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ANNOTATED BIBLIOGRAPHY

GATEWAY NATIONAL RECREATION AREA EXISTING SOCIAL SCIENCE STUDIES

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PREPARED FOR:
GATEWAY NATIONAL RECREATION AREA

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INTRODUCTION

Gateway National Recreation Area (hereafter Gateway) and the National Park Service Social Science Branch (NPS SSB) contracted RSG to lead a social science needs assessment for the park to identify social science needs and research priorities for Gateway. A central component of the social science needs assessment process is to understand previously conducted social science research and important social science themes at Gateway — this annotated bibliography serves to provide a concise summary of this existing social science knowledge. Gateway and the NPS SSB provided RSG with fifteen documents related to social science themes and previous social science work completed at Gateway in preparation for the 2016 Gateway social science needs assessment. An annotated entry was created for each document including the APA citation, a brief narrative summary of the document as it relates to social science research and themes, and a summary table providing additional detail on groups targeted, research methods and design, and results and recommendations. For documents that included references to Gateway among other park units and/or studies, only the portion related to Gateway was reviewed in detail. Additionally, some of the table fields were not applicable to all reviewed documents; where this occurred “N/A” is included in the table to indicate that the field was not applicable.

The documents reviewed include the following, ordered as they appear in the alphabetical bibliography entries that follow:

1. Jamaica Bay Wildlife Refuge Visitor Use Study (1975)
2. Race, Ethnicity, and Use of the National Park System (1999)
3. The Changing Traditional Uses of Jamaica Bay, New York (2012)
4. Winter Monitoring of Beach Use at Fort Tilden and Breezy Point, Gateway National Recreation Area (2000)
5. Visitor Services Project Gateway National Recreation Area (1991)
6. Value analysis study for Gateway Education Center, Fort Wadsworth Building 210, Great Kills Field Station (1997)
7. Phase 1 Project Report: National Park Service Coastal Visitor Impact Monitoring (2003)
8. National Park Service Coastal Visitor Impact Monitoring Phase 2 Report (2003)
9. A New Vision for a Great Urban National Park: Gateway National Recreation Area Final General Management Plan Environmental Impact Statement (2014)
10. Gateway National Recreation Area Personal Watercraft Use Environmental Assessment (2003)
11. Gateway National Recreation Area: How might future warming alter visitation? (2015)
12. Gateway National Recreation Area Visitor Use Study (2015)
13. Summer Monitoring of Beach Use at Plum Island Gateway National Recreation Area Spermacetti Cove, Sandy Hook Unit (2002)
14. Gateway National Recreation Area – Floyd Bennett Field Visitor Study (2004)
15. William Ryan Visitor Center Gateway National Recreation Area Interpretive Prospectus (1983)

1. Cooperative Research Unit. (1976). Jamaica Bay Wildlife Refuge visitor use study.

A three-part study of visitor use and impact was conducted at Jamaica Bay Wildlife Refuge (JBWR) in 1975. The study collected data on the perceptions and attitudes of organizational leaders with an interest in JBWR, identified visitor use patterns, and evaluated visitor use impacts on natural resources, particularly migratory birds. Researchers recorded 8-months of visitor behavior observations, conducted a breeding-bird census on the islands of Jamaica Bay, interviewed 18 organizational leaders, and received 814 completed mail-back survey questionnaires from JBWR visitors. Observational results indicate visitors tend to visit during the migratory season, on weekends, and during weekday mornings. The breeding bird study confirmed the use and importance of Jamaica Bay islands as migratory bird breeding habitat. Data from both the interview and survey components confirm observed visitor use trends and show consensus among visitors and organizational leaders for the continuation of non-development and restricted use at JBWR. Study findings suggest the following with respect to existing management practices: 1) reassess the permit policy (in 1975) with consideration for returning to previous policy of more restricted use; 2) increase personnel support for existing education programs; 3) restrict access to Jamaica Bay islands to protect migratory bird breeding; and 4) patrol and monitor nesting areas.

