

**WILDERNESS RISK MANAGEMENT CONFERENCE OPENING ADDRESS**  
**Dr. SARA B. NEWMAN**  
**Commander, United States Public Health Service**  
**Director, Public Risk Management Program, NPS**

Thank you very much Jay, Mark, Shana and Todd and to all of the Wilderness Risk Managers Committee for inviting me to be here. Good Afternoon and Welcome to the 15<sup>th</sup> Annual Wilderness Risk Management Conference here in the magnificent Grand Tetons! I am not only deeply honored to have been asked to help open this conference, but am also excited about being part of what will be an incredible few days for all of us. We have so much to learn from the extraordinary line-up of world class outdoor educators who will present during the next three days and we will learn a great deal from each other. I am also eager for the opportunity to connect with as many of you as I can. To kick off this conference, I'd like to tell you about new efforts within the park service and among other federal land management agencies that I hope will provide increased opportunities for us to work together in the future.

Let me start by letting you know that like you, I am a lover of the outdoors and have had the opportunity, even from the earliest age, to explore and experience our nation's outdoor treasures.

That's one of me in 1967, when my dad put me on "Old Blue" right here in the Grand Tetons. Since that time, our family camped, hiked, canoed, rafted and climbed in state and national parks throughout the US and around the world.

And now my three children's favorite pastimes are to camp and explore in the outdoors. There is nothing more uplifting for the human spirit and building of character than experiencing the wonders, the challenges and yes, even the risks of the wilderness. This is why it is so exciting for me to work for our National Parks- because I adore them so much.

I came to the National Park Service nearly two years ago by what I think was terrific timing and perhaps luck. I am a member of the Commissioned Corps of the United States Public Health Service, one of our nation's seven uniformed services. The PHS Commissioned Corps has one of the longest standing relationships with the NPS than with any other federal agency – this relationship began in 1918 when the NPS' first public health service officer brought his portable lab out to Yellowstone to test the drinking water. Today there are more than 40 Public Health Service officers with the Department of Interior working in disciplines such as environmental health, industrial hygiene, hazardous materials management and in my case, injury epidemiology, among other areas.

Epidemiology is the study of patterns of factors affecting the health and illness or injury of populations. It serves as the foundation of public health and preventive medicine. Epidemiologic methods are used to identify risk factors for disease or injury to determine prevention and treatment approaches. While use of epidemiologic methods in infectious diseases, like West Nile Virus or Salmonella outbreaks are well known, there is a growing body of work and literature in the

field of injury. And injury events, like infectious diseases and even chronic diseases, are not random. For an epidemiologist this is critical. When an event is NOT random, but patterned, we can study it. We can look at causal factors and do something about it. There are many examples where clustered injury episodes (trauma from car crashes, infant poisoning, head trauma due to bike crashes) have been mitigated or prevented with interventions like seatbelts, child-proof caps, and helmets. And it is also well understood that injuries place a serious burden on our population in the United States and worldwide. The leading cause of death in people age 1-44 in the United States is unintentional injuries.

One of our most popular Surgeon Generals, C. Everett Koop once said about childhood injuries “If a disease were killing our children at the rate unintentional injuries are, the public would be outraged and demand that this killer be stopped”.

---

This article may not be reproduced

So I already understood the importance of injury prevention as a public health servant when I came to the park service. I was brought to NPS with a mandate to initiate a first-ever science-based, systematic and comprehensive public risk management program to help parks in their efforts to prevent visitor injuries.

The timing for me to begin this effort is no coincidence. Since Mary Bomar took the reigns as Director of the National Park Service in October 2006, she has taken safety seriously at our parks – Last year she established a Safety

Leadership Council, to deliver and sustain an effective safety strategy for the NPS. This SLC is comprised of a broad representation of NPS staff as well as representation from the highest levels, including two Associate Directors and two Regional Directors. In a memo to all employees sent in July of 2007 Mary Bomar stated:

“Safety must be integrated as a leadership practice and become part of our culture, and not viewed as an isolated program or initiative. A culture change of this magnitude demands vision and credibility from the top down, and will not succeed without the visible commitment of NPS leadership.” Along with this commitment has been support by our Director for an escalating grass roots effort within our parks to bring concepts of Operational Risk Management to the highest levels of management within the park system. So the timing is ripe for enhancing our efforts in both employee and visitor risk management in our parks.

