



FY 2011 Annual Year End Report



The Surgeon General attends Public Lands Day at Rock Creek National Park.

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Executive Summary

The NPS Office of Public Health (OPH) has traditionally focused on health protection. Fiscal year 2012 added health promotion to our program, rounding out the practice of public health within the National Park Service. Carrying out the NPS Directors request to explore the role of the national park system in the health and well being of the American people culminated with the issuance of an official agency plan called Healthy Parks Healthy People. Acceptance of this plan institutionalized the role of the OPH in health promotion. A new Health Promotion Branch will be established in FY12.

Continuing to Protect Visitors to America's Parks

The Field Services Branch, finally fully staffed, made its strongest contribution ever to visitor protection! The number of park visits increased 18% from FY10.

-Detecting, Responding to and Limiting Infectious Disease

In partnership with the Centers for Disease Control and Prevention, state health departments and park staff, the NPS Medical Epidemiologist was involved in 50 incidents including infectious disease case reports, outbreaks, and other incidents potentially involving human disease transmission.

-Supporting the NPS Mission

The National Park System protects some of the most valued landscapes, ecosystems, cultural and historical treasures. The OPH working with others in the Service (the Wildlife Management and Health Program and the Office of Risk Management) continues to explore how the One Health concept can be of value to NPS managers. One Health advocates the interconnected nature of environmental stewardship, human health and the health of all species. This unified approach if applied to the NPS mission may inform management decisions and help prevent the need to trade off one aspect of the mission against another, allowing win-win-win decisions.

-Contributing to the Nation

The OPH also supports both the US Public Health Service Commissioned Corps as well as the Department of the Interior (DOI) and all of its bureaus by:

- Deploying officers to national emergencies
- Administering the interagency agreement between the Department of Health and Human Services and DOI, placing US Public Health Service officers in key public health support roles throughout DOI

Introduction

Our Vision and Mission

The NPS Office of Public Health is the nation's premier ecologically-based public health activity, embedded within and serving a unique American idea: preserving, protecting, understanding, and enjoying our natural and cultural heritage.

The mission of the OPH is to assist the Service in providing for the enjoyment of our National Park System by protecting and promoting the health of the visiting public and to achieve this by methods that leave protected resources unimpaired for future generations

Our Organization

Since 1918, the U.S. Public Health Service (PHS) has partnered with NPS and currently provides most of the staffing for this activity through an interagency agreement. OPH also acts as the agent for the Department of the Interior (DOI) for the purpose of placing PHS officers in other assignments throughout the department.

OPH is a division located under the Associate Director for Visitor and Resource Protection and consists of three branches:

1. Operations Branch – provides personnel services, budget preparation and execution, and serves as the liaison to the PHS Commissioned Corps;
2. Field Services – provides the majority of the division's direct service delivery to park units, conducts on-site public health evaluations of park operations, consults with park management and staff about visitor protections, and assists with all park specific division public health functions; and
3. Epidemiology and Health Promotion* – conducts disease surveillance and response, coordinates with local, state, and federal health agencies, and leads the division's health promotion activities.

(*Note: In FY12 health promotion will become its own branch)

Our Values

- We are wholly committed to the broader mission of the National Park Service and we are unconditionally constructive toward this end.
- We build on a legacy of visitor protection and honor the work of those who have come before us, hire the best, value and nurture our current team, respect each other and those we work for and with, and collaborate with any and all who might share our goals.
- We look to the future, explore, learn, refine, and perpetually seek continuous improvement, strive to be efficient and effective, and provide accountability to the American taxpayer.

- We conduct our work using the latest state of human knowledge, current science and defensible, peer-reviewed practice.

Epidemiology and Health Promotion Branch

The primary duties of the Epidemiology Branch include responding to outbreaks and human disease case reports, developing surveillance systems, and coordinating or leading park-based research and epidemiology projects. Much of the activities are conducted in collaboration with OPH staff, NPS divisions, local/state health departments, the Centers for Disease Control and Prevention (CDC), and other health partners. The branch is responsible for providing sound public health advice to parks and partners on infectious diseases, environmental health issues, chemical exposures, and other public health threats.

Focus areas of the branch include One Health, surveillance of transient populations, electronic data sharing, and park-based public health interventions. The branch presents findings and projects at scientific conferences and in peer-reviewed literature.

In September 2010, the branch was temporarily expanded and renamed the Epidemiology and Health Promotion Branch in order to support the health promotion planning process. Additional focus areas include assisting the NPS Director in establishing the NPS Health Promotion Initiative, developing park-based physical activity and nutrition projects with the medical community, and coordinating health promotion research with academic partners.

Disease Transmission, Outbreaks, and Response

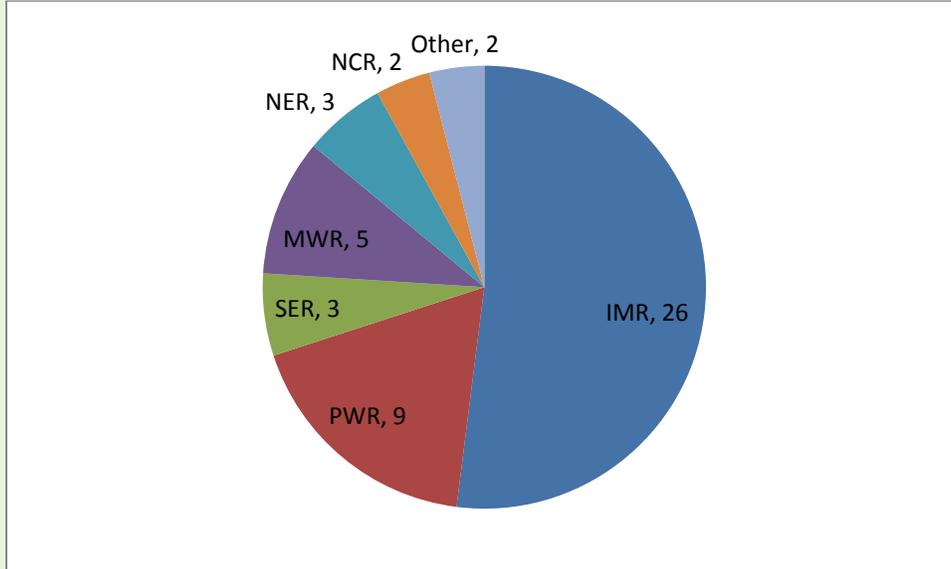
All public health staff assisted in responding to infectious disease case reports, outbreaks, and other incidents potentially involving human disease transmission. These public health responses were primarily coordinated by the Epidemiology and Health Promotion Branch Chief.

Number of Public Health Incidents by Region

FY 2011 (N=50)

- 48 incidents involving 36 NPS units in 6 regions; 2 additional incidents at FLETC and NIFC
52% of incidents occurred in the Intermountain Region
- 3 parks had 3 or more incidents (Glacier, Grand Canyon, Yellowstone)
- Incidents involved employees (34%), visitors (46%), employees and visitors (4%), and wildlife (14%)
- 15 incidents were investigated based on notification from a health department
- 45% of all incidents involved collaboration with a health department and/or the CDC

Number of Incidents in FY 2011 by Region



Major Responses:

- Coccidioidomycosis at PINN
- Inhalational anthrax with possible exposure at BADL, GLAC, GRTE, MORU, and YELL
- Imported measles at BRCA, GLCA, and GRCA
- Shigellosis at GRCA
- Vibriosis at LAME
- Tick-borne relapsing fever at GRSA
- Other Responses (Examples)
- Norovirus outbreaks at 6 parks
- Animal bites and/or rabies concerns at 7 parks
- Mold at GLCA
- E. coli infections at GLAC and GRCA
- Ringworm at ACAD
- Viral meningitis at JEFF



Shigella Bacteria – the causative agent of Shigellosis

Disease and Outbreak Response Narratives

Coccidioidomycosis after an archaeological dig--PINN

On August 23, 2011, CDR David Wong was notified by Dr. Ben Park (CDC Mycotics Disease Branch) about a case of coccidioidomycosis with possible exposure at Pinnacles National Monument (PINN) in CA. The case-patient was a university student who had participated in an archaeological dig at PINN during May-June 2011; the student became ill on July 6 and has since made a full recovery. During the 5-week assignment, the case-patient (along with 11 other students, several NPS personnel, and other volunteers) canvassed areas of the park, conducted multiple archaeological digs, and slept in tents in designated camping areas. Conditions were described as windy and dusty during most of the 5-week period, and the only personal protective equipment used during digging was gloves. Because the case-patient's permanent residence was in a county considered non-endemic for coccidioidomycosis, PINN was considered the likely source for exposure.