STUDY COMPONENT	DETAILED DESCRIPTION
Year	1975
Purpose	Identify visitor opinions, use patterns, and impacts at JBWR
Population	<i>Observation Phase:</i> JBWR visitors from Feb. – Oct. 1975 <i>Interview Phase:</i> Leaders of environmental organizations which utilize JBWR in the New York City and Long Island areas <i>Survey Phase:</i> Visitors that obtained a permit to visit JBWR from January 1 to September 1, 1975
Sample Technique	<i>Observation Phase:</i> Onsite convenience sample of visitors to JBWR during specific observation days and times <i>Interview Phase:</i> Mailed invitation to identified organizational leaders <i>Survey Phase:</i> Mailed survey to all persons who had obtained a permit to visit JBWR
Data Collection	<i>Observation Phase:</i> Weekly observations of visitor behavior, including areas of use, hours of arrival, group composition, and rule infractions <i>Interview Phase:</i> In-person or phone, semi-structured interviews <i>Survey Phase:</i> Mail-back paper survey booklet, no postcard or follow-up mailing sent
Results	<i>Observation Phase:</i> Annual peak visitation occurs during bird migration seasons; weekly peaks occur on weekends and during the morning hours. Visitors go to the West Pond Area more often than the East Pond Area.

STUDY COMPONENT	DETAILED DESCRIPTION
	<i>Interview Phase:</i> Leaders expressed a “wait and see” approach to evaluating NPS management of JBWR, a need for a full-time biologist and caretaker, and strong concern and support for maintaining JBWR in its current state, without development or increases to visitation. <i>Survey Phase:</i> Visitors average between 5 and 6 visits per year, with migration seasons being the most popular seasons. West Pond Area is the primary area of use; conversely, only 75% of visitors enter park headquarters. The principle visitor activity is birding. Visitors tend to support for continued non-development of JBWR. <i>General:</i> Observed use closely aligns with visitor reports of use. Support among leaders and visitors for no major changes or developments in JBWR.
Recommendations	1) The permit policy (in 1975) should be reassessed with consideration given to returning to previous policy of more restricted use. 2) Education programs should be maintained at current levels with increased personnel support. 3) Access to Jamaica Bay islands should continue to be restricted due to migratory bird breeding. 4) Nesting areas should be regularly patrolled and monitored.

2. Floyd, M. (1999). Race, ethnicity, and use of the National Park System. *Social Science Research Review* 1(2): 1-24.

Social science literature on racial and ethnic minority use of the National Park System is reviewed. Four theoretical perspectives for understanding race, ethnicity, and use of recreation lands are examined. Specific findings from a 1983 ethnography of users of Jacob Riis Park Beach, a location within Gateway National Recreation Area, are referenced. Researchers examined the process by which individuals separate themselves on a beach, finding that lifestyle preferences (specifically with regard to sexual orientation), race, ethnicity, and age led to separation of users of the beach. Researchers confirmed that such patterns of separation were not unique to Jacob Riis Park Beach, but that they are common to urban parks in similarly diverse areas.

STUDY COMPONENT	DETAILED DESCRIPTION
Year	1999
Purpose	Review of social science literature on racial and minority use of parks.
Population	N/A
Sample Technique	N/A
Data Collection	The paper discusses a specific example of work relevant to race and ethnicity performed in Gateway by W. Kornblum in 1983. Ethnography of users of Jacob Riis Park Beach was used to understand why and how separation of users occurs on the beach.
Results	Found separation of groups by lifestyle preferences, race, ethnicity, and age. Specifically, young white adults formed a spatially distinct group compared to other beach users. Researchers concluded this pattern is not unique to GATE or Jacob Riis Park Beach.
Recommendations	N/A

3. Kornblum, W., & Van Hooreweghe, K. (2012). The changing traditional uses of Jamaica Bay, New York. *Northeast Region Ethnography Program National Park Service*.

