Michigan Department of Community Health: Building Healthy Communities

An Environmental Approach to Increase Trail Use

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Why Trails?

- Accessibility to no-cost recreational facilities like trails have been identified as elements related to physical activity promotion.
- Recreational trails have also been identified as an environmental support for activity.
- The Center for Disease Control and Prevention's Task Force on Community Preventive Services recommends environmental interventions that include access to trails to promote physical activity.

Why Parks?

- Parks have a variety of activity settings (e.g., tennis courts, trails, playgrounds, playing fields, etc.) yet we know little about specific features related to quantify activity in parks.
  - National Recreation and Park Association entitled*: Step Up to Health-it Starts in the Parks.*
  - The Trust for Public Land also recently disseminated a report entitled: *The Health Benefits of Parks* to illustrate the roles parks have in promoting regular activity.

More on Parks and Trails

- *Self-report* most widely used.
- The vast majority of trail and park-user data collected has focused on characteristics describing little information about the activity patterns of adults who use community trails and parks.

Background on Building Healthy Communities (BHC)

- Michigan is currently ranked 13th worst in the nation in mortality from cardiovascular disease and has the 9th highest rate of obesity in the US.
- Three risk factors are estimated to play a role in nearly 70% of all chronic diseases: poor nutrition, inadequate physical activity, and tobacco use.
- The *BHC* initiative addresses these three risk factors in Michigan using a population-based approach grounded in the theoretical framework of the Social Ecological Model to prevent chronic disease and improve the health of residents.

BHC: The Role of Local Health Departments

- Local health departments are funded to plan, implement, and evaluate evidence-based interventions with a coalition of local partners that focus on changing the policies and environments in their communities.

Background on BHC Interventions

- Grantees have completed or enhanced 72 miles of trail.
- Improved numerous parks since the inception of this initiative.
- Eighteen local health departments from 2007 through 2009 received $1,041,972 to plan and implement community-based interventions.
- Health departments and the coalitions completed an environmental assessment of physical activity prior to developing interventions to determine target areas and opportunities for intervention.

Trail and Park Interventions

- Eleven health departments during two funding cycles for 2007/2008 and 2008/2009 chose to develop or enhance trails in their respective communities to promote physical activity.
- BHC interventions to promote trail use ranged from:
  1. building new trails
  2. extending the distance of current trails
  3. enhancements with trailheads, benches and lighting
  4. trail promotion with signage and building connecting trails between cities
- Seven health departments enhanced existing community parks by establishing walking trails within parks or installing new equipment such as playgrounds.

Why Evaluate Parks and Trails?

- Mostly Free and Egalitarian
- Distribute Resources Equitably
- Who, When, Where
- Contextual Elements Impacting Use
- Open Environment
- Was the Intervention Effective?
- NEED OBJECTIVE DATA TO SUGGEST CHANGES

What is Direct Observation?

- Direct observation is a methodology to classify free living behaviors into distinct categories in order to be analyzed.
- Direct observation of human behavior in both natural and built environments has been used as an objective methodology to study human behavior for over a century.
- It is has been frequently overlooked by physical activity researchers and practitioners.

Direct Observation and Intercept Surveys

- Objective methodologies in concert with survey methods should be utilized.
- Surveys are limited to respondents' perceptions and do not provide contextual information (e.g., trail terrain, air temperature, time of day of trail use, etc.) that could be related to activity behavior.

The System for Observing Play and Recreation in Communities (SOPARC)[a]

- Based on momentary time-sampling.
- Separate scans are made for females and males, and for estimating the age and ethnic groupings of participants.
- Summary counts describe the number of participants by gender, activity modes and levels, and estimated age and gender groupings.
- Proven valid and reliable for gathering data on:
  - user demographics (e.g., age, sex, race)
  - environmental features (e.g., temperature, weather, equipment)
  - user features (e.g., type of activity)
  - physical activity level (e.g., sedentary, walking, very active)

[a]McKenzie et al. System for observing play and recreation in communities (SOPARC): reliability and feasibility measures. *Journal of Physical Activity and Health.* 2006;3:S208-S222.

Rationale for SOPARC

- Activity and recreation are positively associated with good health.
- Investigations of activity participants in "open" environments have been hampered by the lack of an objective tool.

