

# Recreation Usage, Attitude and Awareness Telephone Study

Conducted by:

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#### Background

- The Clean Rivers Program within the Houston-Galveston Area Council (H-GAC) is currently interested in surveying residents around the five area bayous, plus members of the Bayou Preservation Association to determine the frequency of usage of our local bayous. Other cities have performed similar studies using a variety of surveying methodologies.
  - The Clean Rivers Program contacted Creative Consumer Research (CCR), a Texas based market research company to conduct mail surveys and to provide an appropriate proposal for obtaining the frequency of usage information.

**Objectives** 

- The primary objectives are to:
  - Determine the water-related activities Houston-Galveston residents engage in with reference to local bayous
  - Determine usage patterns of local streams/bayous for recreational activities

#### Methodology

- CCR conducted 700 telephone interviews
  - 134 with Bayou Preservation Association members
  - 112 with Braes Bayou residents
  - 114 with Sims Bayou residents
  - 112 with Buffalo Bayou residents
  - 110 with White Oak residents
  - 118 with Cypress Creek residents
- All respondents were required to
  - Be male/female head of household
  - Live in the Houston area
- The survey length was approximately 7-10 minutes



#### Methodology

- Quotas were implemented for gender, age, ethnicity, and area to ensure proper representation of the residents living in specified zip codes corresponding to watersheds
  - The Bayou Preservation Association did not have these quota group assignments

#### Methodology

- Significance testing performed at the 95% confidence level where appropriate
  - The following significant differences where necessary are marked throughout the report:
    - \*=Significantly different than all others at the 95% Confidence Level
    - F=Significantly different than Female at the 95% Confidence Level
    - C=Significantly different than Caucasian at the 95% Confidence Level
    - B=Significantly different than Buffalo Bayou at the 95% Confidence Level
    - R=Significantly different than Cypress Creek at the 95% Confidence Level
    - P=Significantly different than Bayou Preservation Association at the 95% Confidence Level



Dialing Summary by Sample

#### **Last Disposition of Sample**

|   | Total<br>Sample | Bayou<br>Preservation<br>Association | Watershed |
|---|-----------------|--------------------------------------|-----------|
| No Answer   | 6362            | 46                                   | 6316      |
| Busy  | 277             | 9                                    | 268       |
| Answering Machine                                 | 5357            | 115                                  | 5242      |
| Wrong Number                                      | 246             | 55                                   | 191       |
| Generic Call Back                                 | 1075            | 16                                   | 1059      |
| Disconnect  | 3731            | 143                                  | 3588      |
| Appointment Call Back                             | 463             | 32                                   | 431       |
| Initial Refusal                                   | 2238            | 166                                  | 2072      |
| Terminate in the Middle                           | 19              | 1                                    | 18        |
| Language Barrier                                  | 922             | 2                                    | 920       |
| Fax/Modem/Business                                | 977             | 356                                  | 621       |
| Qualified Refusal                                 | 52              | 9                                    | 43        |
| Call Block/Blocked Number                         | 58              | 2                                    | 56        |
| Over Quota  | 279             | 0                                    | 279       |
| Completes   | 700             | 134                                  | 566       |
| Terminate: Don't live in Houston                  | 8               | 3                                    | 5         |
| Terminate: Refused How Long Have Lived in Houston | 10              | 2                                    | 8         |

#### **Executive Summary**

- About half of respondents do not use bayous, creeks or streams for recreation activities
- Of those respondents that use bayous:
  - They primarily walk/run near bayous
  - Use Buffalo and Braes Bayous most often after their area bayou
  - Use bayous, creeks and streams for recreation mostly in the Spring and Summer
- No difference in activities or usage whether or not there are children in the household
- Recommendation: Encourage new and current usage of bayous by making current activities even more appealing
  - Beautify and maintain surrounding bayou landscape, an example is Brush Creek in Kansas City, MO
    - Establish and/or maintain additional walking trails, dog park areas, fishing piers and picnic tables

## Respondent Profile

|  | Total<br>Sample | Bayou<br>Preservation<br>Association | Braes<br>Bayou | Sims<br>Bayou | Buffalo<br>Bayou | White<br>Oak<br>Bayou | Cypress<br>Creek |
|--|-----------------|--------------------------------------|----------------|---------------|------------------|-----------------------|------------------|
| N=   | 700             | 134                                  | 112            | 114           | 112              | 110                   | 118              |
| Ethnicity*                                     |                 |                                      |                |               |                  |                       |                  |
| African American                               | 17%             | 0%                                   | 36%            | 32%           | 22%              | 5%                    | 12%              |
| Asian  | 3%              | 3%                                   | 3%             | 2%            | 5%               | 0%                    | 3%               |
| Caucasian                                      | 57%             | 90%                                  | 40%            | 18%           | 58%              | 57%                   | 72%              |
| Hispanic                                       | 21%             | 2%                                   | 20%            | 46%           | 12%              | 35%                   | 13%              |
| Other  | 2%              | 4%                                   | 1%             | 2%            | 2%               | 2%                    | 1%               |
|  |                 |                                      |                |               |                  |                       |                  |
| Average Age*                                   | 45.50           | 56.92                                | 41.15          | 42.31         | 41.98            | 40.29                 | 48.23            |
|  |                 |                                      |                |               |                  |                       |                  |
| Average Number of<br>Years Lived in<br>Houston | 28.19           | 38.07                                | 25.42          | 31.01         | 21.13            | 28.23                 | 23.55            |