An ethnographic inventory and assessment was conducted to understand changes in traditional uses of Jamaica Bay (the Bay) resources since the area became part of Gateway National Recreation Area (hereafter Gateway). Demographic analyses, participation by researchers in local relevant events, and in-depth key informant interviews generated information about cultural and population trends in the urban areas of the Jamaica Bay watershed. Since Jamaica Bay has become a part of Gateway, the area has experienced increases in racial and ethnic diversity of the populations nearest to the Bay, with original immigrant groups being replaced by newer immigrant groups. These changes have led to shifts in, among other activities, the religious uses of the Bay. These shifts in population and cultural practices create the need for NPS managers to value Gateway interpretative and management resources in the context of changes uses and users.

STUDY COMPONENT	DETAILED DESCRIPTION
Year	2012
Purpose	To understand changes in traditional uses of Jamaica Bay resources since the area became part of GATE in 1972 (1972-2012 period)
Population	Residents of the urban region in the Jamaica Bay estuary watershed
Sample Technique	Key informant identification (ethnographic in-depth interviews)
Data Collection	Demographic analysis of U.S. Census data from 1970-2008 to identify demographics trends. Ethnographic inquiry through participation in meetings, public events, events at GATE park locations, and in-depth interviews from key informants from Jamaica Bay communities to reveal trends and cultural norms.
Results	Newer immigrant groups are replacing traditional groups of Irish, Italian, Jewish, and African-American immigrants. Today, over 60% of the population around the Bay identifies as non-white Hispanic and/or Caribbean. However, some original cultural groups directly adjacent to Jamaica Bay have maintained close ties. These groups include bay men, boating families, naturalists, and local environmental activists. The Jamaica Bay estuary has a “religious ecology” for some cultural groups, with increases in use by Hindu, Santeria, and other African religious affiliations.
Recommendations	Gateway should develop new interpretive resources around local knowledge of the Bay and racial tensions retained by remaining historical Bay residents. Managers should renew efforts to engage with new immigrant populations to build constituencies through interpretive initiatives and programs. Finally, Gateway should capitalize on active religious uses and environmental activism to create opportunities for public engagement around environmental responsibility.

4. Luce, P., da Cruz, P., Frame, G. W., & Tanacredi, J. T. (2000). Winter monitoring of beach use at Fort Tilden and Breezy Point, Gateway National Recreation Area. *Division of Natural Resources, Gateway National Recreation Area, National Park Service.*

Demand for increased access to GATE beaches during the winter months led to a winter beach use monitoring study at Fort Tilden Beach and Breezy Point Beaches (ocean-side and bay-side) to understand visitor use impacts under current use levels. A 6-week observational study of winter visitors showed that vehicle use and off-leash dogs are two primary causes of human impacts. Approximately 58% of observed vehicles did not display the appropriate park permit for beach vehicle use, and some vehicles exhibited damaging behaviors. Eighty-six percent of observed dogs were off-leash, which is illegal according to park policy. Researchers recommend enforcement of the dog-leashing and vehicle permit policies, with additional education on regulations and appropriate behaviors to minimize use impacts.

STUDY COMPONENT	DETAILED DESCRIPTION
Year	2000
Purpose	Identify impacts of current winter visitor use of beaches
Population	Visitors to Fort Tilden Beach and Breezy Point Beaches (ocean-side and bay-side) from 2/15 to 3/31/2000
Sample Technique	Random/Convenience – Effort was made to randomize hours of observation; however, researchers admit that convenience and staff availability played a role
Data Collection	Visitors were observed for a one-hour period each sample day. Observers recorded number of people on beach, number of vehicles on beach, bird species present, and damage caused to natural resources by human-related activities.
Results	Fort Tilden Beach received the majority (71%) of the total observed visitors. Most frequent visitor activities across beach sites include walking, jogging, and sitting. At Fort Tilden, the primary impact is from humans and dogs – 86% of dogs were off-leash. At Breezy Point Beaches, primary impact is from vehicles – 58% of vehicles did not display the appropriate permit.
Recommendations	At Fort Tilden Beach, special attention should be given to protection of dunes and enforcement of leashed dog policy. At Breezy Point Beaches, vehicle access should be actively managed to minimize impacts. Education regarding policies and human impacts to natural resources should be emphasized.