SOPARC PATH CODING FORM

Page ____ of ____

DATE: _____ PARK ID: _____ OBSERVER _____

TARGET AREA: _____ START TIME: _____ END TIME: _____

Person	Gender		Age Group				Ethnicity				Activity Level		
	Female	Male	Child	Teen	Adult	Senior	L	B	W	O	S	W	V
1													
2													
3													
4													
5													
6													
7													
8													
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10													
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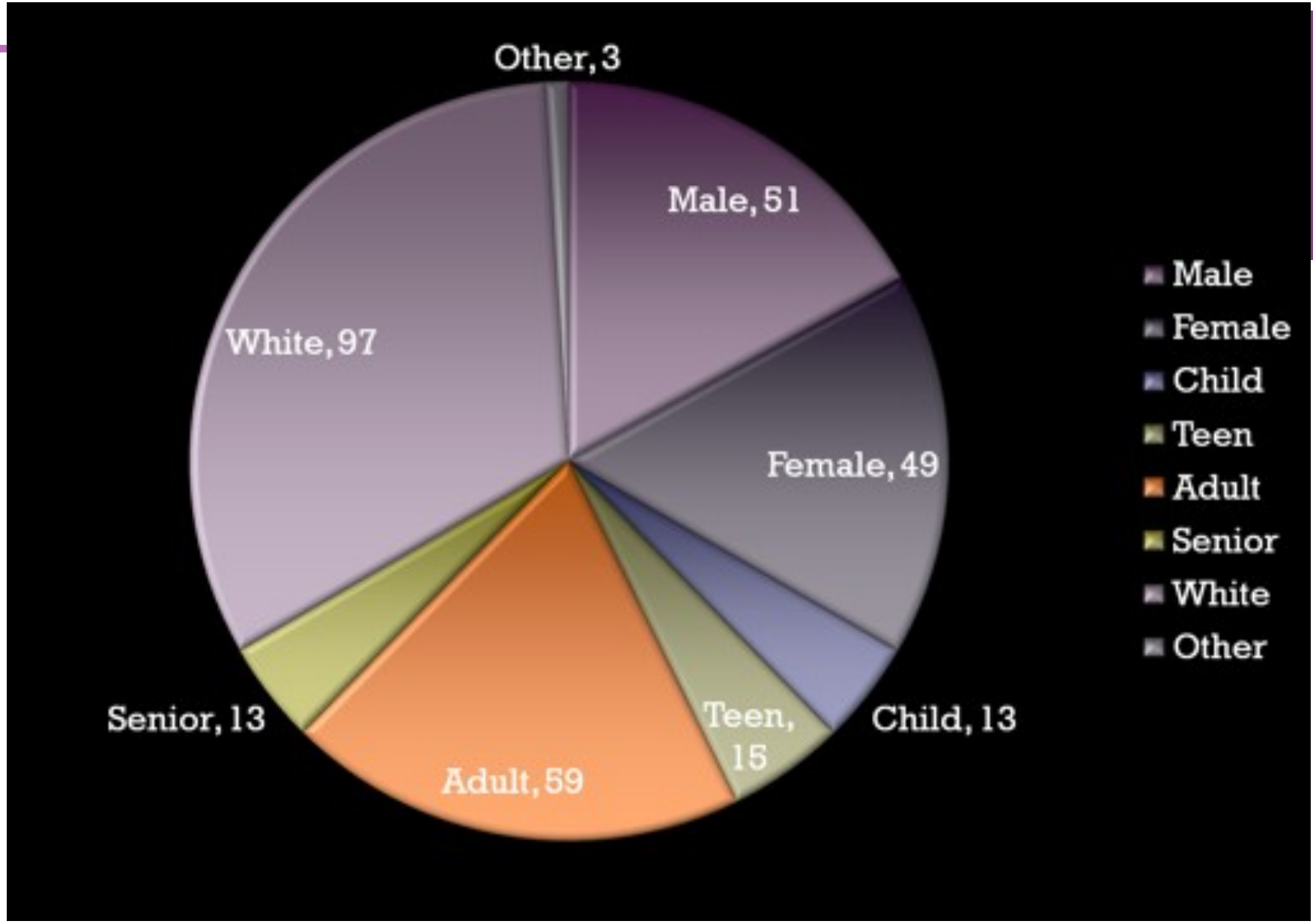
BHC Overall Trail-Use

- To date, (N=7,125) trail users were observed on 17 of Michigan's trails between 2007 and 2009.