Preservation Association members are older

<sup>\*</sup> Quotas implemented





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## Respondent Profile

|   | Total<br>Sample | Bayou<br>Preservation<br>Association | Braes<br>Bayou | Sims<br>Bayou | Buffalo<br>Bayou | White<br>Oak<br>Bayou | Cypress<br>Creek |
|---|-----------------|--------------------------------------|----------------|---------------|------------------|-----------------------|------------------|
| N=  | 700             | 134                                  | 112            | 114           | 112              | 110                   | 118              |
|   |                 |                                      |                |               |                  |                       |                  |
| Average Household Size                        | 2.98            | 2.40                                 | 3.30           | 3.69          | 2.86             | 2.85                  | 2.91             |
| Number with more than one person in household | 580             | 106                                  | 103            | 103           | 87               | 85                    | 96               |
| Household                                     |                 |                                      |                |               |                  |                       |                  |
| Composition                                   |                 |                                      |                |               |                  |                       |                  |
| Adults only                                   | 50%             | ( 69% )                              | 46%            | 36%           | 49%              | 40%                   | 56%              |
| Adults & children < 6 years                   | 14%             | 6%                                   | 20%            | 19%           | 10%              | 16%                   | 13%              |
| Adults & children 6-17                        | 25%             | 24%                                  | 24%            | 23%           | 29%              | 27%                   | 23%              |
| Adults & children <6 & 6-17                   | 10%             | 1%                                   | 9%             | 18%           | 11%              | 14%                   | 8%               |
| Home Ownership                                |                 |                                      |                |               |                  |                       |                  |
| Owns home                                     | 69%             | (93%)                                | 54%            | 66%           | 61%              | 62%                   | 73%              |
| Rents home                                    | 28%             | 5%                                   | 43%            | 31%           | 38%              | 35%                   | 23%              |
|   |                 |                                      |                |               |                  |                       |                  |

Preservation
Association
members are more
likely to own their
home and not have
children living at
home; probably
empty-nesters





## Overall Usage





## **Usage Summary**

- About half of total respondents have not visited or used a Houston area bayou, creek or stream in their neighborhood
- Bayou Preservation Association members seem more likely than others to use a bayou, creek or stream
  - 22% used in the past week
  - Only 26% have not visited
- Overall, most walk near the bayous, 63% overall, and 78% of Bayou Preservation Association members name walking near as an activity they have done

Running near 26%

Picknicking 24%

Dog walking23%



## **Usage Summary**

- Most use the bayou in another neighborhood to walk
- Summer (59%) and Spring (56%) are the most popular seasons to use bayous, creeks or streams
  - Bayou Preservation Association members appear to use bayous most in the Spring and Fall
- About one in ten have family and friends that visit to use a bayou or use neighborhood bayous during or after it rains
- Children are present around two in five times when others or respondents are using the bayous
  - 28% have seen children at Buffalo Bayou
  - Children are walking (63%) or running (45%) near the bayous
    - 58% of White Oak residents see children walking a dog
    - 45% of Cypress Creek residents see children bank fishing



**Usage Summary** 

- Buffalo Bayou and Braes Bayou tend to get the most universal usage across respondents after their own neighborhood bayou
  - 54% of Bayou Preservation Association members use Buffalo Bayou
- Three in ten see someone use their neighborhood bayou daily
- 3% 6% have gotten sick from bayou-related activities

## Most Recent Usage

| Used within the last | Total<br>Sample | Bayou<br>Preservation<br>Association | Braes<br>Bayou                | Sims<br>Bayou   | Buffalo<br>Bayou | White<br>Oak<br>Bayou | Cypress<br>Creek |
|----------------------|-----------------|--------------------------------------|-------------------------------|-----------------|------------------|-----------------------|------------------|
| N=                   | 700             | 134                                  | 112                           | 114             | 112              | 110                   | 118              |
| Week                 | 9%              | 22%                                  | 5% <sup>P</sup>               | 4% <sup>P</sup> | 8% <sup>P</sup>  | 12%                   | 3% <sup>P</sup>  |
| Month                | 7%              | 14%                                  | 3%                            | 6%              | 4%               | 5%                    | 7%               |
| 3 months             | 3%              | 6%                                   | 3%                            | 2%              | 2%               | 6%                    | 1%               |
| 6 months             | 3%              | 4%                                   | 4%                            | 4%              | 3%               | 1%                    | 0%               |
| 9 months             | 1%              | 1%                                   | 0%                            | 2%              | 1%               | 0%                    | 1%               |
| Year                 | 5%              | 10%                                  | 3%                            | 3%              | 4%               | 7%                    | 5%               |
|                      |                 |                                      |                               |                 |                  |                       |                  |
| Longer than a year   | 16%             | 17%                                  | 10%                           | 13%             | 17%              | 17%                   | 20%              |
| Have not visited     | 56%             | 26%*                                 | 73%                           | 68%             | 62%              | 52% <sup>B</sup>      | 64%              |
|                      |                 |                                      |                               |                 |                  |                       |                  |
|                      | <b>*</b>        | \                                    |                               |                 |                  |                       |                  |
| Half dor             | n't use/visit   |                                      |                               | _               |                  |                       |                  |
|                      |                 | •                                    | ore likely to<br>it/use bayou |                 |                  |                       |                  |

Q2. When was the last time you used a bayou, creek or stream in your neighborhood in the Houston area for recreation?



### **Bayou Activities**

Most walk near; probably use as walking trail

| Activities   | Total<br>Sample | Bayou<br>Preservation<br>Association | Braes<br>Bayou   | Sims<br>Bayou | Buffalo<br>Bayou | White<br>Oak<br>Bayou | Cypress<br>Creek |
|--------------|-----------------|--------------------------------------|------------------|---------------|------------------|-----------------------|------------------|
| <b>V</b> N=  | 305             | 99                                   | 30               | 37            | 43               | 53                    | 43               |
| Walking near | 63%             | 78%                                  | 50% <sup>P</sup> | 68%           | 51% <sup>P</sup> | 64%                   | 44% <sup>P</sup> |
| Running near | 26%             | 24%                                  | 33%              | 24%           | 23%              | 38%                   | 16%              |
| Picnicking   | 24%             | 27%                                  | 23%              | 22%           | 14%              | 19%                   | 33%              |
| Dog Walking  | 23%             | 24%                                  | 17%              | 30%           | 23%              | 30%                   | 9%               |
| Canoeing     | 17%             | 36%                                  | 3%               | 8%            | 12%              | 8%                    | 9%               |
| Bank Fishing | 17%             | 12%                                  | 3% <sup>R</sup>  | 22%           | 23%              | 11% <sup>R</sup>      | 35%              |
| Kayaking     | 10%             | 19%                                  | 0%               | 0%            | 5%               | 9%                    | 9%               |
| None         | 9%              | 3%                                   | 23%              | 5%            | 14%              | 9%                    | 9%               |
|              |                 |                                      |                  |               |                  |                       |                  |

Base: Those who have used bayou, creek or stream

Q3 Which of the following activities have you or your family personally used a bayou, creek or stream in your neighborhood in the Houston area for?