Coccidioidomycosis, also known as Valley Fever, is a fungal disease that is transmitted by inhalation of spores found in soil in arid and semi-arid areas of the Western Hemisphere. In the U.S., endemic states include Arizona, New Mexico, California and Nevada. Symptoms of primary coccidioidomycosis infection are typically self-limited and include flu-like symptoms (e.g. fever, chills, cough) and rash; in <1% of cases, the disease may progress to a disseminated form, which can be fatal.

In response to this case report, the NPS Office of Public Health participated in several conference calls with the CDC Mycotics Branch, the National Institute for Occupational Safety and Health, the California Department of Public Health, and NPS Risk Management. Active surveillance identified no other cases of coccidioidomycosis among dig participants. An extensive literature review was conducted, which found several other cases/outbreaks of coccidioidomycosis associated with archaeological digs, including an outbreak at Dinosaur National Monument in 2001, which affected 10 persons. Current efforts are underway to develop service-wide guidance materials for NPS archaeological workers and partners about the risk from coccidioidomycosis and to develop practical interventions for minimizing dust inhalation at dig sites.

Inhalational anthrax with possible exposure at 5 NPS units (BADL, GLAC, GRTE, MORU, YELL)

On August 8, 2011, the NPS Office of Public Health was notified of a rare case of inhalational anthrax that occurred in a U.S. citizen who had traveled to natural areas in the Rocky Mountains and Midwest, including 5 NPS units. The case-patient was hospitalized at a Minnesota hospital and has since recovered. The Minnesota Department of Health (MDH) and the CDC were the lead public health agencies on this investigation. Because anthrax can be used as a bioterrorism agent, the Federal Bureau of Investigation (FBI) was also initially involved in this investigation; however, because no evidence suggested a criminal or terrorist act, health officials believe the case-patient acquired anthrax from the natural environment (i.e. from exposure to animal remains or contaminated soil).

Anthrax is primarily a disease of hoofstock (e.g. cattle, bison, goats) but can also cause rare, but fatal, infections in humans. Forms of human anthrax infection include cutaneous anthrax (skin infection), gastrointestinal anthrax (nausea, diarrhea, abdominal pain, fever), and inhalational anthrax (severe pneumonia). Inhalational anthrax is the most fatal form of the disease, and early antibiotic treatment is essential.

Although the exact source was never determined for this case, it is possible that exposure occurred at an NPS unit. The NPS Office of Public Health and NPS Wildlife Health Branch were actively involved with this investigation to: 1) communicate case report findings with park managers and officials, 2) review databases and query parks for recent or suspicious animal mortality events or human health reports, and 3) educate NPS employees who handle wildlife about the risk from anthrax and other zoonotic diseases. This case investigation illustrates how NPS can be an important partner and collaborator when investigating multi-jurisdictional public health issues.

Disease Surveillance

Another primary role of the OPH Epidemiology Branch is to develop surveillance systems to improve detection of NPS-associated infectious disease case reports and outbreaks. FY 2011 marked the fourth year of formal efforts to collect and analyze health data from two different sources: 1) park-based data, and 2) health department-based data (e.g., NPS-associated case reports that are reported to state health departments and the CDC). Two FY 2011 NPS surveillance projects are outlined below.

One Health Integrated Surveillance

Much of the initial disease surveillance efforts within the OPH have focused on collecting and analyzing human health data. As part of the One Health initiative, the OPH collaborated with the CDC Public Health Informatics Fellowship Program to create a strategic roadmap to inform the development of a pilot One Health surveillance system that integrates human, animal, and environmental health data.

In FY11, site visits were conducted at ZION and YELL with NPS employees from all divisions, including Administration, Visitor and Resource Protection, Interpretation, Resource Management, Maintenance, and Concessions. The One Health concept was explained to participants, and positive feedback was received about the potential benefits of integrating health data and how such a surveillance system might improve communication and collaboration within divisions and with outside partners. Specific One Health data (animal, human, and environmental) collected at both parks were reviewed and catalogued. Additional meetings were conducted with potential partnering state agencies in WY—Game and Fish; State Veterinary Laboratory; Department of Environmental Quality; Department of Health; State Climatology Office; and Livestock Board. Overall, there was support from most WY agencies for the One Health concept and for moving forward with a proposed integrated surveillance pilot at YELL. CDC is currently finalizing the strategic roadmap, and next steps include gaining additional stakeholder buy-in and developing a proposal to be submitted for a competitive funding source. In FY11, this project was presented as a CDC Epidemic Intelligence Service seminar and at the Council of State and Territorial

Epidemiologists (CSTE) annual meeting. This project will also be presented at the 2012 American Veterinary Medical Association meeting in San Diego.

Travel History Data Analysis—New Mexico

Travel history is a standard component of infectious disease case investigations and can assist in identifying common-source exposures and linking multi-jurisdictional cases. A carefully elicited travel history is particularly critical for surveillance of transient populations, such as national park visitors. To our knowledge, the completeness and consistency of travel histories collected at state health departments has never previously been assessed.

With funding provided by the Youth Intern Program (YIP), the OPH hosted Jessie Clippard, an MPH student at Emory University, to conduct an analysis of travel history data collected at the New Mexico Department of Health. Jessie's project included a survey of state disease investigators and an analysis of 2,122 case investigations for 27 diseases from 2006-2009. The results showed that travel history was recorded for <50% of all case investigations and was particularly poor for zoonotic/vectorborne and vaccine-preventable diseases. The NPS OPH plans to publish these findings in a peer-reviewed journal and work with partnering organizations to develop interventions that will improve the quality and consistency of travel history data. If successful, the availability of more complete travel history data will allow OPH to better detect and control infectious disease clusters and outbreaks associated with national parks.

Council of State and Territorial Epidemiologists (CSTE)

OPH continues to collaborate with the CSTE and its membership. Six NPS papers (4 oral) were presented at the 2012 CSTE annual conference in Pittsburgh, PA. In addition, NPS hosted a One Health booth highlighting inter-disciplinary activities in disease surveillance, disease response, education/training, research, and health promotion. CDR Wong was also invited to attend the CDC/CSTE orientation in Atlanta for new state epidemiologists, where he met with CDC and CSTE leadership and networked with state epidemiologists from GA, OH, MS, NH, ND, and TX.

Health Promotion - Healthy Parks Healthy People

The Office of Public Health is in the process of establishing a Health Promotion Branch, to provide leadership and administration for the Healthy Parks Healthy People US initiative. In 2011 health promotion, temporarily located in the Epidemiology Branch, established collaborative ties with parks, programs and divisions to assist in the establishment of the initiative. Key tasks that were accomplished with assistance from staff in parks, programs and divisions service wide to champions the unique role of parks and public lands in contributing to a healthy civil society, include:

- Established two Healthy Parks Healthy People US goals within the NPS Call to Action (Take a Hike and Call Me in the Morning and Eat Well and Prosper).
- Developed the NPS Healthy Parks Healthy People US web-page and the NPS Healthy Parks Healthy People US Facebook page;

- Developed a database of current health promotion projects in national parks;
- Announced and implemented a healthy foods strategy in parks beginning with the conduct of nutritional baseline assessments and pilot projects in parks;
- Funded the successful execution of micro-grants to support Modern Day Mather Hikes in 8 parks around the country in 2011, with plans for two more in 2012;
- Garnered support from Clemson University to host a Healthy Parks Healthy People science workshop that will take place in February 2012;
- Announced plans for the NPS to host the second international Healthy Parks Healthy People International Congress and Exposition in 2014;
- Facilitated conversations to pursue new health promotion endeavors with non-traditional partners, including NAACP, American Heart Association, Illumination Entertainment, Healthy Parks Healthy People Global, The City Project, American Academy of Pediatrics, National Environmental Education Foundation, National Association of Community Health Centers, MGR Foundation, UnitedHealth Group, American Academy of Family Physicians.
- Advisory board functions and leadership roles established and maintained in 2011:
 - Healthy Parks Healthy People Global – advisory board member
 - National Environmental Education Foundation (NEEF)– advisory board member
 - NEEF Nature Champions Initiative – advisory board member
 - NASPD/NPRD/NPS Children in Nature Working Group
 - Health and Recreation Federal MOU Working Group
 - Federal Lands, Bike-sharing Working Group
- Speaking and presentations at national conferences in 2011:
 - American Public Health Association, Opening address by Director Jon Jarvis
 - American Public Health Association, Panel Presentation on Healthy Parks Healthy People by Diana Allen; Poster Presentation on Healthy Foods partnership with CDC; Safe Adventures Booth collaboration with Office of Risk Management
 - Conference on the Value of Play, Plenary address by Captain Charles Higgins
 - 13th Conference on National Scenic & Historic Trails, Presentation by Captain Higgins
 - Council of State and Territorial Epidemiologists, Dr. David Wong
 - National Trails Symposium, plenary address, Diana Allen

Other Notable Accomplishments

The NPS Office of Public Health chaired the NPS Health and Wellness Executive Steering Committee, which was given a two-fold charge by the Director to: 1) Explore the role of the National Park Service in promoting the health and well-being of the nation; and 2) Recommend an institutional home and strategy to support health promotion.

