

## Living, Working, and Dying in the National Parks

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GUILFORD, CONNECTICUT HELENA, MONTANA AN IMPRINT OF GLOBE PEQUOT PRESS

# THIS IS YOUR BRAIN ON THE GRAND CANYON

Nude from the waist down, the woman arched her back off the gurney and kicked a padded ankle restraint across the room. Obviously the Valium wasn't working. The doctor yelled for something stronger. A male park ranger fought with the woman's kicking legs while I leaned all my weight on her upper torso so a nurse could inject the drug into the catheter I had put in her arm. With all her panting and senseless blabbering, you would have thought we were trying to sedate a lunatic. But this young woman was not insane. She was just a girl who went hiking in the Grand Canyon.

It was April 1997. We were in the emergency room inside a medical clinic on the Grand Canyon's South Rim. The park ranger struggling to maintain his hold on the hiker's tan legs was Cale Shaffer, my newest and youngest employee. Sweat stains blossomed all over Cale's uniform shirt, and his dark brown bangs were falling in his face. An Outdoor Recreation grad from Pennsylvania, my newbie ranger stood five-foot-five in his hiking boots. Cale was twenty-two but could pass for fifteen, and the Eagle Scout hadn't rubbed off him yet. He looked much too young to be wrestling with the legs of a half-naked woman while a nurse had both hands in the woman's crotch, trying to slide a rubber tube up the patient's urethra in order to empty her bladder.

The sick hiker responded to this medical intervention in a bizarre, almost sexual manner, moaning and wiggling her hips out of the nurse's range. "Whoa there Nelly," the nurse said with an awkward giggle. A decade of rangering had desensitized me to a variety of disturbing sights, sounds, and smells. But in front of my Boy Scout of an employee, the carnality of this poor woman's delirium burned my cheeks with embarrassment. I made a little wish for the woman: Please, when this latest victim of the Arizona desert wakes up in intensive care a week from now, don't let her remember a thing about her trip to the Grand Canyon.

Earlier that afternoon, Cale found the hiker during a routine patrol of the Bright Angel Trail. He used his radio to call for a ranger-medic to respond, and within a half hour a skilled pilot landed the park helicopter on a patch of flat red rock. I stepped out, grabbed my medical packs, and climbed the slope to the trail where Cale introduced me to a young woman sitting next to a puddle of vomit. The hiker's vacant stare helped me make my diagnosis. To be certain, I held up her empty 1.5-liter canteen and asked her how many of these she had drunk that day.

"Six," she said, "maybe seven."

Nearly two gallons of water consumed in five hours. This explains why, by the time we landed on the canyon's South Rim, Cale and I were sitting on the hiker to keep her from jumping out of the rescue helicopter. "Let me out of here," she had screamed at us. "I need to pee!"

Hydrate or die. This is never more true than when trekking in the Grand Canyon. But an overzealous effort to stay hydrated on a desert hike can also kill you. Too much water consumed too quickly can dilute your blood to the point that your sodium level drops to a critical level. Excess water in your diluted blood moves across membranes to places more salty. The brain is as good a place as any for this fluid to go—but there is only so much water the brain will accept without complaining. Not everyone with hyponatremia (also known as low blood sodium or water intoxication) goes nympho or tries to jump out of flying helicopters. Some become comatose and die. Some go into seizures. Some turn into fountains of vomit. Some see a kaleidoscope of angels. Some try to drink their flashlights. One bit a rescue volunteer so hard he drew blood. That's your brain on a water overdose—swollen and soggy and making you do things normally reserved for bad acid trips.

Once our sick hiker was medically stabilized and on her way to the Flagstaff ICU, Cale and I drove the ambulance back to the rescue cache for supplies. On the way, my new employee hounded me with newbie questions. If he encounters another psychotic man hurling rocks at hikers, should he arrest him, write him a ticket, or ask him to stop? Can he put in for overtime pay if he misses his unpaid lunch hour for five days straight? Were the deadly scorpions he shook out of his boots each morning really deadly? How could he prevent the bighorn ram lurking behind Sheep's Corner from butting him off the trail? And would I please explain, one more time, how you tell the difference between heat cramps, heat exhaustion, heat syncope, heat stroke, dehydration, and hyponatremia?

The last question troubled Cale most of all. Even physicians have difficulty diagnosing a heat illness without the benefit of blood lab results. A few days earlier Cale had concluded that another delirious hiker was hyponatremic and refused to give the man a drink of water when he asked for it. Later, a field blood test showed that Cale's patient wasn't water intoxicated—he was dehydrated! What the guy needed most was water, and Cale had withheld it. Everything turned out okay (a more experienced ranger was flown in and gave the man fluids by IV), but Cale continued to beat himself up over it. He felt bad. He felt stupid. He was making so many mistakes.

"We all feel that way when we first start out." I told him. "It gets better with time. I promise."