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## **Bayous Have Visited**

| In Own<br>Neighborhood | Total<br>Sample | Bayou<br>Preservation<br>Association | Braes<br>Bayou | Sims<br>Bayou | Buffalo<br>Bayou | White<br>Oak<br>Bayou | Cypress<br>Creek |
|------------------------|-----------------|--------------------------------------|----------------|---------------|------------------|-----------------------|------------------|
| N=                     | 305             | 99                                   | 30             | 37            | 43               | 53                    | 43               |
| Buffalo Bayou          | 29%             | 54%*                                 | 23%            | 11%           | 26%              | 19%                   | 9%               |
| White Oak Bayou        | 12%             | 10%                                  | 0%             | 0%            | 2%               | 49%*                  | 2%               |
| Braes Bayou            | 10%             | 14%                                  | 40%*           | 8%            | 5%               | 0%                    | 0%               |
| Cypress Creek          | 6%              | 11%                                  | 0%             | 0%            | 0%               | 4%                    | 14%              |
| Sims Bayou             | 5%              | 4%                                   | 3%             | 22%*          | 2%               | 0%                    | 0%               |
| Galveston Bay          | 5%              | 4%                                   | 10%            | 3%            | 2%               | 4%                    | 7%               |
| Clear Lake             | 4%              | 9%                                   | 0%             | 0%            | 2%               | 0%                    | 5%               |
| In Another             |                 |                                      |                |               |                  |                       |                  |
| Neighborhood           |                 |                                      |                |               |                  |                       |                  |
| Those have visited     |                 |                                      |                |               |                  |                       |                  |
| in another             | 167             | 69                                   | 14             | 19            | 22               | 25                    | 18               |
| neighborhood           |                 |                                      |                |               |                  |                       |                  |
| Buffalo Bayou          | 23%             | 25%                                  | 21%            | 16%           | 18%              | 28%                   | 22%              |
| Braes Bayou            | 18%             | 29%                                  | 21%            | 16%           | 14%              | 0%                    | 6%               |
| White Oak Bayou        | 13%             | 26%                                  | 0%             | 0%            | 0%               | 12%                   | 0%               |
| Sims Bayou             | 9%              | 16%                                  | 0%             | 21%           | 0%               | 0%                    | 0%               |
| Cypress Creek          | 9%              | 13%                                  | 14%            | 0%            | 0%               | 12%                   | 6%               |
| Armand Bayou           | 8%              | 16%                                  | 14%            | 5%            | 0%               | 0%                    | 0%               |
| Clear Lake             | 7%              | 14%                                  | 0%             | 0%            | 5%               | 0%                    | 0%               |
|                        |                 |                                      |                |               |                  |                       |                  |

Respondents seem to use Buffalo and Braes Bayous the most after their own



## **Bayou Activities**

| Activities in Another<br>Neighborhood | Total<br>Sample | Bayou<br>Preservation<br>Association | Braes<br>Bayou | Sims<br>Bayou | Buffalo<br>Bayou | White<br>Oak<br>Bayou | Cypress<br>Creek |
|---------------------------------------|-----------------|--------------------------------------|----------------|---------------|------------------|-----------------------|------------------|
| N=                                    | 167             | 69                                   | 14             | 19            | 22               | 25                    | 18               |
| Walking near                          | 73%             | 77%                                  | 71%            | 79%           | 59%              | 76%                   | 67%              |
| Picnicking                            | 31%             | 30%                                  | 29%            | 42%           | 14%              | 36%                   | 39%              |
| Running near                          | 28%             | 19%                                  | 36%            | 37%           | 32%              | 32%                   | 33%              |
| Dog Walking                           | 21%             | 22%                                  | 14%            | 16%           | 18%              | 36%                   | 11%              |
| Bank Fishing                          | 18%             | 12%                                  | 7%             | 32%           | 27%              | 12%                   | 33%              |
| Canoeing                              | 14%             | 32%                                  | 0%             | 0%            | 9%               | 0%                    | 0%               |
| Swimming                              | 10%             | 7%                                   | 14%            | 11%           | 9%               | 12%                   | 17%              |
| None                                  | 7%              | 3%                                   | 7%             | 5%            | 14%              | 8%                    | 17%              |
|                                       |                 |                                      |                |               |                  |                       |                  |

Base: Those who have used bayou, creek or stream in another neighborhood

Q7. Which of the following activities have you or your family personally used a bayou, creek or stream in another neighborhood in the Houston area for?

## **Usage Frequency**

| Use Bayou                            | Total<br>Sample | Bayou<br>Preservation<br>Association | Braes<br>Bayou  | Sims<br>Bayou | Buffalo<br>Bayou | White<br>Oak<br>Bayou | Cypress<br>Creek |
|--------------------------------------|-----------------|--------------------------------------|-----------------|---------------|------------------|-----------------------|------------------|
| N=                                   | 700             | 134                                  | 112             | 114           | 112              | 110                   | 118              |
| Daily                                | 3%              | 5%                                   | 4%              | 1%            | 3%               | 2%                    | 0%               |
| Weekly                               | 9%              | 20%                                  | 6% <sup>P</sup> | 7%            | 7%               | 12%                   | 3% <sup>P</sup>  |
| Monthly                              | 9%              | 21%                                  | 2% <sup>P</sup> | 11%           | 5% <sup>P</sup>  | 7%                    | 8%               |
| Yearly                               | 7%              | 12%                                  | 5%              | 5%            | 8%               | 7%                    | 6%               |
| Rarely                               | 13%             | 14%                                  | 10%             | 13%           | 12%              | 17%                   | 10%              |
| Never                                | 58%             | 27%*                                 | 71%             | 63%           | 64%              | 55%                   | 72%              |
| Primarily during                     |                 |                                      |                 |               |                  |                       |                  |
| Those who use bayou, creek or stream | 295             | 98                                   | 32              | 42            | 40               | 50                    | 33               |
| Summer                               | 59%             | 55%                                  | 53%             | 64%           | 73%              | 58%                   | 58%              |
| Spring                               | 56%             | 80%*                                 | 41%             | 38%           | 45%              | 56%                   | 33%              |
| Fall                                 | 48%             | 76%*                                 | 41%             | 31%           | 43%              | 34%                   | 27%              |
| Winter                               | 35%             | 55%*                                 | 31%             | 24%           | 30%              | 24%                   | 18%              |
| All seasons                          | 6%              | 7%                                   | 6%              | 2%            | 5%               | 8%                    | 3%               |
|                                      |                 |                                      |                 |               |                  |                       |                  |

Q8. How frequently do you use your neighborhood bayou, creek or stream for recreation?