Over the course of one year, the committee was successful in meeting this charge. Key to this success was the development of a NPS Healthy Parks Healthy People US initiative, and a 5-year strategic action plan that is tied to the agency-wide Call to Action.

Healthy Parks Healthy People US has been given a permanent home within the Office of Public Health. The Office of Public Health will assist with development and advocacy, synergy and alignment of new plans, prospects, and partnerships to create and sustain a culture of health and well-being among parks and programs, at local, regional, national and global levels of involvement.

On April 5–6, 2011, the Director hosted a Healthy Parks Healthy People US meeting in San Francisco to provide an opportunity for deep dialogue and discussion with a group of innovators, visionaries, and leaders with an interest in exploring how to strengthen the nexus of public lands and public health. More than 90 individuals from a broad array of sectors and interests attended this meeting, with a purpose to explore the connection of public lands and public health and to forge partnerships.

A NPS Healthy Parks Healthy People US Strategic Action Plan was made operational by NPS Director Jon Jarvis, the National Leadership Council, and the NPS National Budget Committee. The plan provides a framework for the NPS and partners to illuminate and magnify the role of parks and public lands in contributing to the nation's health.

Healthy Parks Healthy People US has been approved for incorporation into the Service wide Comprehensive Call, with administration by the NPS Office of Public Health to support a range of endeavors that are in support of the Healthy Parks Healthy People strategic action plan (e.g., promoting physical activity, healthy foods, mental and spiritual health, healthy infrastructure/built environments, employee wellness).

Spring, 2014, the National Park Service will host the 2nd Healthy Parks Healthy People Global Congress and EXPO in Miami, Florida. The first Healthy Parks Healthy People Global Congress was hosted by Parks Victoria, Australia in 2010, and spawned the global movement of which we are now taking part. In 2014, the US National Park Service will have an opportunity to share our successes and lessons learned with sister agencies and partners from across the globe.

Field Services Branch

The Field Services Branch primary focus is to deliver environmental health services and consultation for NPS park units in the protection and promotion of visitor and employee health and provide technical assistance to the NPS regions through a national program. This task is accomplished by using on-site evaluations to determine the degree of control that park units have over public health hazards regarding water supplies, waste water systems, and food service facilities. The branch also consults and coordinates with other NPS divisions and the Epidemiology branch in responding to cases of zoonotic or human illness. In addition to the above tasks, the branch is available for consultation on any and all public health related park specific issues, providing informal and formal training to park staff on public health issues, and assisting NPS and PHS with emergency response.

Environmental Health: Food and Water/Waste Water Evaluation Data Summary

Background on Environmental Health Database

The Office of Public Health Field Services Branch began maintaining evaluation data in a standardized, electronic database in 2007. Data for most food evaluations were entered starting in May 2007; pilot efforts to capture water and wastewater evaluation data were initiated in May 2008. The database was fully implemented in fiscal year (FY) 2009. All of the following charts are based on data entered into the electronic database.

Overall Park Visits and Evaluations

NPS Public Health consultants park visits for FY 2011 totaled 284 (visits where both Environmental Health survey and food evaluation occurred at the same site within the same month counted as only 1 visit). The number of park visits increased 18% from FY10 due to the Field Services Branch being fully staffed this year.

A comparison to FY 10 shows an overall:

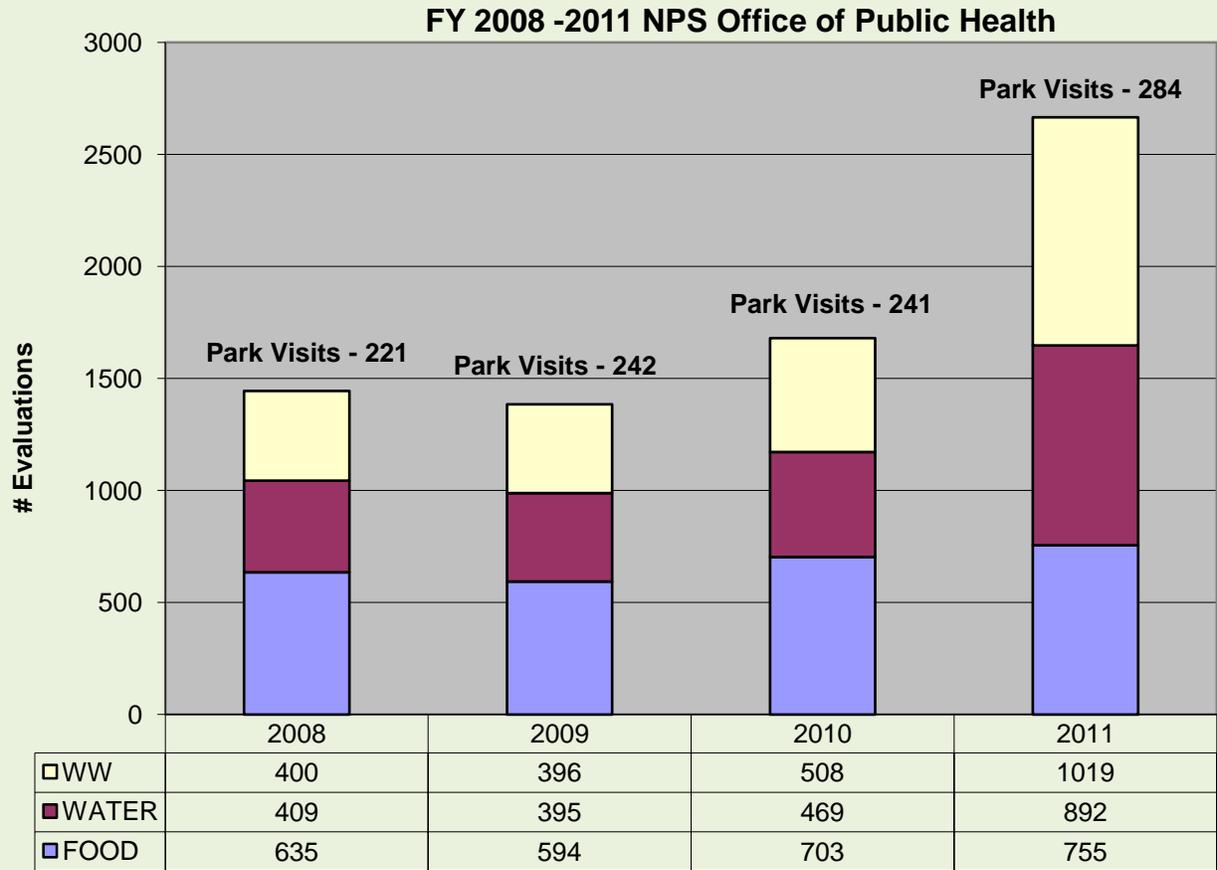
- Twice the number of wastewater system visits occurred (FY10 – 508 FY11 – 1,019)
- Almost twice the number of water system visits occurred (FY10 – 469 FY11 – 892)
- 7% increase in food service visits (FY10 – 703 FY11 – 755)

The total number of waste water systems, water systems and food service visits totaled 2666 in FY 11. The increase in system visits is due to better reporting into the electronic system and the addition of two new staff members, one in the Pacific West Region and one in the Southeast Region and the filling of the Midwest Regional Consultant position. In this past year the Field Services Branch became fully staffed at levels indicated by recent year's workload analysis evaluations.

A breakdown of water, waste water and food service evaluations by Region shows substantial gains in total assessments once again due to backfilling staff in the Midwest Region and adding staff in the Pacific West Region and the Southeast Region.

Also, FY 11 marks a year in which the Field Services Branch travel budget was believed to be adequately funded. The travel budget was supplemented by Field Services Branch participation in an MOA with the DFM Dam Safety Program. Consultants provided assessments of non-hazard dams in the parks they visited and were compensated for their efforts in the form of increased travel dollars. This working relationship benefited both programs. The Field Services Branch provides a direct service to both the regions and the park units within the NPS system. Adequate travel budgets correlate well to the increase in direct service visits to park units.