This article may not be reproduced without the author's permission.

You know, if you were fortunate to participate in this conference last year in Banff, Canada, you also had the opportunity to hear from Dave Uberuaga, who gave the key note address. Dave, the superintendent of Mount Rainier, a 33-year public servant, a passionate conservationist and a courageous guard of visitor access said something important about visitor safety management that I want to draw on. He said:

*“Visitor safety management principles tell us that the more structured and comprehensive approach we take to identify hazards, mitigating them ourselves to the greatest extent possible, and then training/ informing/educating our visitors to understand the residual risk and mitigate it further themselves, the better success we will ultimately have. The real balancing act for the national park system is that age old fear of signs and handrails installed everywhere.”*

---

In this important statement, Dave summed up the vision of the public risk management program I am working to establish. To begin a new program it was important for me to do two things first: 1) learn from the rich experience of our park staff who have been managing our parks, and 2) understand the burden of the injury problem in our parks



---

Early this year, I administered a web-based survey sent to about 300 parks to be completed by Chief Rangers to learn about their park's experience, perspective and views on what kind of program components they want to enhance their efforts to prevent visitor injuries. We had an 86% response rate, and survey results have provided great insight and information that have informed the design of this program. The value of this input cannot be overstated — just to give you a sense. Of the 255 survey respondents, the average length of employment is 24 years! Combined, the respondents bring more than 6,000 years of experience.

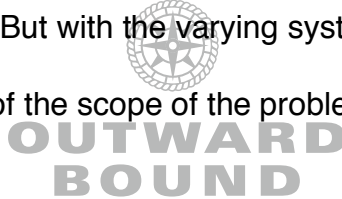
Along with this survey, a continued dialogue with our staff will serve to inform this program.

To understand the scope of the injury burden I needed to know how bad it is.

That is how many people are getting injured and dying in our parks? Who are these people? When and where is this happening? Why are people getting injured?

---

Well we all know that there have been fatalities in our parks and there have been enough fatalities to fill the pages of several books. But because our park system does not have a centralized, systematic data collection system, it is not possible to answer all the questions. But with the varying systems we do have I can share with you the limited picture of the scope of the problem.



---

From NPS data we know that on average three visitors die in our parks every week and about 12 are seriously injured every day due to unintentional injuries. We also know from these data that that most injury events (90%) are reported by ~55 parks. This is important to assist us in targeting efforts.

In terms of rate of injury and death in our parks, the following slides show the injury rates by visitor days in 11 parks with the highest injury rates – when comparing all parks with a reported 50 or more injuries in 2007. These rates allow us to compare parks to each other and you can see that in parks where there are many cars coming through, (parkways) you have short visitation but a

high accident potential, therefore the rates are high. Baltimore Washington Parkway and GW Parkway, Rock Creek park, likely motor vehicle related injury. The fatality slide compares the fatality rate in the 11 parks with a reported 5 or more deaths in one year. Both of these slides take into account a more refined exposure potential through use of visitor days rather than total visitation.

Using another data source, our park Morning Report provides additional detail on fatalities. In 2007 of the 131 unintentional fatalities reported, more than one quarter (26%) were due to Motor Vehicle Crashes. Of the non motor vehicle, recreation related injuries, 76% of victims were male and the median age of victims was 38 years old.

When looking at these data broken down, we see that Driving, swimming and hiking were the three leading activities of fatal injuries in 2007 according to these data reported.