Q9. In what season do you primarily use your neighborhood stream for recreation?





## Usage

|  | Total Sample<br>N=700 |  |
|--|-----------------------|--|
| Family/friends visit you at home to use neighborhood bayou, creek or |                       |  |
| stream   | 11%                   |  |
| Uses neighborhood bayous, streams or                                 |                       |  |
| creeks when raining or shortly after rain                            | 13%                   |  |
| Witnessed someone using  |                       |  |
| neighborhood bayou, creek or   |                       |  |
| stream   | 45%                   |  |
| Children Present when  | N=318                 |  |
| Respondent used bayou, creek or                                      |                       | Four out of ten see                        |
| stream   | <b>36%</b>            | children using a bayou,<br>creek or stream |
| Others were using the bayou, creek or                                |                       | Greek or stream                            |
| stream   | 42%                   |  |

Q10. Do you have family or friends who visit you at your home in order to use the bayou, creek or stream in your neighborhood and participate in recreation activities?

Q13. Were children present when you or others were using the bayou, creek or stream for recreation?





Q11. Do you use neighborhood bayous or streams for recreation when it is raining or shortly after it has rained?

Q12. Have you ever witnessed anyone else using a bayou, creek or stream in your neighborhood for recreation?

## Usage

|                               | Bayou<br>Preservation<br>Association | Braes<br>Bayou  | Sims<br>Bayou    | Buffalo<br>Bayou | White<br>Oak<br>Bayou | Cypress<br>Creek |
|-------------------------------|--------------------------------------|-----------------|------------------|------------------|-----------------------|------------------|
| N=                            | 134                                  | 112             | 114              | 112              | 110                   | 118              |
| Family/friends visit you at   |                                      |                 |                  |                  |                       |                  |
| home to use                   |                                      |                 |                  |                  |                       |                  |
| neighborhood bayou,           |                                      |                 |                  |                  |                       |                  |
| creek or stream               | 20%                                  | 6% <sup>P</sup> | 10%              | 5% <sup>P</sup>  | 15%                   | 6% <sup>P</sup>  |
| Uses neighborhood bayous,     |                                      |                 |                  |                  |                       |                  |
| streams or creeks when        |                                      |                 |                  |                  |                       |                  |
| raining or shortly after rain | 30%*                                 | 5%              | 7%               | 16%              | 12%                   | 5%               |
| Witnessed someone using       |                                      |                 |                  |                  |                       |                  |
| neighborhood bayou,           |                                      |                 |                  |                  |                       |                  |
| creek or stream               | 69%*                                 | 34%             | 37%              | 40%              | 50% <sup>B</sup>      | 39%              |
| Those who witnessed           |                                      |                 |                  |                  |                       |                  |
| children                      | 92                                   | 38              | 42               | 45               | 55                    | 46               |
| Children Present when         |                                      |                 |                  |                  |                       |                  |
| Respondent used bayou,        |                                      |                 |                  |                  |                       |                  |
| creek or stream               | 45%                                  | 39%             | 24% <sup>B</sup> | (42%)            | 33%                   | 26% <sup>B</sup> |
| Others were using the         |                                      |                 |                  |                  |                       |                  |
| bayou, creek or stream        | 36%                                  | 42%             | 55% <sup>B</sup> | / 33%            | 45%                   | 46%              |

More likely to see children at Buffalo Bayou than Sims Bayou or Cypress Creek when respondent uses



## Bayous Have Seen Children Visit

| In Own<br>Neighborhood | Total<br>Sample | Bayou<br>Preservation<br>Association | Braes<br>Bayou | Sims<br>Bayou | Buffalo<br>Bayou | White<br>Oak<br>Bayou | Cypress<br>Creek |
|------------------------|-----------------|--------------------------------------|----------------|---------------|------------------|-----------------------|------------------|
| N=                     | 248             | 74                                   | 31             | 33            | 34               | 43                    | 33               |
| Buffalo Bayou          | 28%             | 53%*                                 | 23%            | 6%            | (29%)            | 21%                   | 9%               |
| White Oak Bayou        | 19%             | 15%                                  | 6%             | 0%            | )%               | 72%*)                 | 9%               |
| Braes Bayou            | 11%             | 15%                                  | 32%            | 12%           | 6%               | 0%                    | 0%               |
| Cypress Creek          | 9%              | 14%                                  | 3%             | 0%            | 0%               | 2%                    | 33%*             |
| Armand Bayou           | 8%              | 20%                                  | 6%             | 6%            | 0%               | 0%                    | 0%               |
|                        |                 |                                      |                |               |                  |                       |                  |