A detailed look at Food Service Evaluations, Water System Evaluations, Waste Water System Evaluations, Emergency Response Activities, "Other Activities", Goals for FY 11, Success Stories and Outcomes follows:



Food Service Evaluations

During FY11 we were able to perform 755 evaluations (a 7% increase over FY10). This was due to an increase in the number of evaluations in all regions (most notably the PWR), except in NCR (where the drop was due to an undercounting of temporary food events).

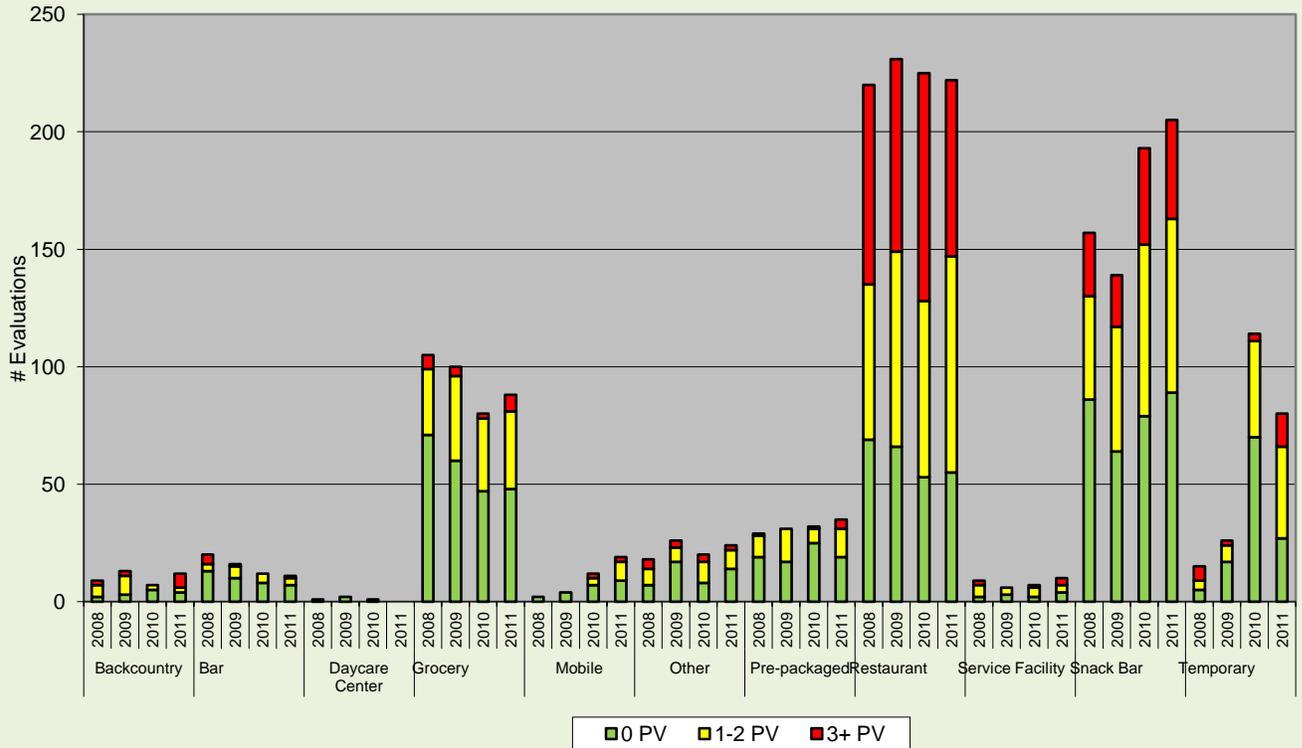
Of the 636 routine evaluations with ratings, 90.8% were rated as "satisfactory." This is the highest rating that is issued.

Restaurants and Snack Bars accounted for 61.5% of the evaluations conducted, and were again the largest portion of evaluations that contained three or more priority violations.

Per the 2009 Food and Drug Administration (FDA) Food Code, a priority violation is issued if a facility is not in compliance with an item that is likely to contribute to food contamination, illness, or an

environmental health hazard. The graph below illustrates that restaurants and snack bars continue to have the highest percentage of evaluations with multiple priority violations. However the number of evaluations with three or more priority violations has dropped, while the number of evaluations in these sectors has increased.

Number of Priority Violations per evaluation by Facility Type



The top 5 priority food violations that were cited for all facility types are as follows:

1. Not keeping items appropriately cold (cited in 20% of all evaluations)
2. Not properly washing and sanitizing dishes (4.9%)
3. Not keeping items appropriately hot (4.5%)
4. Cross contamination of foods with raw foods (2.5%)
5. Not cooling food down in a rapid manner (2.5%)

Based on the food service evaluations and critical violations observed, appropriate management strategies and interventions were discussed with food facility operators, concessioners, and NPS staff.

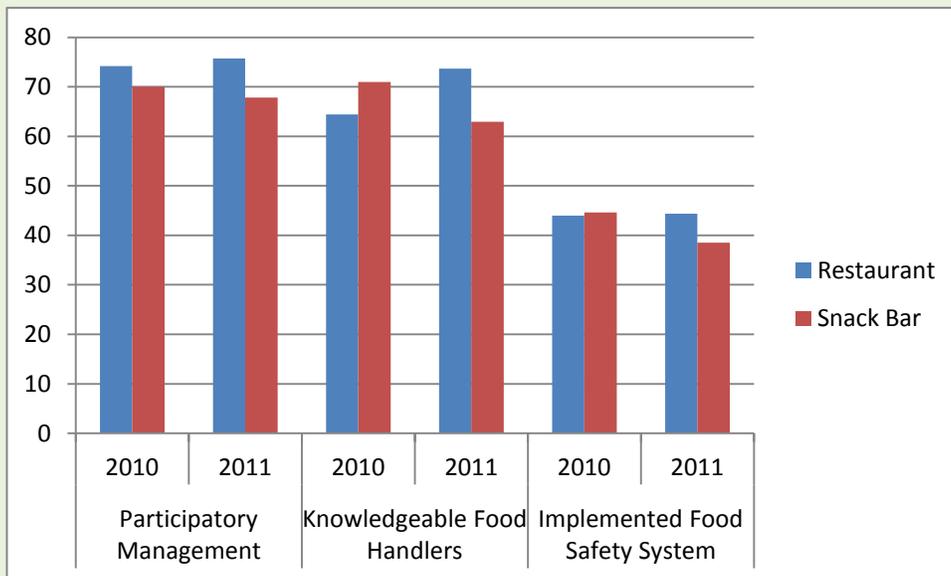
Of the FDA risk factors commonly associated with food borne illness, the top three risk factors observed were:

1. Inadequate temperature control of foods (cited in 31.2% of all evaluations)
2. Food cross-contamination (19.6% of all evaluations)
3. Hand washing and bare hand contact (10.6% of all evaluations)

The occurrence of these risk factors has increased from previous years. This may be due to a renewed focus on the risk factors for foodborne illness. We have begun to implement a novel scoring system that includes looking at the policies, training, and verification for the risk factors of foodborne illness with each restaurant and snack bar.

System Strengths in Restaurants and Snack Bars

The three most often cited system strengths in restaurants and snack bars are: participatory management; knowledgeable food handlers; and an implemented food safety system. These strengths are attributes shown by a facility that are not directly prescribed by the FDA Food Code, but can have a positive influence on the reduction of risk factors for foodborne illness. Management that is active in a kitchen may work to ensure that food processes are being followed and help keep everyone on track. Knowledgeable food handlers would relate to the food service workers' knowledge of food safety and proper food handling; while an implemented food safety system would look at the overall implementation of a food safety system in the food service establishment.



The number of establishments having participatory management and implemented food safety systems has remained fairly stable. However, the number of knowledgeable food handlers in restaurants has increased, while this number has decreased for snack bars.

Changes for FY12

Scoring System

We will be transitioning from a repeated violation based scoring system to one that utilizes both onsite conditions and evaluates a management system. This system will have points awarded for each violation that can be used to assign a rating. In addition, we will evaluate the level of policies, training, and verification that a facility has implemented and adjust the rating accordingly. One of the downsides to a strict scoring system based on violations is that we are rating a facility based on observations made during less than 1% of their operating time. By adjusting the score with the level of managerial control they have, we can see what the long term control of the risk factors should be. During some preliminary analysis, we found that there was a strong statistical relationship between the level of control an establishment had and the occurrence of the risk factors for foodborne illness.

Temporary Food Event Evaluations

There has been an increase in the number of temporary food events especially at urban parks that has exposed a weakness in using our regular evaluation form for these vendors. A shortened and targeted evaluation form is being designed that can be used with these types of events.