And drowning was the leading cause of death during the reporting period followed by motor vehicle crashes and falls. While the fatality data are important, it would also benefit our understanding of the problem if we had more detailed data on injuries that do not result in death. Death data are just the tip of the iceberg.

Data from our Search and Rescue and Emergency Services provide additional insight about the burden of injury. In 2007 our Park EMS services responded to nearly 15,000 incidents costing more than \$1.5 Million dollars. Our Search and Rescue teams throughout the park service responded to more than 3,500 incidents costing more than \$5 million dollars. And it is these incidents, where risks our visitors take put our own employees at great risk.

---

### **WHY DO PEOPLE GET INJURED?**

Well some people may assume that it is the high risk adventure activities – the technical climbing that gets people hurt. But this is not necessarily the case. In fact people are getting injured for a broad range of reasons. As shown in the data presented earlier, driving is a main cause of fatality and alcohol has been a factor in many incidents. But in other cases it is a matter of not appreciating the risk -- not adhering to park restrictions that protect the natural and human resource. But what is clear from the literature, is that signs are not the most effective way of influencing behavior. In the park, even guard rails are not effective deterrents, even the most obvious risks do not deter some of our park visitors. One of the most recent phenomena, perhaps within the past 5-10 years, is the cell phone use. Here is just one example pulled from many. In Big Cyprus the couple's source of security was the cell phone. In this report, the couple brought no food, no water, no compass and made no efforts to learn about the road conditions before coming to the park. This example underscores a growing



concern that with better technology people tend to rely less on their own resourcefulness and more on technology.

In the case of the Hechts, who represent many tragic incidents both before 1970 and since, of a heart-breaking loss of a child. Only a bit after this picture was taken, 10 year old Andy lost his footing when scurrying on the path in Yellowstone and fell into a thermal pool. He may have not seen the path when he was engulfed in steam. This changes lives. But instead of holding bitter feelings, Andy's parents, Jim and Amy Hecht, spoke up about safety issues in parks to Congress, to the media and to park leadership. Their efforts established a dozen regional safety managers in our parks. They also established a foundation in their son's name to give an annual \$2000 award to parks that demonstrate effective risk management and injury prevention efforts in their park. They have awarded more than \$20,000 to parks since this effort began in 1990. Amy and Jim, now in their 80s, have met every director in our park since 1970, including our current director this past June.

Exposure to carbon monoxide poisoning on boats or swimming near boats is another tragic cause of injury and a "silent killer" that can end a life within minutes no matter the age or sex of the victim. Seven year old Megan died last year in one of our parks swimming behind a houseboat after exposure to CO. These are only two of the many faces of victims who have quickly lost their lives from a very preventable exposure. We need to learn about the true burden of this problem.

## WHAT IS BEING DONE TO PREVENT INJURIES?

The work you all do is a major contribution to preventing park injuries! Your programs build interpersonal and leadership skills in our youth, teach youth about conservation and environmental service and enhance critical thinking and problem solving capacities. The risk management techniques you imbed in your programs have and will continue to prevent thousands of injuries and deaths on our federal lands. Were it not for these program, I know we would see a MUCH higher number and rate of injury. Your participation in this conference to update and refine your approaches and techniques will continue to save lives as you build future outdoor leaders, educators and stewards of our national treasures.

Signs, guard rails, brochures provide some protection but there must be a balance. When tragic deaths occur in parks, our park staff is often compelled to put up more signs, guard rails, warnings and close access. In Dave Uberuaga's presentation last year, he spoke eloquently about the very difficult decisions park managers must make alone, balancing protection of the natural resource, protection of the visitor, and keeping parks accessible to our users.

In addition to your critical role, our park staff has also initiated innovative efforts to mitigate injury in our parks.