5. Madison, D. L. (1991). Visitor services project Gateway National Recreation Area. *Cooperative Park Studies Unit, Report 32*.

A mail-back Visitor Services Project (VSP) survey was conducted at Gateway National Recreation Area (hereafter Gateway) July 8 – 14, 1990. Approximately 767 park visitors accepted a mail-back survey questionnaire (95% acceptance rate) at one of five potential contact locations: Riis Park, Carnarsie Pier, Jamaica Bay Wildlife Refuge, Sandy Hook Beaches, and Great Kills Park. Visitors entering the study locations were sampled using selected intervals to contact entering people or vehicles. Intervals varied between locations, with target contacts per site reflecting the site's proportion of Gateway's overall visitation. A three-phase follow-up approach including a postcard and two reminder mailings was used to increase return rates. Five-hundred visitor groups returned completed questionnaires (66% response rate), answering questions related to visitor and trip characteristics, importance of services and facilities, information use prior to visit, usefulness of interpretive information, anticipated involvement in planning, and likes/dislikes.

STUDY COMPONENT	DETAILED DESCRIPTION
Year	1990
Purpose	Survey of park visitors
Population	Visitors to five Gateway locations
Sample Technique	Onsite intercept of visitors entering sample location; specified interval used to select participants (every n th method)
Data Collection	A 13-question mail-back, paper survey booklet was used to collect information. A reminder postcard and two full follow-up mailings were used to increase response rates.
Results	Report includes descriptive information on visitor demographics, trip characteristics, and visitor preferences and opinions related to services, facilities, information use, interpretive information, and likes/dislikes.
Recommendations	No explicit recommendations to park managers specified.

6. Management Services Group, Denver Service Center, National Park Service. (1997). Value analysis study for Gateway Education Center, Fort Wadsworth Building 210, Great Kills Field Station. *Gateway National Recreation Area Value Analysis Study 101-98 (Draft)*.

The Gateway Education Center was conceptualized to fulfill Gateway National Recreation Area's role as a major educational provider and community partner to provide educational opportunities about the National Park Service and stewardship. The physical design of the Gateway Education Center is the focus of this value analysis study. Specifically, the study was conducted to provide recommendations for the conceptual design of the Gateway Education Center at Fort Wadsworth (in Building 210) and the Great Kills Field Station to the design team that meet budgetary requirements. The value analysis included a functional analysis to identify needs and objectives for the facilities, alternatives development to determine creative solutions, and a recommendation of alternatives for each of the two spaces. Ultimately, the selected design/cost alternatives met the park's functional requirements and needs for the physical space, retained some design elements of interest, and met in the \$2.5 million dollar budget requirement.

STUDY COMPONENT	DETAILED DESCRIPTION
Year	1997
Purpose	To identify alternative conceptual designs for the Gateway Education Center that meet park functional needs for the space without exceeding budget or losing too many design elements
Population	Value study team from Denver Service Center
Sample Technique	N/A
Data Collection	Collection of documents related to existing design, estimates, purpose statements, and other contextual information related to Gateway Education Center; conversations and meetings with Gateway staff
Results	Alternative D was selected for Building 210 at Fort Wadsworth because it provides the most efficient use of space, clear and reasonable air circulation patterns, and was within the \$2 million budget. Alternative D included a major change to the HVAC system, leading to cost savings. A new schematic alternative was developed for the Great Kills Field Station component of the Gateway Education Center. This alternative included changes to roadways, more efficient space arrangements, and elimination of some viewpoints.
Recommendations	Recommendation to implement Alternative D for Building 210 and the new schematic alternative for the Great Kills Field Station is implicit in document.

7. Monz, C., Leung, Y., Bauman, H., & Ingle, C. (2003). Phase 1 project report: National Park Service coastal visitor impact monitoring.