Quality Assurance

We have begun doing some statistical analysis of the results of our evaluations. This is designed to have two effects: Identify areas of weakness in establishments; and provide feedback to our consultants on their performance. This analysis will include looking at trends in violations, and statistical comparisons of consultants.

Water and Wastewater Recommendations

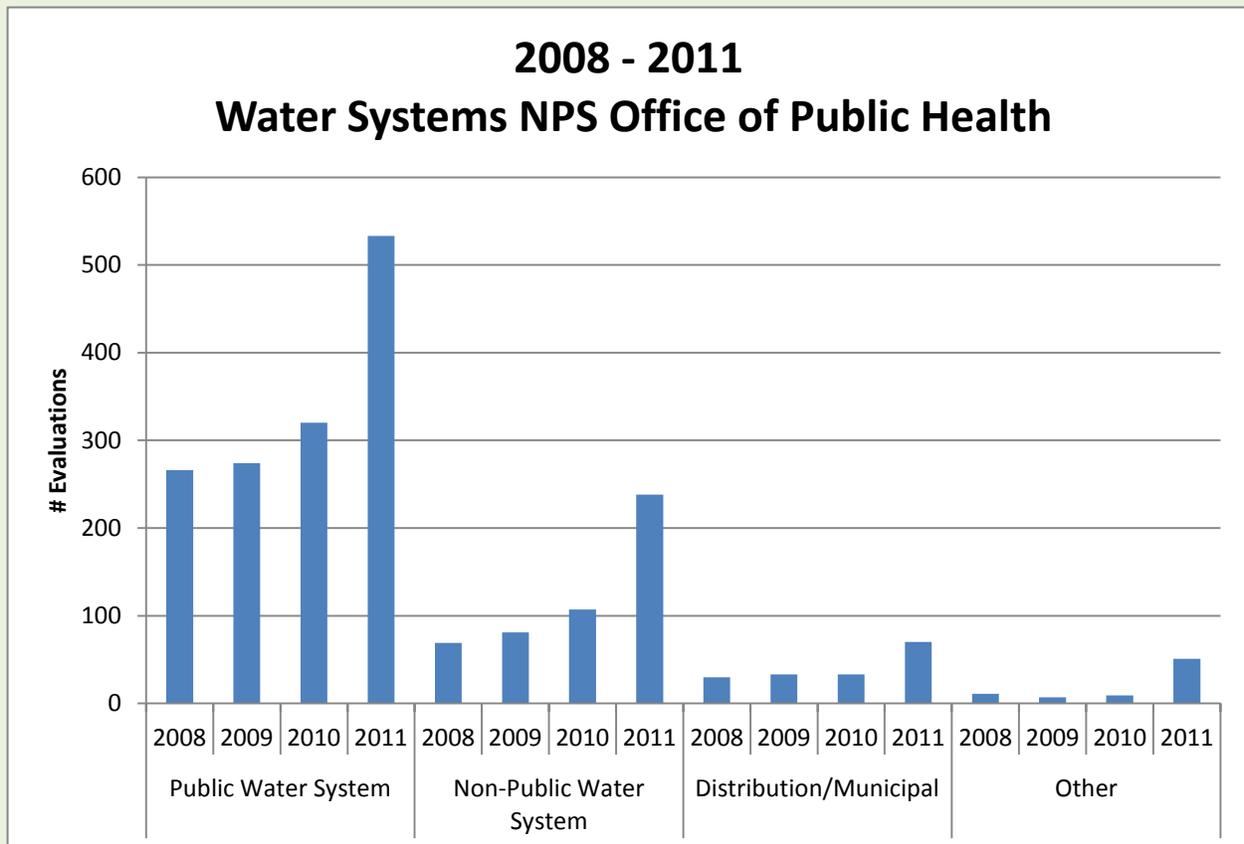
Recommendations for water and wastewater made by public health staff regarding areas for improvement are classified as:

- Major-violations that have a highly likely chance of impacting human health (e.g., primacy agency violations, not doing monitoring, etc.)
- Minor-violations that do not directly lead to a public health issue
- Unclassified

Recommendations are categorized by the area along the water or wastewater system that the observation was noted. If a problem is noted across multiple water or wastewater systems, the recommendation can be classified as system-wide, whereas if a problem is associated with a single system, then the recommendation can be classified as specific. Unclassified recommendations were not categorized into more specific steps in the treatment process.

Water Evaluations

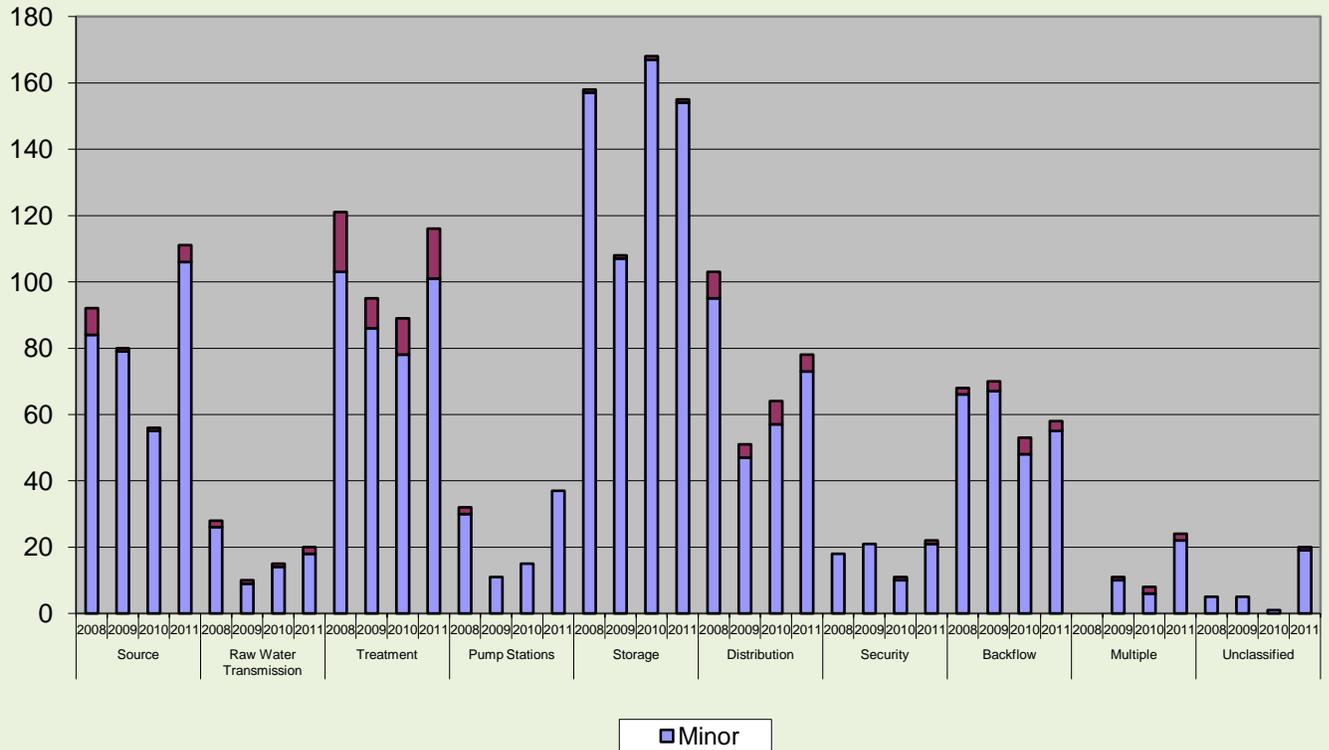
- 892 water evaluations were completed and entered into the electronic database
- 60% of the systems were public water systems utilized by at least 25 persons or having 15 service connections
- 27% of the systems evaluated were small non-public water systems (e.g., small ranger station)
- 8% of evaluations were of distribution/municipal systems where NPS units distributed water primarily maintained by non-NPS entities
- “Other” systems constituting 5.7% of water systems evaluated were non-potable water systems not used by the public (e.g., fire hydrants)
- 96 systems were reported as overdue based on our standard operating procedure



- For water systems, most of the recommendations were categorized as minor. Overall recommendations increased from FY10 to FY11, except for some decrease in observations for storage. This increase in recommendations could be attributed to being fully staffed and a large increase in water system assessments. PMIS project generation and park corrections continue to be a priority.

- Source, treatment, backflow and distribution portions of the water systems had the most major problems. Pump stations, storage and security segments had the most minor problems.