I have just a few examples. Blue Ridge Parkway used an epidemiologic approach to address the high number of motor vehicle crashes on the parkway- they collected person, place and time data on crashes and when these data helped them pinpoint the location and time of the events they addressed each problem systematically. For example, when the data revealed a high number of motorcycle crashes in one particular location they placed an oversized, eye-catching sign. This initiative resulted in several fatalities per year to none. They also created brochures to distribute, randomly stopped driver to educate about road safety and put more officers on the parkway during the months and times when they identified most crashes were occurring. Their continued data collection has shown a continued drop in crashes since they initiated their efforts.

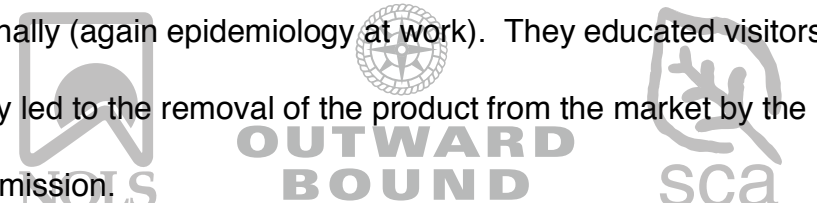
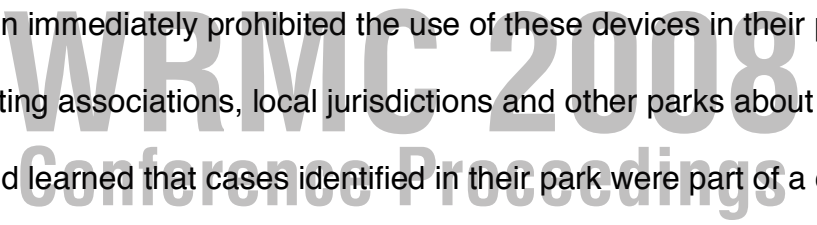
Another effective data-driven effort by our parks was Grand Canyon's "Hike Smart" initiative in which, in addition to developing aggressive signage, they placed rangers at key locations on the canyon to discourage hiking at high-risk times of day and to educate the visitors about the importance of carrying sufficient water. This effort resulted in a significant drop in heat stress incidents.

Another example comes from Glen Canyon last year when the park put an immediate stop to injuries occurring among visitors who were using a kite tube. The kite tube riders were being pulled at 25-35 miles per hour (mph) with a head on or quartering wind. The tubes would rise uncontrollably 15-25 feet in the air

and immediately invert and accelerate back into the water. The combined forward speed of the boat plus the additional accelerated downward speed was driving victims into water at speeds near 50+ mph. All victims were using the kite tube as directed when they experienced these incidents. The injuries seen are consistent with deceleration impact events that cause such injuries as internal trauma, punctured lungs, and cervical fractures.

---

Glen Canyon immediately prohibited the use of these devices in their park. They notified boating associations, local jurisdictions and other parks about the problem, and learned that cases identified in their park were part of a cluster of cases nationally (again epidemiology at work). They educated visitors and their efforts finally led to the removal of the product from the market by the US Product Safety Commission.



---

This article may not be reproduced without the author's permission.

In Haleakala last year when a history of serious accidents and injuries (an average of 60 per year) and deaths occurred on commercially guided bike tours down the 10,000 foot volcano, the Superintendent ordered an emergency safety stand down of all commercial downhill bicycle tours so that a safety assessment could be conducted to determine whether the activity should be permitted in the park. As a member of that serious accident investigation team, I was startled when during an interview with one of the bike companies the owner admitted to

not warning visitors about the real risk of the activity until he had collected their fee and gotten the customer to the top of the mountain.

The point is that our visitors should be able to access and enjoy parks in a satisfying way, but they should adhere to warnings, seek out and be informed of risks that the activity they are engaging in may pose.