Base: Those who witnessed children using bayou, creek or stream

# Bayou Activities of Children

| Activities   | Total<br>Sample | Bayou<br>Preservation<br>Association | Braes<br>Bayou   | Sims<br>Bayou | Buffalo<br>Bayou | White<br>Oak<br>Bayou | Cypress<br>Creek |
|--------------|-----------------|--------------------------------------|------------------|---------------|------------------|-----------------------|------------------|
| N=           | 248             | 74                                   | 31               | 33            | 34               | 43                    | 33               |
| Walking near | 63%             | 70% <sup>R</sup>                     | 65% <sup>R</sup> | 58%           | 68% <sup>R</sup> | 65% <sup>R</sup>      | 42%              |
| Running near | 45%             | 45%                                  | 45%              | 45%           | 50%              | 49%                   | 36%              |
| Dog Walking  | 35%             | 34%                                  | 39%              | 30%           | 15%              | 58% <sup>B</sup>      | 30%              |
| Picnicking   | 31%             | 39%                                  | 26%              | 24%           | 32%              | 33%                   | _21%_            |
| Bank Fishing | 30%             | 27%                                  | 23%              | 36%           | 32%              | 21%                   | 45%              |
| Canoeing     | 19%             | 41%                                  | 3% <sup>P</sup>  | 21%           | 15%              | 5% <sup>P</sup>       | 6% <sup>P</sup>  |
| Swimming     | 15%             | 8%                                   | 29%              | 12%           | 15%              | 14%                   | 21%              |
| Wading       | 12%             | 12%                                  | 13%              | 3%            | 12%              | 7%                    | 24%              |
| Kayaking     | 11%             | 26%*                                 | 3%               | 9%            | 3%               | 5%                    | 6%               |
| Wade Fishing | 10%             | 8%                                   | 16%              | 9%            | 12%              | 7%                    | 9%               |
| None         | 5%              | 7%                                   | 6%               | 3%            | 3%               | 7%                    | 3%               |
|              |                 |                                      |                  |               |                  |                       |                  |

Base: Those who have witnessed children using a bayou, creek or stream

Q15. Which of the following recreation activities did you see the children participating in at the bayou, creek or stream?



## **Usage Frequency of Others**

| See Others Use<br>Bayou | Total<br>Sample | Bayou<br>Preservation<br>Association | Braes<br>Bayou   | Sims<br>Bayou | Buffalo<br>Bayou | White<br>Oak<br>Bayou | Cypress<br>Creek |
|-------------------------|-----------------|--------------------------------------|------------------|---------------|------------------|-----------------------|------------------|
| N=                      | 318             | 92                                   | 38               | 42            | 45               | 55                    | 46               |
| Daily                   | <b>(31%)</b>    | 27%                                  | 39%              | 26%           | 33%              | 42%                   | 20%              |
| Weekly                  | / 19%           | 24%                                  | 16%              | 19%           | 20%              | 22%                   | 9%               |
| Monthly                 | 12%             | 21%                                  | 5%               | 19%           | 4%               | 11%                   | 4%               |
| Yearly /                | 8%              | 8%                                   | 18%              | 5%            | 7%               | 4%                    | 11%              |
| Rarely                  | 25%             | 17% <sup>R</sup>                     | 18% <sup>R</sup> | 29%           | 29%              | 18% <sup>R</sup>      | 46%              |
| Never /                 | 4%              | 2%                                   | 3%               | 2%            | 7%               | 2%                    | 11%              |
|                         |                 |                                      |                  |               |                  |                       |                  |

About one-third have seen others use the bayous each day

Base: Those who have witnessed someone using a bayou, creek or stream in their neighborhood

Q16. How frequently do you see others using your neighborhood bayou, creek or stream for recreation?





## **Experienced Illnesses?**

|                   | Total<br>Sample | Bayou<br>Preservation<br>Association | Braes<br>Bayou | Sims<br>Bayou | Buffalo<br>Bayou | White<br>Oak<br>Bayou | Cypress<br>Creek |
|-------------------|-----------------|--------------------------------------|----------------|---------------|------------------|-----------------------|------------------|
| N=                | 700             | 134                                  | 112            | 114           | 112              | 110                   | 118              |
| Yes, myself       | 1%              | 1%                                   | 2%             | 0%            | 2%               | 0%                    | 2%               |
| Yes, my children  | 1%              | 1%                                   | 0%             | 2%            | 1%               | 1%                    | 2%               |
| Yes, someone else | 3%              | 4%                                   | 4%             | 4%            | 3%               | 3%                    | 2%               |
| No                | 95%             | 95%                                  | 94%            | 95%           | 96%              | 96%                   | 97%              |
|                   |                 |                                      |                |               |                  |                       |                  |

Most have not become sick as a result of using a bayou, creek or stream

Q16. Have you, your children or someone else you know ever gotten sick with any type of gastrointestinal illness after participating in recreation activities in the bayou, creek or stream in your neighborhood?





#### Households with Children





## Household Type Summary

- Adult households and households with children have no observed differences in terms of activities and usage rates
  - Walking and running near a bayou are the primary activities both household types do at their or another neighborhood bayou

## Respondent Profile

|  | Adults<br>Only | With<br>Children |
|--|----------------|------------------|
| N=   | 288            | 285              |
| Ethnicity                                      |                |                  |
| African American                               | 13%            | 24%              |
| Asian  | 3%             | 2%               |
| Caucasian                                      | 66%            | 42%              |
| Hispanic                                       | 15%            | 31%              |
| Other  | 2%             | 2%               |
|  |                |                  |
| Average Age                                    | 50.44          | 38.98            |
|  |                |                  |
| Average Number of<br>Years Lived in<br>Houston | 30.27          | 24.86            |

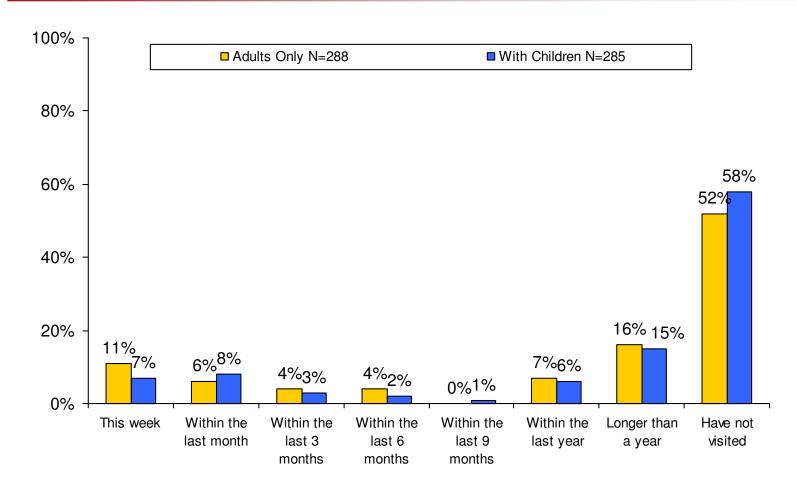
Non-child households tend to be older

|                             | Adults<br>Only | With Children |
|-----------------------------|----------------|---------------|
| N=                          | 288            | 285           |
|                             |                |               |
| Average Household<br>Size   | 2.56           | 4.25          |
| Household                   |                |               |
| Composition                 |                |               |
| Adults only                 | 100%           | 0%            |
| Adults & children < 6 years | 0%             | 29%           |
| Adults & children 6-17      | 0%             | 51%           |
| Adults & children <6 & 6-17 | 0%             | 21%           |
| Home Ownership              |                |               |
| Owns home                   | 77%            | 65%           |
| Rents home                  | 20%            | 34%           |