		Frequency	Percent
Gender	Male	3638	51%
	Female	3487	49%
Age	Child	896	13%
	Teen	1089	15%
	Adult	4192	59%
	Senior	950	13%
Ethnicity	White	6826	97%
	Other	238	3%


Other, 3
Male, 51
White, 97
Female, 49
Senior, 13
Teen, 15
Child, 13
Adult, 59
Male
Female
Child
Teen
Adult
Senior
White
Other

Trail-Use by Gender

- Fifty-one percent (N=3638) of Michigan trail users were male and 49% (N=3487) were female.
- These findings were consistent with current census estimates for Michigan.

		Female	Male
Age	Child	392(5.5%)	497(7%)
	Teen	434(6.1%)	655(9.2%)
	Adult	2201(31%)	1971(27.8%)
	Senior	448(6.3%)	502(7.1%)

Trail-Use for Gender and Activity Intensity by Age

- Fewer children and teens were observed using Michigan's trails.
- Only 28% of all Michigan trail users were children and teens.
  - Current data suggests that more than 33% of US adolescents, which equates to about 25 million youth are overweight or obese.

Gender	Activity Level	Child	Teen	Adult	Senior
Female	Sedentary Walking Vigorous	87(2.5%) 205(5.9%) 100(2.9%)	44(1.3%) 219(6.3%) 171(4.9%)	109(3%) 1415(41%) 674(19%)	41(1.2%) 327(9.4%) 80(2%)
Male	Sedentary Walking Vigorous	110(3%) 226(6.2%) 161(4.5%)	102(2.8%) 186(5.1%) 367(10%)	167(4.6%) 938(26%) 859(24%)	47(1.3%) 303(8.4%) 151(4.2%)

+ BHC Interventions to Promote Trail-Use: Awareness & Promotion

Trail	Pre (trail users)	Type of Intervention	Post (trail users)
Number 1	N = 206	Extend length of trail; Placement of benches and signage on trail.	N =477
Number 2	N =193	Enhanced two routes of the trail by adding signage.	N = 373
Number 3	N = 214	Extend trail an additional five miles to connect two cities and enhance trail with signage.	N = 381
Number 4	N =168	Connect two cities and enhance trail with signage.	N = 328
Number 5	N =164	Enhance trail by adding signage	N = 323

Air Temperature Related to Number of Trail Users

- The majority of male and female trail users were observed using the trails when the temperatures were above 60 degrees, Fahrenheit.

- Approximately, 80% of users (N=5336) were observed when the ambient temperature was between 61 and 90 degrees.

Intercept Survey Results (Trail)