Gateway National Recreation Area (hereafter Gateway) was selected as one of seven NPS units for inclusion in the National Park Service Coastal Visitor Impact Monitoring program designed to test candidate variables for future system-wide visitor impact monitoring programs. Phase 1 of the project included site visits to each NPS unit to evaluate the range of visitor use impacts at select sites. The following eight sites were selected for site-specific observation and evaluation at Gateway: North Channel Bridge, Breezy Point, Bergen Beach, Spring Creek, Sandy Hook, Staten Island, Skeleton Island/Plum Island, and Plum Beach. Impacts from visitor activities were documented at each site. Researchers generally concluded that visitors to the park are diverse in culture, seeking to use Gateway for a variety of uses. These uses may not always align with managerial directives to facilitate use while protecting resources.

STUDY COMPONENT	DETAILED DESCRIPTION
Year	2003
Purpose	Observe visitor impacts to natural resources at 7 NPS units, including Gateway
Population	Visitors to 8 Gateway locations
Sample Technique	8 Gateway locations selected due to high visitor use, existence of protected natural areas, and dispersed visitor recreation
Data Collection	Observation of visitor behaviors and discussion/ informal interviews with Gateway managers
Results	Behaviors with stated impacts to natural areas include picnicking, fishing, illegally harvesting clams/fish/horseshoe crabs, OHV use near bird nesting areas, beach walking and use near bird nesting areas, horseback riding, and dirt bike use.
Recommendations	Managers should thoroughly assess the location, extent, and severity of visitor impacts to the Breezy Point area before access is improved to this location. Thorough mapping and assessment of horse and social trails along Bergen Beach should be completed. The amount of trash and litter should be assessed across locations to serve as a baseline evaluation for management actions taken to prevent litter (i.e. measure reduction).

8. Monz, C., Leung, Y., Bauman, H., & Ingle, C. (2003). National Park Service coastal visitor impact monitoring phase 2 report.

The Phase 2 report identifies which of the seven evaluated NPS units meet the criteria to be considered suitable park units for implementation of the NPS visitor use impacts monitoring program. To be suitable, park units had to include significant resource protection areas, experience regular visitation near those resource protection areas, actively manage visitor activities in the area, and determine that changes to facilities are not desirable or practical in the resource project area. Jamaica Bay and Sandy Hook met these criteria; therefore, these two units of Gateway National Recreation Area (hereafter Gateway) were recommended as strong candidates for implementation of the visitor use impacts monitoring program. A second round of site visits to these areas revealed that social trails and visitor dispersion cause impacts across Gateway sites. Researchers suggest this may be due to a lack of effective communication regarding expected and appropriate visitor behaviors.

STUDY COMPONENT	DETAILED DESCRIPTION
Year	2003
Purpose	Identify vital signs indicators for visitor impacts noted during Phase 1
Population	Visitors to select Jamaica Bay and Sandy Hook locations at Gateway
Sample Technique	Re-evaluation of locations selected/sampled in Phase 1 that contained visitor-restricted areas and/or were deemed to be areas of high resource protection
Data Collection	Observation of visitor behaviors and discussion/informal interviews with Gateway managers
Results	Jamaica Bay and Sandy Hook were determined to be areas of high resource protection in GATE and therefore are considered to be suitable sites for implementation of the NPS visitor impact monitoring program. Social trails and visitor dispersion cause visitor impacts within these units, affecting nesting bird habitats. Staten Island was determined to be an area of low resource protection and was not revisited.
Recommendations	Gateway needs signage stating appropriate visitor behaviors. Social trails and visitor dispersion occur, in part, due to lack of designated walkways or trail signage.

9. National Park Service, U. S. Department of the Interior. (2014). A new vision for a great urban National Park: Gateway National Recreation Area final general management plan environmental impact statement.