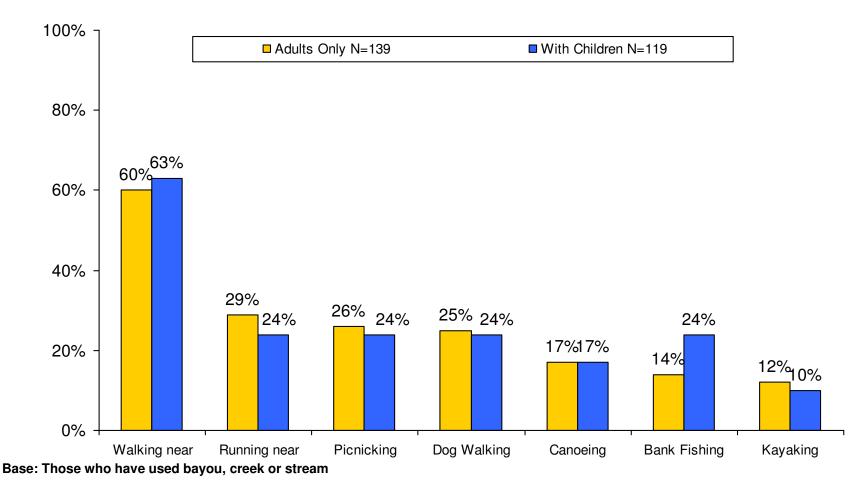
## Most Recent Usage



Q2. When was the last time you used a bayou, creek or stream in your neighborhood in the Houston area for recreation?



## **Bayou Activities**



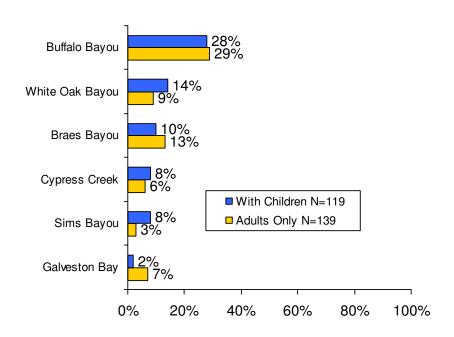
Q3 Which of the following activities have you or your family personally used a bayou, creek or stream in your neighborhood in the Houston area for? 31

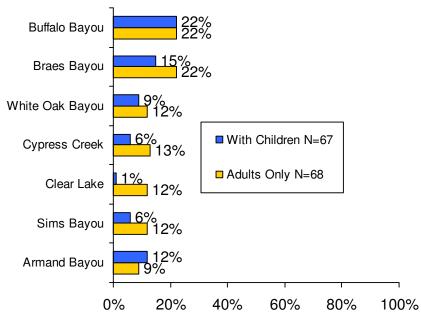


#### **Bayous Have Visited**

#### In Own Neighborhood

#### In Another Neighborhood



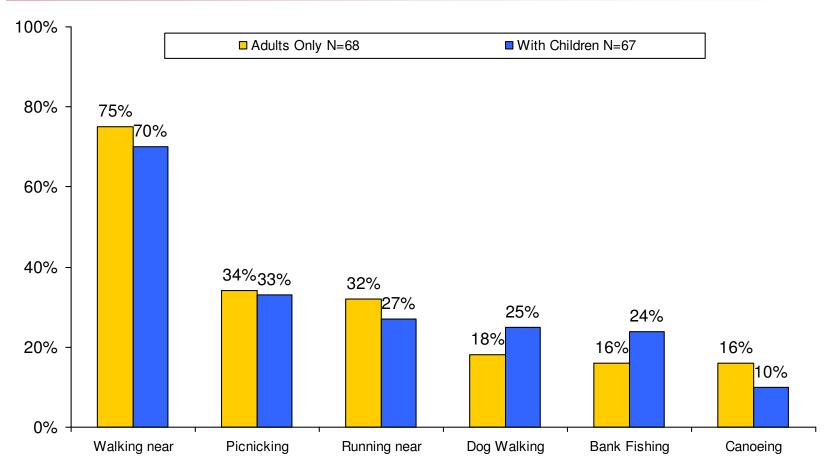


Base: Those who have used bayou, creek or stream in another neighborhood

Q4./Q6. Which bayou, creek or stream(s) have you visited in your/another Houston area neighborhood for recreation?



#### **Bayou Activities**

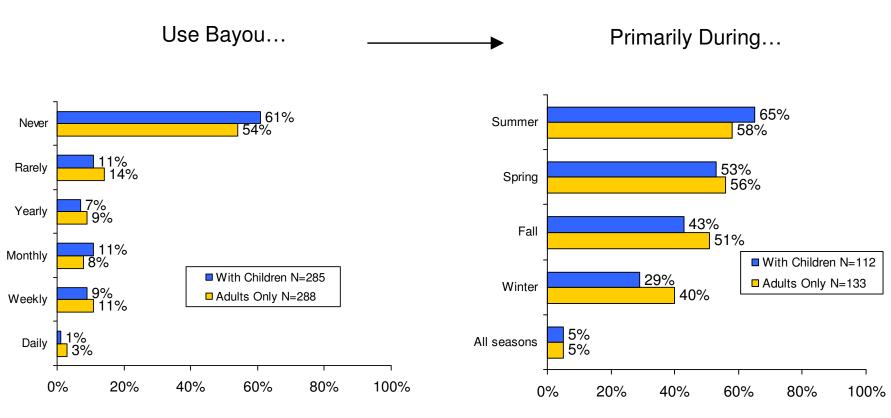


Base: Those who have used bayou, creek or stream in another neighborhood

Q7. Which of the following activities have you or your family personally used a bayou, creek or stream in another neighborhood in the Houston area for?