Specific Water Recommendations by Process Area

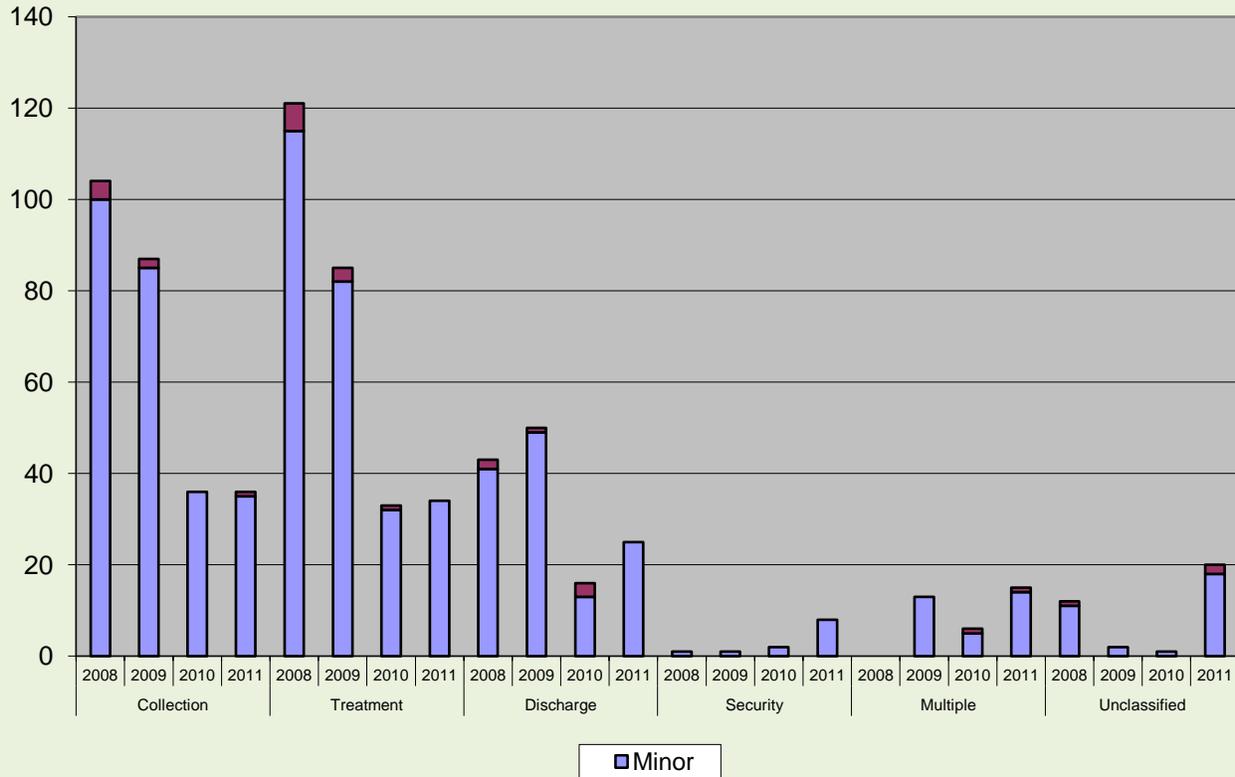


Wastewater Evaluations

1019 wastewater evaluations were completed and entered into the electronic database

- For wastewater systems, most of the recommendations were categorized as minor.
- Overall recommendations increased from FY10 to FY11. This increase can be attributed to the increase in park visits and wastewater system assessments.
- Collection, treatment and discharge portions of the wastewater system represented the majority of recommendations made.
- 77 wastewater systems were noted overdue at the end of the fiscal year based on our standard operating procedure.

Specific Wastewater Recommendations by Process Area



Field Services Branch Emergency Response / Incident Command Activities

Field Services Branch participation and actions taken in support of Hurricane Irene, Fort Sumter and Manassas Civil War 150th Commemorations were as follows:

- LT Kurt Kesteloot deployed as the safety officer for the Midwest Region Incident Management Team after Hurricane Irene at Cape Lookout National Seashore. His work resulted in keeping one location with a compromised well and many septic tank drain fields closed and assisted with the testing to open three other water systems within the park.
- CAPT Robert Reiss deployed as part of the Manassas Civil War 150th Anniversary commemoration as the general public health officer for the NCR Incident Command Team. His work included food safety, water hydration safety for thousands of visitors and hundreds of reenactors and general sanitation for the event.

- LT Kurt Kesteloot deployed as part of the Fort Sumter Civil War 150 commemoration as the safety officer for the incident command team. His duties included evaluating water, waste water, food safety along with safety for hundreds of re-enactors and thousands of visitors.

Field Services Branch Additional Activities

The public health consultants within the field services branch provide water, waste water, food service and vector control assessments for our National Parks. The consultants also provide technical assistance on an as needed basis to assist Park units in addressing additional public health issues.. These additional activities in Fiscal Year 2011 included:

- Providing non-hazard dam assessments for the DFM Dam Safety Program to supplement travel expenses. Assessments were conducted in the Pacific West and Midwest Regions.
- Providing guidance and inspections of temporary food events with the majority being on the National Mall, at Golden Gate and Gateway NRA's.
- Providing hantavirus, blood-borne pathogens, zoonotic disease, backcountry sanitation, concessions, water and waste water training for Park and Regional Staff throughout NPS
- Participating in annual zone Facility Management meetings throughout the NPS
- Providing plan reviews and specifications reviews for concessions building modifications, Facility Management projects(PMIS and line item construction) throughout NPS
- Assisting Integrated Pest Management program with vector issues throughout NPS including guidance on rabies, histoplasmosis, hantavirus, plague, tularemia, west nile virus and others
- Providing the NPS with guidance at the WASO, Regional and Park levels on seasonal influenza
- Participating in disease outbreak investigations during the year
- Providing food safety guidance and assessments at multiple NPS Learning Centers throughout the NPS
- Assisting the parks with air quality guidance including mold, off gassing of fuels, carbon monoxide and others
- Providing technical assistance on recreational waters throughout the NPS
- Continuing ongoing building of relationships with the NPS Biological Resource Management Division
- Assisting in the design and planning of new visitor centers, water and waste water treatment infrastructure at multiple parks
- Providing training and Public Health program overview to interns and staff throughout NPS
- Improving the programs data collection and assessment access program by incorporating new food evaluation processes, first time inclusion of bacteriological monitoring data for water safety and general program improvements for ease of use.

Field Services Branch Goals

- Promote a picture data base of working scenes showing the services provided by the Field Services Branch. This data base would be used as an educational tool for other divisions and programs promoting our continued service and long history with the National Park Service.
- Development of a Western and Eastern Field Services Team approach to better serve park units. This structure would enhance coverage across regional boundaries enhancing efficiency and potentially reducing travel costs.
- Continue to develop a formal training program on a national scale to include all regions in the NPS. Training to include water operator, waste water operator and food service. This training would include certified instructors providing continuing education credits for operators and travel assistance for NPS operator attendees. FY11 was the first year training was performed in the Alaska Region.
- Work closely with the Operations Branch and Epidemiology Branch on common projects and issues.
- Update national workload data for the Field Services portion of the Public Health Program. The new workload data has been generated and is being evaluated.
- Improve our existing Environmental Health Reporting System to make it user friendly and professionally presented.
- Revise the Field Services Branch Standard Operating Procedures considering fluctuation of yearly travel budgets and staffing.
- Review, investigate and establish an urban park Public Health portion of our program.
- Come up with innovative ways to improve our services to park units by developing working relationships with other programs and divisions.

Field Services Branch Success Stories and Outcomes

Disease Detection and Response in the Southeast Region –Specific disease outbreak incidents responded to this year in the SER included a suspected campylobacter outbreak in BLRI (turned out not to be, but considerable follow up and information was provided to the park), several bedbug infestation issues and questions, and Lyme disease. Also provided information and answered questions on Dengue Fever to the Florida parks and San Juan and the VIIS.

Emergency Preparedness and Response –CAPT Theresa McDarmont, SE Public Health Program Consultant provided leadership and coordination of NPS preparedness initiatives for public health emergencies and non-emergency type incidents in both the Southeast Region's parks and all of the parks in the NPS. Incidents responded to in the Southeast Region included the Fort Sumter 150th Civil War Celebration (FOSU), and the aftermath to Hurricane Irene. In the SER, officer's deployed to SE Parks CALO and CAHA for hurricane Irene cleanup and assistance, and one officer deployed to FOSU to assist with the public health and safety of the visitors and staff to the celebration. Information on issues such as mold, food safety, potable water and wastewater flooding procedures, were provided to the parks affected by Hurricane Irene. Officer's also assisted parks in the NER and NCR in the aftermath of Hurricane Irene, providing information and assistance on a myriad of public health issues and activities

mainly centered around flood water/public health issues with potable water systems (DEWA) and insuring the protection of food service facilities.