The April 2014 Final General Management Plan Environmental Impact Statement identified Alternative B: Discovering Gateway as the National Park Service preferred alternative for the Gateway National Recreation Area General Management Plan. For each of the three administrative units of Gateway, Alternative B identifies recreation and visitor experience improvements. Themes of these improvements include the following: increase and diversify recreation opportunities including improving facilities and adding new opportunities and engage local neighborhoods, non-visitor groups (especially minority populations), young people and families through recreation opportunities and outreach. Water-based recreation opportunities, enhanced travel networks for water transportation, walking, and biking, and additional interpretative engagement programs are included as specific action areas for achieving recreation and visitor experience improvements. The GMP EIS also identifies the following four interpretive themes as a component of Gateway’s “Foundation for the Future”: 1) two centuries of national defense, 2) the natural wonders, dynamics, and challenges of an urban estuary, 3) maritime heritage, and 4) recreation and education: quality of urban life of all visitors. Finally, “Engaging New Audiences” is identified as an explicit planning challenge that Gateway seeks to be aware of and to address through the GMP.

STUDY COMPONENT	DETAILED DESCRIPTION
Year	2014
Purpose	To set the direction for a new vision and general management for the future of Gateway
Population	N/A
Sample Technique	N/A
Data Collection	N/A
Results	The GMP EIS included many topics applicable to a social science research agenda for Gateway. Each developed alternative contained a “Recreation and Visitor Experience” section, which included explicit recommendations on improvements for this component of Gateway management. Across units, recommendations centered on increasing recreation access, improving facilities, and engaging new audiences. The GMP EIS does not include specific discussion or citations for social science research; however, social science topics are heavily emphasized in future visioning for the park.
Recommendations	Alternative B: Discovering Gateway is the NPS preferred alternative

10. National Park Service, U.S. Department of the Interior. (2003). Gateway National Recreation Area personal watercraft use environmental assessment.

In accordance with National Park Service-wide policy on personal watercraft use in NPS units, Gateway National Recreation Area closed itself to personal watercraft use on April 22, 2002. To reauthorize personal watercraft use within Gateway units, each unit had to select a preferred alternative and draft special regulations to authorize personal watercraft use. Each of the three Gateway units selected a preferred alternative allowing personal watercraft use under a special regulation with additional geographic restrictions. With regard to social science research and themes, the EA included brief descriptions of visitor conflict between users and non-users of personal watercraft, visitor safety concerns, and potential economic impact. User and non-user conflicts exist when personal watercraft users encroach on other recreation activities such as swimming or angling opportunities. Safety concerns stem from a fatal and a near fatal crash that occurred within park boundaries involving personal watercraft use. Finally, additional concerns stem from the reduction in economic opportunity for businesses that rent personal watercraft to visitors; however, the NPS only identified one such vendor in the area.

STUDY COMPONENT	DETAILED DESCRIPTION
Year	2003
Purpose	To explore alternatives for reauthorization of personal watercraft use in Gateway
Population	N/A
Sample Technique	N/A
Data Collection	Specific social science studies are not cited within this document; therefore, data collection is not applicable.
Results	Each Gateway unit selected a preferred alternative that allowed personal watercraft use under a special regulation with geographic restrictions. This is a change from the elimination of personal watercraft use instituted by Gateway in April 2002. In each preferred alternative, personal watercraft use would be allowed for limited purposes such as for navigational purposes and accessing private residences.
Recommendations	Preferred alternative implementation.

11. Natural Resource Stewardship and Science, National Park Service, U.S. Department of the Interior. (2015). Gateway National Recreation Area: How might future warming alter visitation? *Park Visitation and Climate Change, Part Specific Brief*.

The relationship between climate change and visitation is explored. For Gateway National Recreation Area, the relationship between historically monthly average air temperature and historical visitation data was used to model future potential visitation according to air temperature projections. Two climate-warming scenarios were modeled, accounting for temperature variation under a reduced greenhouse gas temperature scenario and a “business as usual” temperature scenario. Air temperature was the only explanatory factor to changes in visitation. For Gateway, the relationship between historical temperature and visitation data was strongly positive, explaining 99% of the variation in visitation (in a 3rd-order polynomial model). Given this strong relationship, future annual visitation and future peak season visitation are expected to increase by 13-39%, low season visitation is expected to increase by 18-42%, should season length is expected to increase by 11-42%, and the overall visitation season is expected to increase by 13-31 days per year.