•

## **Usage Frequency**



Base: Those who have used bayou, creek or stream in their neighborhood

Q8. How frequently do you use your neighborhood bayou, creek or stream for recreation?

Q9. In what season do you primarily use your neighborhood stream for recreation?





## Usage

|  | Adults Only<br>N=288 | With Children<br>N=285 |
|--|----------------------|------------------------|
| Family/friends visit you at home to use neighborhood bayou, creek or |                      |                        |
| stream   | 12%                  | 10%                    |
| Uses neighborhood bayous, streams or                                 |                      |                        |
| creeks when raining or shortly after rain                            | 14%                  | 11%                    |
| Witnessed someone using  |                      |                        |
| neighborhood bayou, creek or   |                      |                        |
| stream   | 47%                  | 46%                    |
| Children Present when  | N=136                | N=131                  |
| Respondent used bayou, creek or                                      |                      |                        |
| stream   | 35%                  | 40%                    |
| Others were using the bayou, creek or                                |                      |                        |
| stream   | 41%                  | 45%                    |

Q10. Do you have family or friends who visit you at your home in order to use the bayou, creek or stream in your neighborhood and participate in recreation activities?

Q13. Were children present when you or others were using the bayou, creek or stream for recreation?





Q11. Do you use neighborhood bayous or streams for recreation when it is raining or shortly after it has rained?

Q12. Have you ever witnessed anyone else using a bayou, creek or stream in your neighborhood for recreation?

### Bayous Have Seen Children Visit

| In Own          | Adults | With     |
|-----------------|--------|----------|
| Neighborhood    | Only   | Children |
| N=              | 103    | 111      |
| Buffalo Bayou   | 28%    | 28%      |
| White Oak Bayou | 21%    | 15%      |
| Braes Bayou     | 14%    | 9%       |
| Cypress Creek   | 10%    | 8%       |
| Armand Bayou    | 10%    | 6%       |
|                 |        |          |

| Activities   | Adults<br>Only | With<br>Children |  |
|--------------|----------------|------------------|--|
| N=           | 103            | 111              |  |
| Walking near | 59%            | 66%              |  |
| Running near | 41%            | 48%              |  |
| Dog Walking  | 33%            | 41%              |  |
| Picnicking   | 34%            | 31%              |  |
| Bank Fishing | 26%            | 37%              |  |
| Canoeing     | 22%            | 19%              |  |
| Swimming     | 12%            | 19%              |  |
| Wading       | 13%            | 13%              |  |
| Kayaking     | 10%            | 14%              |  |
| Wade Fishing | 9%             | 12%              |  |
|              |                |                  |  |

Base: Those who have seen children use a

bayou, creek or stream

Q14. Which bayou(s) or stream(s) have you seen people take children to/taken children to for recreation purposes?

Q15 Which of the following recreation activities did you see the children participating in at the bayou, creek or stream?





# Usage Frequency of Others

| See Others Use | Adults | With     |
|----------------|--------|----------|
| Bayou          | Only   | Children |
| N=             | 136    | 131      |
| Daily          | 26%    | 35%      |
| Weekly         | 22%    | 18%      |
| Monthly        | 8%     | 14%      |
| Yearly         | 9%     | 8%       |
| Rarely         | 29%    | 22%      |
| Never          | 4%     | 3%       |
|                |        |          |

Base: Those who have seen others use a bayou, creek or stream

Q16. How frequently do you see others using your neighborhood bayou, creek or stream for recreation?





# **Experienced Illnesses?**

|                   | Adults | With     |
|-------------------|--------|----------|
|                   | Only   | Children |
| N=                | 288    | 285      |
| Yes, myself       | 1%     | 1%       |
| Yes, my children  | 0%     | 2%       |
| Yes, someone else | 3%     | 3%       |
| No                | 96%    | 94%      |
|                   |        |          |

Q16. Have you, your children or someone else you know ever gotten sick with any type of gastrointestinal illness after participating in recreation activities in the bayou, creek or stream in your neighborhood?



#### **Ethnic and Gender Differences**





# Demographic Summary

- Caucasians are more likely than other ethnic groups to have used a bayou
  - More likely than African Americans to have used a neighborhood bayou
  - More likely than Hispanics or African Americans to have used a bayou in another neighborhood
  - Caucasians use bayous throughout the year more than African Americans and Hispanics
  - Caucasians are more likely than the other ethnic groups to use bayous for recreation during or after it rains

### Demographic Summary

- Men seem more likely than women to use bayous for recreation
  - 62% of women say they have never used a neighborhood bayou, creek or stream compared to 52% of men
  - More men (51%) than women (42%) have used a bayou during or after it has rained



### Most Recent Usage

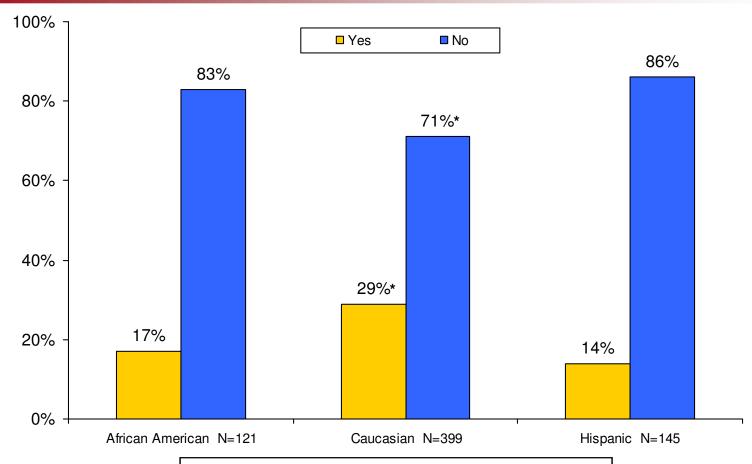
| Used within the last | Total<br>Sample | Male             | Female | Female African American |     | Hispanic |
|----------------------|-----------------|------------------|--------|-------------------------|-----|----------|
| N=                   | 700             | 288              | 412    | 121                     | 399 | 145      |
| Week                 | 9%              | 14%              | 6%     | 4%                      | 12% | 6%       |
| Month                | 7%              | 6%               | 7%     | 3%                      | 8%  | 6%       |
| 3 months             | 3%              | 3%               | 4%     | 5%                      | 3%  | 3%       |
| 6 months             | 3%              | 4%               | 1%     | 2%                      | 3%  | 2%       |
| 9 months             | 1%              | 1%               | 0%     | 1%                      | 1%  | 1%       |
| Year                 | 5%              | 7%               | 5%     | 2%*                     | 6%  | 6%       |
|                      |                 |                  |        |                         |     |          |
| Longer than a year   | 16%             | 16%              | 16%    | 7%                      | 17% | 19%      |
| Have not visited     | 56%             | 49% <sup>F</sup> | 61%    | 75%                     | 50% | 59%      |
|                      |                 |                  |        |                         |     |          |