---

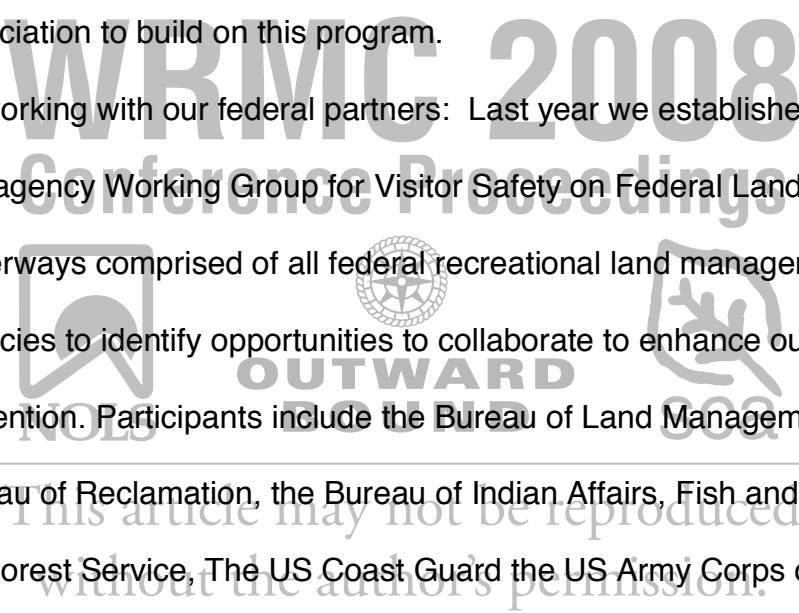
### **WHAT MORE CAN WE DO?**

My hope is that this Public Risk Management Program will serve to provide increased support to the work our park staff do every day to manage risk. I hope this program can capture lessons learned from your experiences and our own so we can share this best practice with other parks and land management agencies, while assisting parks to target their efforts. I hope to do this by providing support to parks in the form of guidance, tools, a better data collection system for collecting injury data, and providing parks with training and technical input to do hazard assessment and incident investigation. Just a few of the initiatives we have begun in this program have been to:

- Conduct better data collection and analysis of injuries to scope the problem and target efforts more effectively;
- Conduct an assessment of injury-related tort claims to understand the magnitude of torts, the economic cost to the NPS and the Federal

Government, identify trends and patterns and contributing factors that may provide lessons learned for future prevention.

- Build Internship/ Student fellowship Program to assist the program to establish innovative interventions, capture best practice, evaluate efforts and build a cadre of future outdoor leaders who understand how to manage risk. We have already placed three students in risk management projects. We are now working on an effort with the Student Conservation Association to build on this program.
- Networking with our federal partners: Last year we established the Interagency Working Group for Visitor Safety on Federal Lands and Waterways comprised of all federal recreational land management agencies to identify opportunities to collaborate to enhance our injury prevention. Participants include the Bureau of Land Management, The Bureau of Reclamation, the Bureau of Indian Affairs, Fish and Wildlife, the US Forest Service, The US Coast Guard the US Army Corps of Engineers. We are also building a partnership with the CDC's Division of Unintentional Injury Prevention, the Associate Director of that Division is here with us this week, Dr. David Sleet. Dr. Sleet is also a member of the Interagency Working Group representing the CDC. My colleagues at all of these agencies would have liked to have been here to meet you and asked me to send their regards.



- Working with my counterparts in Canada, Australia, Europe and other countries so we can share lessons learned and best practice.

These are only some examples of the initiatives we are taking in this program so far to address risk management. Because while it is clear that the NPS is world class when it comes to responding to emergent and injury situations of park visitor through both our Search and Rescue program and Emergency Services program, reinforcing our prevention efforts is critically needed.

There is no better moment for our parks and other federal land management agencies to learn from you and work with you on risk management. I am thrilled to be here today to light the torch for the opening of this week's conference and hope I have also opened up doors for us to engage further. The fact is, in order for us to keep up with the ever-changing interests, needs, values, abilities and behaviors of an increasingly diverse citizenry and customer base, our efforts will be much more successful if we work together. So enjoy a pack-filled three days that will culminate in what I'm sure will be an evocative keynote by the award-winning nature writer, Jack Turner. Thank you!