STUDY COMPONENT	DETAILED DESCRIPTION
Year	2015
Purpose	To explore the relationship between temperature and visitation
Population	N/A
Sample Technique	N/A
Data Collection	Historical visitation data (1979-2013) and historical monthly average air temperature were used to determine visitation/temperature relationship.
Results	A strong relationship between air temperature and visitation was identified, explaining 99% of variance in visitation. Future visitation was modeled using projected air temperature increases under two climate change scenarios. Holding all other factors constant, visitation at Gateway is expected to increase as temperature increases.
Recommendations	Document suggests park managers should explore additional questions in the context of visitation to be prepared for future shifts in visitation that may be expected due to shifts in monthly air temperature.

12. Resource Systems Group, Inc. (2015). Gateway National Recreation Area Visitor Study (Draft)*. *Resource Systems Group*, White River Junction, VT.

A mail-back visitor survey was conducted at 11 sites (4 in the Jamaica Bay unit, 3 in the Staten Island unit, 4 in the Sandy Hook unit) in Gateway National Recreation Area (hereafter Gateway) September 1 – September 8, 2015. Approximately 712 visitors accepted a mail-back survey questionnaire (44% acceptance rate). A two-phase follow-up approach including a postcard and one reminder mailing was used to increase return rates. Three-hundred and twenty-six visitor groups returned completed questionnaires (45.8% response rate), answering questions related to visitor and trip characteristics, sources of information used in trip planning, activities, transportation access, expenditures in the nearby area, evaluations of park activities and services, and preferences for management and future programming. Notable findings include the following: 16% of visitors identified as Spanish/Hispanic/Latino ethnicity; 85% of visitors reported awareness that Gateway is managed by the National Park Service; 85% of visitors used private vehicles to access Gateway; previous visits (46%) and friends/relatives (33%) were the most common sources of information about Gateway; 29% percent of visitors did not have any information about Gateway before their visits; viewing wildlife (56%), walking/hiking (45%), and swimming/surfing (41%) were the most common activities engaged in by Gateway visitors.

**Please Note: The final report for this visitor study was in draft at the time of this inclusion; therefore, results presented in this annotated bibliography are draft final in nature.*

STUDY COMPONENT	DETAILED DESCRIPTION
Year	2015
Purpose	Survey of park visitors
Population	Visitors to Gateway National Recreation Area
Sample Technique	Onsite intercept of visitors entering one of eleven sample locations
Data Collection	A 32-question mail-back, paper survey booklet was used to collect information. A reminder postcard and one full follow-up mailing were used to increase response rates.
Results	Report includes descriptive information on visitor and trip characteristics, sources of information used in trip planning, activities, transportation access, expenditures in the nearby area, evaluations so park services and facilities, and preferences for management and future programming.
Recommendations	No explicit recommendations to park managers specified.

13. Schreibman, M. P. & Tanacredi, J. T. (2002). Summer monitoring of beach use at Plum Island Gateway National Recreation Area Spermacetti Cove, Sandy Hook Unit. *Brooklyn College Aquatic Research and Environmental Assessment Center*.

Increased visitor use pressures at Sandy Hook led to a summer beach use monitoring study of Spermacetti Cove to evaluate the level and integrity of specific recreation activities, with an emphasis on dog walking. A one-week observational study of summer beach users showed that disturbances on the beach are likely caused by the predominant activities of beach walking and/or dog walking. People on the beach were responsible for over half of the observed damage to resources. Specifically, people walking on the beach dunes causes trampling to vegetation leading to greater ecological impacts. The majority of observed dogs were off-leash, which is illegal according to park policy. Researchers recommend enforcement of the dog-leashing policies, with additional education and signage related to regulations and appropriate behaviors to minimize use impacts.

