

# Looking at Risks Facing the Natural Resource Professions

## Improving employee safety in the National Park Service

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### Abstract

The National Park Service Safety Leadership Council hosted a webinar with agency natural resource professionals to discuss the risks they face and the professional culture they work within. Environmental hazards, zoonotic diseases, wildlife handling, hazardous tools, pesticides, and other risks were identified. Concerns were voiced about limits on and need for training, impacts of travel caps, impediments to information sharing, and organizational/cultural influences that affect the health and safety of employees. This poster reviews the webinar discussion, discusses safe work practices, and examines the top four accident/injury categories in the National Park Service and identifies corrective measures for them.

**Key Words:** Safety, hazard, natural resources, training, accident, work practice



Transportation, such as swamp buggies in Big Cypress National Preserve, can pose risks to natural resource employees.



Resource managers work in a variety of hazardous environments, such as caves at Wind Cave National Park.

### Occupational safety meeting and webinar

The October 2010 NPS Safety Leadership Council (SLC) meeting in Yellowstone National Park focused on the risks and occupational safety issues faced by the natural resource professions and included a webinar discussion with natural resource personnel from across the National Park Service. The SLC is a cross section of NPS leaders with the mission “to transform safety from a discreet program to a leadership practice across the service.”

The SLC’s interest in the risks faced by natural resource professionals stems from the recent loss of two natural resource employees in on-the-job accidents. Eric York, a wildlife biologist at Grand Canyon, died from pneumonic plague contracted from a mountain lion during a necropsy. Marina Giggelman died in an ATV accident while monitoring sea turtle nesting success on the beaches of Padre Island. These losses left voids in the lives of coworkers, friends, and families.

The webinar discussion covered risks and professional culture, including the following:

- Some environmental hazards cannot be eliminated from our daily work, but awareness and solid backcountry skills can mitigate the risks. Inherently risky activities include animal capture/use of drugs, work in abandoned mines, and traveling in remote wilderness areas.
- Zoonotic diseases pose a less obvious but no less important threat; we need to raise awareness.
- Border hazards—including encounters with the drug trade and other illegal activities—pose significant risks to workers.
- Other less obvious hazards are involved in laboratory work—specimens, chemicals, and adequacy of lab and safety equipment.
- Visitor engagement with wildlife often puts natural resource managers in hazardous positions.
- Resource management programs (e.g., hydrology, exotics, fisheries, wildlife) rely on shorter-term employees (seasonals, terms, interns, emergency hires, etc.). For many skills requirements (e.g., chainsaw, MOCC, ATV, first aid, CPR, helicopter), training is not offered frequently enough or timed correctly for these employees.
- Without time to train inexperienced or seasonal employees, permanent employees are on standby for whole seasons, which is a strain on permanents.
- Travel caps are a hindrance to sending staff to training or bringing experienced individuals to parks to train natural resource staff.
- Natural resource managers use just about every form of transportation. Many are fraught with risks.
- Equipment itself often poses inherent hazards (e.g., electroshock fishing equipment). Lack of appropriate equipment (e.g., bear boxes at backcountry sites) and lack of knowledge about safe handling of equipment (e.g., ATVs, chainsaws) are also sources of risk.



Many NPS duties, such as rare plant monitoring on cliffs along the Blue Ridge Parkway, are inherently risky. Proper equipment and training help mitigate some of these risks.

- Natural resource employees use firearms in animal capture work with much less guidance and oversight than highly trained law enforcement personnel.

Suggestions from the field addressed the mitigation of those risks:

- Balance formal and informal safety training requirements (i.e., certified trainers vs. local experts who are not yet certified to train). While informal, uncertified training can be a concern, we can’t provide formal training for every contingency and therefore need to allow some informal training.
- Create a culture of positive reinforcement; don’t just react to things that have gone wrong.
- Share safety information across organizational boundaries through activities such as occasional interdivisional tailgate sessions.
- Help employees know their physical limitations and emphasize the role fitness plays in safety.
- Encourage managers to support safe work practices. Doing resource management work in remote areas is dangerous. Staff need adequate safety equipment, support from other divisions, managers who seriously consider suggestions for improving safety, and possibly park policy changes.

### Safe work practices and use of PPE

As part of the webinar, NPS Wildlife Health Program Manager Dr. Margaret Wild addressed the Safe Wildlife Handling Guidelines developed in response to Eric York’s death.

Dr. Wild also summarized a recent publication (Anderson Bosch et al., 2010) that was based on focus group discussions with NPS employees regarding disease reception and use of personal protective measures. In that study, five common themes emerged as barriers to safe work practices:

1. Organizational culture at some parks does not promote safe practices.
2. Challenges are encountered in field environments.
3. Safety practices are seen as an inconvenience or job impediment.

4. Zoonotic disease risk is not at the forefront of employees’ concerns.
5. Personal protective equipment (PPE) is viewed as unnecessary if other safe actions are followed.