Use of cisterns for water systems - Assisted San Juan National Historic Site (SAJU) in exploring and reviewing two water systems, one at each of the parks two Forts, (San Cristobal and El Morro), for feasibility and EPA SDWA compliance issues for a proposed project that would utilize the existing cisterns for rain water catchment and explore the utilization of the rain water stored in the cisterns for potable and/or non-potable uses. After careful review and the completion of a site visit the cistern project is underway and it was determined that the catchment water will be utilized for non-potable water use. This project is expected to significantly decrease the parks water usage, providing both conservation of our precious water supply and also a cost benefit for the park in the reduction of the water it now purchases from the City of San Juan Municipal Water System. This project is completed and is now on-line and projected to save the parks thousands of dollars per year.

Utility Operator Training - The Field Services Branch conducted water and waste water operator training for all of the Regions within the NPS and for the first time ever in the Alaska Region. The NPS operators received the courses and acquired credits through each of their states to maintain their respective operator licenses. This may be the first time that the courses were conducted by our Public Health Consultants on a national level. The training is hands on type of training and is well received. The operators are presented with the NPS sized water and waste water systems in mind. Officers providing the training included CAPT Joe Winkelmaier, CAPT Theresa McDarmont, CAPT Robert Reiss, CAPT Paul Robinson, CAPT John Leffel, LCDR Craig Ungerecht, LT Kurt Kesteloot and LT Rachael Lee.

Environmental Health Survey Assessment Database-CAPT Joe Winkelmaier, CAPT Theresa McDarmont, LCDR Adam Kramer and Paul Schwarz worked to re-evaluate and tune up the Environmental Health Survey Database Tool for the Field Services Branch program. Made significant changes to the database to increase the ease of use and to streamline and simplify data entry. This same team designed a bathing beach survey tool to allow parks to enter sampling and sanitary bathing beach information directly into a database, this will allow the parks and the public health consultants to run trend analysis and to be alerted instantly when a bacteriological sample exceeds the public health recommendation to allow instant communication and actions with the parks. The bathing beach program is being finalized and will be "beta tested" in VIIS this winter.

ROMO Water System Optimization - Rocky Mountain National Park Headquarters East water treatment system has a package plant for removing high iron levels from the water. The system would oxidize the iron in the water with sodium hypochlorite and then filter the oxidized iron through MTM media. The media was regenerated using potassium permanganate, and the water had additional sodium hypochlorite injected after filtration to provide a disinfectant residual. The Colorado Department of Public Health and Environment during a sanitary survey had identified a potential cross connection between the water line and the potassium permanganate.

Through research with a regional engineer LCDR Adam Kramer discovered that the amount of time that the park was using for backwash with the potassium permanganate was insufficient. LCDR Kramer

found that the Park could regenerate the filter media with an elevated level of sodium hypochlorite prior to filtration eliminating the need for potassium permanganate all together. The Park took his recommendation and now is utilizing an increased dose of sodium hypochlorite to both oxidize and disinfect the water at one injection point prior to filtration. The Park has reported that the system is working fine and having similar if not better iron removal efficiencies and was able to eliminate the need for one chemical in the treatment process.

Japan Earthquake and Tsunami-In response to the March 11, 2011 earthquake, tsunami, and consequential Fukushima Dai-Chi nuclear power plant crisis, the NPS Office of Public Health Director requested that the Seattle Office and WASO Risk Management Division monitored the situation closely. LT Rachael Lee was assigned as the main point of contact for monitoring and daily updates for the NPS following the earthquake. LT Lee was also the lead for developing a detailed guidance document for the NPS summarizing the incident, USA activities, potential radiation exposure, and dissemination of appropriate emergency preparedness plans.

Waste Water Spill-CAPT John Leffel responded to a wastewater spill. The wastewater treatment plant bypassed an estimated 300,000 gallons of partially treated wastewater into a glacially fed river. The investigation included representatives from the Park, Washington Department of Ecology, and the Environmental Protection Agency (EPA). This office was able to evaluate the site and make recommendations for remediation efforts, operation changes, and testing to ensure the continued safe operation of the wastewater treatment plant. No other discharges have been reported since the site visit. The EPA and Washington State findings are pending.

Healthy Communities Brochure-LT Rachael Lee and LCDR Elisa DuBreuil collaborated with the Pacific West Regional Group Rivers & Trails Conservation Association (RTCA) to help create a “Healthy Communities” brochure. The intention of the brochure is to summarize the health impacts/benefits following a review of literature and case studies that illustrating the linkage between science and active projects. The group was to include poignant graphics intended to inspire internal and external partners.

Vector Monitoring Study at Grand Canyon- In July, LT Kyle Wright coordinated a visit to the Grand Canyon by a team of scientists from the USAF Academy (USAFA) for a week of vector monitoring. The monitoring included mosquito trapping for west Nile virus, St Louis and eastern equine encephalitis. Rock squirrels, chipmunks, mice and wood rats were trapped for flea collection. The fleas were then tested for *Y. pestis*, the causative agent for plague. The monitoring activity allowed for interdivisional work at GRCA and interagency work with the USAFA. It provided the park with additional monitoring data and training for staff, and provided the USAFA with a training exercise to increase their operational readiness.

Operations Branch

The Operations Branch (OB) functions as the official personnel office for all officers detailed to DOI and each of its eight bureaus. This branch carries out the day-to-day administration and management of key commissioned corps operational functions, including officer development, awards, promotions,

compensation, benefits, grievances, effectiveness reports, recruitment, hiring, transfers, and retirement. OB also provides counsel to officers, supervisors, and other DOI leaders on matters related to the operations management of the PHS.

OB serves as the primary liaison between the DOI, NPS, and PHS. It is the crucial link between the central business systems and processes of the Commissioned Corps and the officers assigned to various parks, regions, and operating divisions within DOI. OB administers the Interagency Agreement that authorizes the detail of Commissioned Officers to the DOI, provides NPS managers access to PHS systems for performance appraisals, processes leave requests, and facilitates other business processes.

The branch is responsible for the management of the division's annual base budget which involves conducting cost/benefit and multi-year fiscal planning analysis, participating in the forecast of funds needed for operation, preparing detailed financial plans, budgets, and schedules, and evaluating the efficiency of the program budget. Based on analytical findings, the branch develops recommendations and strategies that will enable the program to operate at its most efficient and effective level.

Personnel Actions

OB continues its efforts to reach the most qualified, be a valuable resource to, and retain the best officers, in the PHS. In 2011, OB detailed ten new officers to DOI and its eight bureaus, and now has a total of 52 PHS Commissioned Officers assigned to the program. This year the OPH explored a partnership opportunity with the Yosemite Medical Clinic. As a result, the clinic is now operated by the NPS, with a clinical staff comprised of commissioned officers in the US Public Health Service (PHS). PHS officers serve in the following capacities: physician, physician assistant, senior nurse manager, and senior staff nurse. This is the first time a model of this kind has ever existed in a national park.

Youth Intern Program

Five highly motivated and extraordinary students were selected to serve as interns in OPH. Their individual talents, experience, and education brought immense creativity, innovation, and success to the program. Their projects and accomplishments included the following:

- Jackie Mostow is an Environmental Studies and Biology major at Oberlin College in Oberlin, Ohio. Her focus was assisting the OPH to explore the use of social media in communicating the HPHP message. Jackie was based in Washington, DC.
- Ted Henson is a master's degree candidate at the Harvard School of Public Health (HSPH). He is a graduate of Vanderbilt University and, prior to enrolling at HSPH, was the co-founder and co-editor of Street Sense, Washington, DC's first newspaper for the homeless. Ted was stationed in Boston this summer. He conducted focus groups and a needs assessment in select Boston neighborhoods to determine how residents use and access local national parks. In addition, Ted designed a Healthy Parks Healthy People US unigrid brochure.
- Greg Raspanti worked on a white paper focusing on public health issues at urban parks and assisted the Office of Public Health and Risk Management working group on crafting a NPS

policy that addresses radon issues at the parks. Greg is a MPH candidate in Environmental Health Sciences at the University of Maryland and has a BS in Health and Physical Education from West Chester University. Greg was based in Washington, DC.