STUDY COMPONENT	DETAILED DESCRIPTION
Year	2002
Purpose	Identify impacts of current summer visitor use of beaches
Population	Visitors to the bay side of Spermacetti Cove/Plum Island Beach (Sandy Hook Unit) from 6/17 – 6/23/2002
Sample Technique	Reasons for selection of observation hours not specified
Data Collection	Visitors were observed for a three one-hour periods each sample day. Observers recorded number of people on beach, number of vehicles on beach, type of bird species present, and any damage caused to natural resources by human-related activities.
Results	Most frequent visitor activities include fishing, walking, sunbathing, walking with a dog, jogging, and sitting on the beach. Majority of the people observed on the beach were on foot and/or walking with a dog – disturbances to natural resources most likely due to these activities. People walking on dunes caused significant trampling. Many dogs were observed off-leash.
Recommendations	Efforts should be made to reduce trampling of dunes, protect bird nesting and breeding areas, and protect wrack (important for bird breeding), as all of these resources are impacted by human and dog walking. Signs should be posted to communicate dog leash policies to beach users.

14. Shields, W. L., Littlejohn, M. A., & Hollenhorst, S. J. (2004). Gateway National Recreation Area – Floyd Bennett Field visitor study. *University of Idaho Park Studies Unit, Report 141*.

A mail-back Visitor Services Project (VSP) survey was conducted at Floyd Bennett Field (FBF) in Gateway National Recreation Area (hereafter Gateway) May 24 – June 1, 2003. Approximately 857 visitors accepted a mail-back survey questionnaire (89% acceptance rate) at the survey intercepts on the main road to FBF or along the Rockaway Gateway Trail/Greenway. A three-phase follow-up approach including a postcard and two reminder mailings was used to increase return rates. Four-hundred and ninety-two visitor groups returned completed questionnaires (57.4% response rate), answering questions related to visitor and trip characteristics, sources of information used in trip planning, activities, transportation access, and preferences for management and future programming. Nine percent of visitors identify as Spanish/Hispanic/Latino ethnicity, with 55% of these visitors indicating Puerto Rican ethnicity. Fifty-three percent of FBF visitors reported visiting at least once per week. Most visitors obtained information about FBF by word of mouth (67%), and most common activities were fishing (30%), jogging/walking/hiking (27%), gardening (24%), and model airplanes (23%).

STUDY COMPONENT	DETAILED DESCRIPTION
Year	2003
Purpose	Survey of park visitors
Population	Visitors to Floyd Bennett Field
Sample Technique	Onsite intercept of visitors entering either of two sample locations
Data Collection	A 29-question mail-back, paper survey booklet was used to collect information. A reminder postcard and two full follow-up mailings were used to increase response rates.
Results	Report includes descriptive information on visitor and trip characteristics, sources of information used in trip planning, activities, transportation access, and preferences for management and future programming.
Recommendations	No explicit recommendations to park managers specified.

15. Soubier, C. L. (1983). William Ryan Visitor Center Gateway National Recreation Area interpretive prospectus. *Harpers Ferry Center, Division of Interpretive Planning*.

The Harpers Ferry Center published an interpretive prospectus for the William Ryan Visitor Center at Floyd Bennett Field to amend the interpretive direction set for the building in 1978. Specifically, the prospectus adds greater emphasis to Gateway National Recreation Area's (hereafter Gateway) relationship to the National Park System (NPS), serving as a "gateway" to the NPS at Gateway. The prospectus states future interpretive materials will include information on the NPS in general and resources for other NPS units will be available for visitors. Information about Gateway, specifically related to the history of aviation at Floyd Bennett Field, will be retained at Floyd Bennet Field in addition to the recommended content updates.

STUDY COMPONENT	DETAILED DESCRIPTION
Year	1983
Purpose	Provide interpretive themes and direction for the William Ryan Visitor Center at Floyd Bennett Field, amending the direction established in 1978
Population	N/A
Sample Technique	N/A
Data Collection	N/A
Results	3 Themes for William Ryan Visitor Center: Gateway to the NPS, Gateway National Recreation Area, Floyd Bennett Field and Its Place in the History of Flight. Various components of the building will be designed to incorporate these themes as separate entities in the interpretive displays.
Recommendations	Specific recommendations and descriptions of each theme, according to building room, are included in the interpretive prospectus.