Men are more likely to have visited/used than women

African Americans are less likely than others to have used in the past year



# Used Bayou in Another Area



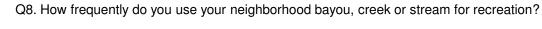
Caucasians are more likely than African Americans and Hispanics to have used bayous in another area



# **Usage Frequency**

| Use Bayou | Total<br>Sample | Male             | Female | African<br>American | Caucasian | Hispanic |
|-----------|-----------------|------------------|--------|---------------------|-----------|----------|
| N=        | 700             | 288              | 412    | 121                 | 399       | 145      |
| Daily     | 3%              | 3%               | 2%     | 2%                  | 3%        | 1%       |
| Weekly    | 9%              | 10%              | 9%     | 2%                  | 11%       | 9%       |
| Monthly   | 9%              | 11%              | 8%     | 8%                  | 10%       | 10%      |
| Yearly    | 7%              | 9%               | 6%     | 9%                  | 8%        | 5%       |
| Rarely    | 13%             | 14%              | 12%    | 7%                  | 15%       | 11%      |
| Never     | 58%             | 52% <sup>F</sup> | 62%    | 71%                 | 52%*      | 63%      |
|           |                 |                  |        |                     |           |          |

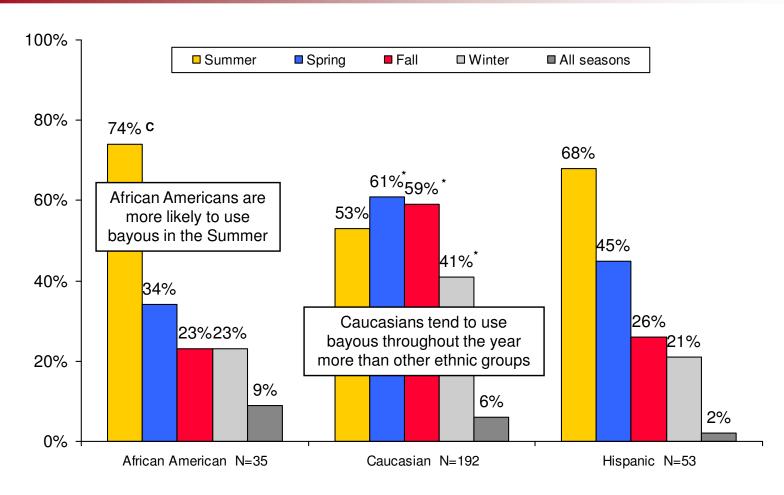
Men and Caucasians are more likely to use neighborhood bayous







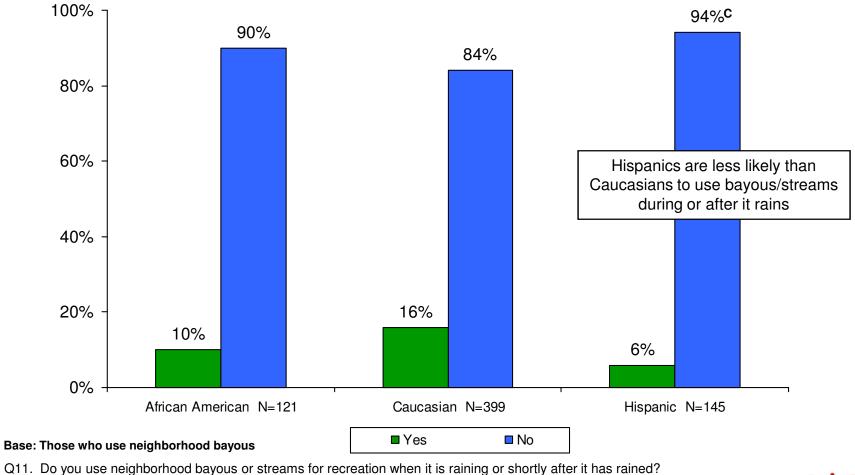
# **Usage Season**

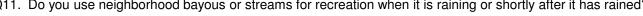


Base: Those who use neighborhood bayous

45

# Usage After/During the Rain







#### Seen Others Use

|  | Total<br>Sample | Male             | Female | African<br>American | Caucasian | Hispanic |
|--|-----------------|------------------|--------|---------------------|-----------|----------|
| N=   | 700             | 288              | 412    | 121                 | 399       | 145      |
| During or After a Rain   | 45%             | 51% <sup>F</sup> | 42%    | 31%                 | 52%*      | 37%      |
|  |                 |                  |        |                     |           |          |
| Those who saw children participating in recreation activities in the bayou | 248             | 112              | 136    | 30                  | 159       | 44       |
| Seen children picknicking at a bayou, creek or stream                      | 31%             | 38% <sup>F</sup> | 26%    | 20%                 | 32%       | 34%      |
|  |                 |                  |        |                     |           |          |

Men and Caucasians are more likely to see others using a bayou during/after it rains

Q11. Do you use neighborhood bayous or streams for recreation when it is raining or shortly after it has rained?
Q15. Which of the following recreation activities did you see the children participating in at the bayou, creek or stream?





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# **Appendix**





#### **Provided Email**

