day
- Average Weekday Trail Traffic: 10 trail users per day
- Peak Day Trail Traffic: 194 (Saturday 03/10/18)
- Annual Trail Traffic Volume: 1,637 trips
  (1/05/18 through 4/04/18; whole season not recorded)
TRAIL TRAFFIC VOLUME BY DAY OF THE WEEK
“No Name” Backcountry Area, GMNF

Trail Counting and Economic Impact Overview
AVERAGE TRAIL TRAFFIC VOLUME BY HOUR OF THE DAY

“No Name” Backcountry Area, GMNF

No Name Hourly Profile During Weekdays

No Name Hourly Profile During the Weekend

Trail Counting and Economic Impact Overview
Economic Impact Assessment
ECONOMIC IMPACT ASSESSMENT

Modeling Resources

Economic modeling utilizes input-output economic simulations and industry relationship data from the US Census to estimate total economic impacts.

Resources

- Private models (IMPLAN, REMI, etc.)
- NPS Money Generation Model (MGM2)
- SE Group Trail Count and Economic Impact Memo
ECONOMIC IMPACT ASSESSMENT

How do you come up with it?

Trail Counts
(automatic or volunteer) x % of Trail User Types
(local, non-local day, non-local overnight) x Spending Profiles = Economic Impact

Trail Counting and Economic Impact Overview
Brandon Gap Back Country Skiing Zone
Economic Impact of a Powder Day, 2/18/2017

Total Impact
Daily Visits: 171
Total Sales: $199,800
Total Taxes: $29,900
Total Jobs: 3

- Entertainment & Admission Fees: 18%
- Gear, Retail and Souvenirs: 21%
- Groceries and Snacks: 3%
- Transportation: 5%
- Restaurants & Bars: 23%
- Lodging: 30%
Brandon Gap Back Country Skiing Zone
Annual Economic Impact of 2017/18 Season (1/5/18-4/4/18)

Total Impact
Annual Visits: 3,628
Total Sales: $2.1 million
Total Taxes: $318,000
Total Jobs: 34

Category
% of Total Impact

- Entertainment & Admission Fees
  18%
- Gear, Retail and Souvenirs
  21%
- Groceries and Snacks
  3%
- Transportation
  5%
- Restaurants & Bars
  23%
- Lodging
  30%

Note: Federal, State and Local
Cumulative FTE's

Prepared by: SE GROUP
THANK YOU!

DON’T FORGET TO REACH OUT!

DREW POLLAK-BRUCE, CPRP
DBRUCE@SEGROUP.COM
Why Count?

Planning
- Better understanding usage patterns and volumes
- Quantitative data to help make data-driven decisions
- Evaluating trends in levels of activity over time
- Complementing other data sources (Surveys, GPS, etc.)

Managing and Maintaining
- Infrastructure evaluation, maintenance, and prioritization
- Measuring the benefits or demand for facilities
- Identifying key zones and need for trail upgrades

Communicating
- Promote trails using data and infographics
- Data to support funding requests and grants
- Public facing data to increase awareness of recreation
Questions?

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