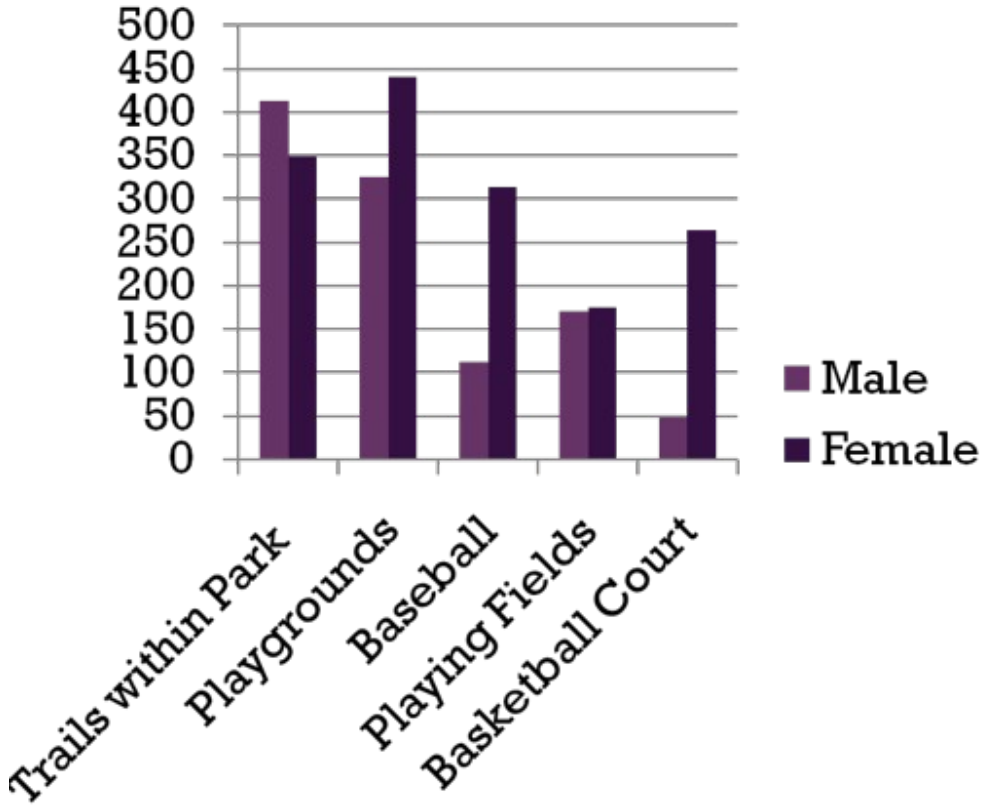
- Eight-hundred and seventy six (N=876) respondents completed the survey during evaluation periods from 2007-2009.
- Many of the intercept survey results were consistent with direct observation findings*.
- Approximately 63% of survey respondents between 2007 and 2009 were 'walking' when asked to complete the survey.
- The majority of respondents were visiting the trail 'with others' (57%; N=493).
- Trail users reported spending 'between 1 and 2 hours' on the trail per visit. In addition, 74% (N=639) of all respondents believed the maintenance of the trails was 'excellent'.

Intercept Survey Results (Trail)

- Approximately 56% of all respondents reported that the safety and security along the trails was 'excellent'.
- Survey respondents tended to be female which is consistent with previous research examining the demographics of trail users.
  - However, this finding was not consistent with the direct observation data.
- Respondents used the trail primarily for exercise or recreation (89%; N=762); while few respondents used Michigan's trails for ***transportation purposes***.
- Approximately 75% of Michigan survey respondents were 35 years of age or older.
- Furthermore, 93% of respondents were white, consistent with Michigan's trail direct observation findings*.

Target Areas in Parks

- The most frequently used target areas within Michigan's parks were trails and playgrounds.
- Approximately 41% (N=1529) of all park users were observed using these two targets.
- The overwhelming majority of users of playgrounds were children and teens.



+ Interventions to Promote Park-Use

- BHC funded interventions to promote increases in park use were identified following five interventions.

Park	Pre (park users)	Type of Intervention	Post (park users)
Number 1	158	Extend length of trail in the park; Placement of benches and signage on trail in the park.	371
Number 2	152	Improve and enhance park by replacing 7 pieces of playground equipment, installing 3 bike racks, putting down wood chips, paving a .25 mile walking path and adding signage to the path.	558
Number 3	22	Implement neighborhood specific non-motorized transportation plans and safety improvement plans.	85
Number 4	79	Improve safety and increase usability of park through installation of benches along a half mile walking path, removal of brush and installation of lighting.	108
Number 5	122	Installed walking path around perimeter of the park.	147

Conclusions and Implications for Increasing ***Trail*** Use among Michigan Residents

- More males use Michigan's trails for physical activity
- White, adults were the primary users of trails
- Fewer children, teens and seniors use Michigan's trails
- Walking was the most common behavior observed on the trail
- Interventions including signage/prom. had significant increases in trail use
- Males used trails for walking and vigorous activity
- Michigan's trails were perceived to be well maintained and relatively safe
- Users tended to visit the trail with someone and spend 1 to 2 hours on the trail each visit

- Based on the summary of findings presented above, additional strategies to promote trail use among children, teens and seniors need to be examined.
- Greater efforts to promote trail use among underserved populations such as minorities should be considered. This is an extremely important element, since the majority of trail users surveyed were white, college graduates.