- Erika Atherly is a graduate student with the Colorado School of Public Health working on an MPH with a focus in animals, people, and the environment. She received her undergraduate degree in public health education and completed an internship for that program with the American Cancer Society. Erika was stationed in the Mississippi unit of Gulf Islands National Seashore. She helped to develop the public health aspects of an interpretive curriculum for a Healthy Parks Healthy People project targeted at getting gulf state youth involved in park activities.
- Victoria Shelus was the National Park Service's George Melendez Wright Climate Change Intern for the Office of Public Health. Victoria assisted in completing the first year of a study to combine field-based ecological studies with statistical modeling to predict when and where humans are most at risk of exposure to tick vectors and tick-borne pathogens. She conducted a background literature search, compiled data on tick-borne diseases on states along the Appalachian National Scenic Trail, and assisted in determining sites appropriate for tick dragging and compilation of climate data. Victoria is currently a Master of Environmental Management candidate at Duke University and received her BS in Biology and Environmental Studies at Tufts University. Victoria was based, in Fort Collins, CO.

Awards

In FY 2011, the Awards Committee was successful in getting one Engineer of the Year Award, one Unit Citation, and eleven individual honor awards approved. This was the highest number of awards ever submitted and approved, in one fiscal year.

Direct Assignment Accomplishments/Highlights

CDR Tracy Gilchrist serves as a Project Manager with the Denver Service Center's Division of Design and Construction. In this position, he effectively faced and handled unusual challenges, in the management of two boat launch projects at Lake Mead, each was held to extremely compressed schedules due to falling water levels at Lake Mead. The Callville Bay boat launch ramp was in the construction contract award stage when assigned to him. CDR Gilchrist was able to immediately take over this project, learn the design requirements, and successfully manage construction of this project to completion. The second launch ramp project was so successfully managed by CDR Gilchrist that it was initiated, designed, awarded, constructed and completed within a very short 14 month period of time. Productively completing both of these projects, under budget and in a very timely manner ensured that Lake Mead was able to maintain boating access at both locations, which is one of its primary missions, as a recreational area. His project leadership was always proactive, thorough, and efficient such that all of his projects continued to progress through the design process without any delay ensuring that each project's overall schedule was maintained.

LT Jennifer Cheng is an Injury Prevention Epidemiologist with the NPS Public Risk Management Program. In addition to her normal tasks, LT Cheng was asked to serve as the primary data extractor for and NPS and Center for Disease Control and Prevention (CDC) study on heat illness in Grand Canyon National Park (GRCA). She provided outstanding input to assist the CDC to build a data collection system for the study and once in the field worked long hours, with minimal support and supervision, to identify, extract and input data for the study. LT Cheng conducted the analysis and produced a well-written preliminary report that served as a basis for a final study and provided clear recommendations that will not only improve future data collection and analysis at the park, but will assist the park to more effectively target injury prevention efforts, in the future. Even under difficult conditions, and when the scope of the project expanded, she maintained outstanding professionalism, maturity and worked beyond the call of duty to ensure the completion of the project in a timely manner.

CDR David Engelstad serves as a Project Manager in the Yosemite National Park, Division of Project Management, Branch of Design. The projects that he manages are large, complex, multimillion dollar projects used by most of the four million annual visitors. He has demonstrated a strong work ethic and when necessary, puts in uncompensated hours to meet project deadlines. CDR Engelstad served as the primary project manager for utility projects included in the Integrated Utilities Master Plan (IUMP). The IUMP was developed after the devastating 100-year flood in 1997 which severely damaged the utility infrastructure in Yosemite Valley. He was directly responsible for projects leading to \$25.7 million worth of design and construction awards and in terms of dollar value; his projects have represented over half of the projects awarded by the Division. CDR Engelstad was directly responsible for the successful award of \$7.4 million worth of design and construction contracts funded through the Recreation Fee program which represented 30% of the total amount awarded by all divisions in the park .

CDR Sara Newman is the Program Manager for the NPS Public Risk Management Program and a Deputy Chief for the Office of Risk Management. CDR Newman led visitor safety policy development for the NPS, drafting its first ever Public Risk Management policy, which has set a Servicewide standard for visitor injury prevention. The policy was so well crafted, that it was replicated by the Department of the Interior (DOI) and the Forest Service to inform their agency visitor safety policy. In addition, She founded a highly successful internship program to extend the reach of her program and mentor future leaders in the field of injury prevention. The program has saved the government more than \$1 million in outsourcing costs and has been replicated by the NPS Wilderness Stewardship program, the Occupational Health and Safety Program, as well as the US Army Corps of Engineers and the Bureau of Land Management. Serving in these capacities, CDR Newman continues to lead analytic assessments to influence policy that impacts injury in parks and nationally. She has thoroughly examined and written and analytic review of NPS boat-related carbon monoxide poisonings. Her review included prevention recommendations that spurred immediate industry commitments to adopt engineering solutions and has led to multi-agency effort including the CDC, US Coast Guard, and the US Army Corps of Engineers to take on the problem nationwide. CDR Newman's efforts have put the NPS in the forefront of addressing this problem and serving as an example to all federal land management agencies.

CAPT Mark Anderson serves as a Program Manager with the Park Transportation Management Program in the Park Facility Management Division of the NPS. CAPT Anderson has been instrumental in the

administration and management of one of the largest construction programs in the NPS, the Park Roads Program. Because of the high dollars and importance of roads in the transportation infrastructure of most parks, management of this program is often highly contentious. As a result of his efficient and effective management, CAPT Anderson has established trust and credibility with NPS leadership and field staff. He employed careful communication, tact and a firm grasp of technical and management skills to endure the political demands associated with the administration of this program. CAPT Anderson exercised control over program policy and budget to better achieve the mission of the program. In FY2011, he coordinated 99% obligation rate on construction program funding. With over a billion dollars of construction at stake, CAPT Anderson not only proved himself to be extremely influential, but indispensable.



Office of Public Health Contacts and Office Locations

OPH is a national program with the mission of assisting agency and park unit management and staff with protecting and promoting the health of the visitors to the National Park System. Issues may be referred to the regional contact listed below or to the Director, OPH.

Field Staff (Public Health Consultants)

NPS Region	PHC Office Location	Contact
Northeast	Philadelphia, PA	CDR (select) Craig Ungerecht (215) 597-5371 (202) 641-0051 cell
National Capital	Washington, DC	CAPT Bob Reiss (Retiring 6/12) (202) 513-7056 (202) 641-0046 cell
Southeast (Supervisor)	Atlanta, GA	CAPT Theresa McDarmont (Retiring 03/12) (404) 507-5730 (202) 641-3671 cell
Midwest	Omaha, NE	LT Kurt Kesteloot (402) 661-1718 (202) 641-0055 cell
Intermountain (Supervisor) Region-wide Contact	Santa Fe, NM	CAPT Joe Winkelmaier (505) 988-6040 (202) 641-3518 cell
Intermountain	Denver, CO	LCDR Adam Kramer (303) 969-2922 (202) 641-0013 cell
Intermountain	Yellowstone National Park	LCDR George Larsen (307) 344-2273 (202) 641-3434 cell
Intermountain	Flagstaff, AZ	LCDR (select) Kyle Wright (928) 226-0168 (202) 641-3582 cell
Pacific West	Oakland, CA	VACANT
Pacific NW/Alaska (Supervisor)	Seattle, WA	CAPT John Leffel (206) 220-4270 (202) 641-0034 cell
Pacific NW/Alaska	Seattle, WA	LT Racheal Lee (206) 220-4258
Pacific West (SEKI, CABR, CHIS, DEPO, JOTR, MANZ, SAMO)	Sequoia/Kings Canyon NP	Paul Schwarz (559) 565-3144 (559) 288-3042 cell

Park-based Public Health Personnel (Directly Hired by an Individual Park Unit)

Shannon J. Swann
Lake Mead NRA
601 Nevada Highway
Boulder City, NV 89005
(702) 293-8985

LT Bill Fournier
Gateway NRA
210 New York Avenue
Staton Island, NY 10305
(718) 354-4629

LT Tara Carolfi
Golden Gate National Recreational Area
Fort Mason Building 201
San Francisco, CA 94123
(415) 561-4743

National Park Service, Office of Public Health, Headquarters Staff

Director, Office of Public Health, Washington, DC

CAPT Chuck Higgins (202) 513-7217

Chief, Field Services Branch, Washington, DC

CAPT Bob Reiss (202) 513-7056

Chief, Commissioned Corps Operations Branch, Washington, DC

Sonya Coakley (202) 513-7215

Deputy Branch Chief, Commissioned Corps Operations Branch, Washington DC

CDR Nate Tatum (202) 513-7228

* This is a part time position. CAPT Tatum works for the OPH on Thursdays and spends the rest of his time with WASO Facilities

Chief, Epidemiology and Health Promotion Branch, Albuquerque, NM

CDR David Wong, MD (202) 538-9969

Acting Branch Chief, Health Promotion, St. Louis, MO

Diana Allen (202) 360-6251

Liaison for Science and Innovation, Washington, DC

LCDR Amy Chanlongbutra (202) 513-7097