Three factors may be critically important in encouraging employees to use PPE:

1. PPE readily available for use.
2. Supervisors who value safety and serve as good role models and mentors.
3. Appropriate training, including familiarity with guidance documents and the importance of completing job hazard analyses.

The bottom line is that if you don’t use PPE, it can’t protect you. Always use your PPE!

### Accident trends and patterns

The top four categories of accidents listed in the NPS Accident Analysis for FY 2009 (National Park Service, 2010) affect natural resource professionals. These categories and ways to address them are listed below:

1. Lifting: Are you lifting unsafely or in awkward positions? Do you perform repetitive lifting activities?

- Conduct safe lifting training.
- Encourage fitness activities to strengthen abdominal and back muscles.
- Require two-person lifts for heavy and cumbersome items.
- Perform ergonomic evaluations for routine tasks that require frequent lifting, bending, and twisting while carrying equipment or loads.
- Require physicals for physically demanding positions.

2. Animals/insects: Do you use PPE to prevent injury? Tick bites and bee stings are a leading source of injury/illness. Employees are also injured while handling wild or tamed animals.

- Educate employees about tick-borne diseases and methods to prevent exposure to ticks.
- Use tick logs to track work-related exposure and record in SMIS only when symptoms appear.
- Train employees on the benefits, limitations, use, and care of PPE.
- Require PPE when working with animals.

3. Hand tools: Lacerations and acute and cumulative trauma disorders from heavy tool usage (e.g., rock hammers, saws, etc.) often occur from using the wrong tool for the job, using damaged equipment, lack of appropriate PPE, and operator error.



Employees can be injured when handling wild animals.

- Conduct a hazard analysis to determine the correct PPE needed and require PPE use.
- Select equipment that provides an ergonomic interface, such as padding for vibration.
- Conduct training and refreshers on use, selection, and potential hazards of power tools.
- Establish a frequent tool inspection process.
- Clean tools after every use and replace damaged tools and PPE immediately.
- Select the right tool for the job every time.

4. Slip, trips, and falls: Are you wearing the right footwear? Paying attention to tripping hazards on the floor, like cords? Talking or texting on your phone while walking? Don’t consider slips, trips, and falls as not preventable; determine the root causes.

- Install slip-resistant flooring in entrance ways.
- Repair or replace buckled or loose rugs and floor tile.
- Mark spills and obstructions.
- Avoid cleaners that leave slippery residue.
- Replace burned out light bulbs immediately.

*If you don’t use personal protective equipment (PPE), it can’t protect you. Always use your PPE!*

#### References

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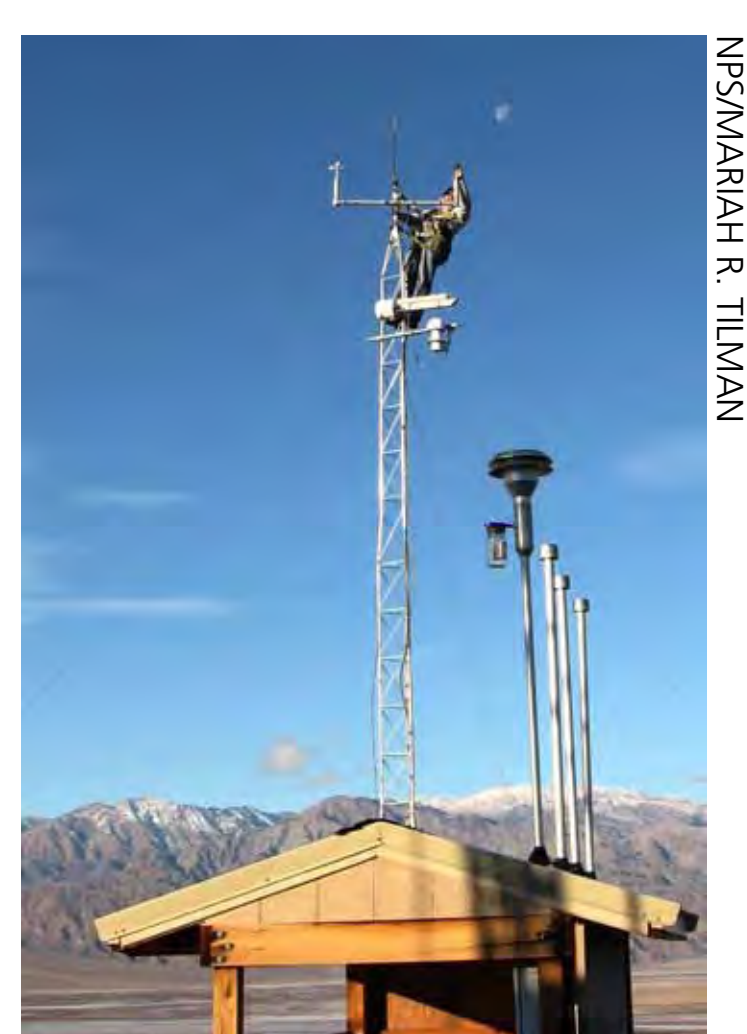
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Employees require proper training and equipment to safely perform their duties.