\* \* \*

Ten years earlier, in the spring of 1987, I strapped on a gun belt and placed a "Smokey Bear Stetson" on my head for the first time. (Although NPS uniform hats are now made by Stratton, rangers still call their hats "Stetsons" for the first company that made them.) After obtaining my Forestry degree in my home state of Tennessee, I worked at Cape Hatteras National Seashore. At the time, I had felt like a young ranger with too much responsibility, prematurely kicked out of the nest by a harried supervisor. Ten years later I was the distracted district ranger at the Grand Canyon who, as my superior had done a decade earlier, had to apologize for my failure to orient my employee properly to the complexities of his new job. I claimed the latest chain of events as my excuse. My district was the busiest (in numbers of search and rescue missions) backcountry area in the nation. Last summer had been the deadliest hiking season in the park's history. The staff had yet to recover from the aftermath of so many fatalities, and the emergencies kept coming, leaving us little time for educating the park visitor and protecting the natural resource. As I recently explained to a reporter, "People come to the Grand Canyon and die; we clean up the mess."

My superiors were less than thrilled with the picture my public comment painted, but they knew we could not afford a repeat of last year's carnage. They developed a creative financing strategy that afforded me some additional funding to do my part in implementing a new program to prevent heat-related deaths in the Grand Canyon. I used a portion of this budget to hire Cale Shaffer. To stretch those funds even further, I asked Cale to assist me in coordinating the activities of a volunteer rescue team. This socalled volunteer rescue team was composed of a raggedy bunch of juvenile delinquents, otherwise known as "hoods in the woods."

Despite the high hopes we had for our new hiker-safety program, the year was off to a grim start. In March a private plane crashed while flying in a blizzard over the canyon's North Rim. After two weeks of searching the snowy forests by air and land, a cadaver dog found the female victim. When I reviewed the report, I noted that Cale Shaffer had photographed the accident site and assisted with the recovery of the remains. The senior ranger at the scene told me that the force of the crash had "augered" the vic-tim's torso into the snow.

God Almighty! Cale seemed much too young to be unscrewing human body parts out of snowbanks. He had been a ranger less than a week. What was I thinking when I allowed him to go on that assignment? Shouldn't a district ranger protect her youngest employee from such atrocities?

By the end of my impromptu employee counseling session, the post-sunset rush hour out of the park had come and gone. I dropped Cale off at the shack he shared with another ranger and a wildland firefighter. Then I went home, ate dinner, and praved that the phone didn't ring. When I finally made it to bed, I couldn't sleep. Awake, I considered the consequences of exhausted rangers responding to increasingly hazardous missions. I conducted a riskversus-benefit analysis of my using disadvantaged youth to patrol a dangerous trail. I mentally reshuffled the paperwork piling up on my desk. I outlined strategies for keeping the strained relationship I had with my supervisor from deteriorating any further. I picked apart all the rescue operations that went poorly: the children who died on the trail; the people who drowned; the people who fell to their death before we could get a rope to them; the missing hikers we never found. I beat myself up over it. I felt bad. I felt stupid. I was making so many mistakes.

The following night, my neighbor, ranger Chris Fors, walked across the street with a six-pack under his arm. Sitting at my kitchen table, we proceeded to test how many beers it would take to drown our discontent. Chris and I were both in our early thirties. We both started at seashore parks back east before traveling thousands of miles from our friends and families to work out west. At first we had loved being park rangers, but now something felt horribly out of whack. Death haunted us, the Grand Canyon scared us, park managers disappointed us, and our careers were not following the script.

Today Chris Fors would agree: My promise to Cale Shaffer was a lie. Life for a park ranger in a big park did not get better with time. It just got different. But for me to acknowledge this truth required less beer and more years of sober reflection. And at the Grand Canyon, meditative retreats on mountaintops were a luxury our jobs did not allow.

#### CONTENTS

	Introduction	vi
1	This Is Your Brain on the Grand Canyon	1
2	Plover Patrol	7
3	Faint at Heart	16
4	As Yosemite Falls	23
5	Our First Summers in the Sierra	31
6	Dead Bear Walking	42
7	The Ranger Olympics	49
8	A Girl in Boys Town	58
9	The Partner	68
10	The Tell-Tale Backpack	74
11	Mary, the Split-Tail Clerk-Typist	79
12	Gateway to the Underworld	91
13	Scorpion Karma	94
14	Predator-Prey Relationships	103
15	Cruel World	113
16	Crash	119
17	A Cold Wet One	125
18	Dry Heat	136
19	The Devil's Corkscrew	146
20	Friday the Thirteenth	150
21	The Gut of Darkness	154
22	Thunder and Lightning	157
23	Pine Pigs	165
24	Dangerous Types	170
25	Thanksgiving Ledge	180
26	Stuck in the Fee Booth	191
27	What's So Wonderful about Wonder Lake?	197
28	Separation Canyon	204
29	Place of Emergence	212
30	On the Mountain	217
31	The Ranger's Burden	226
32	The Last Call	233
	Epilogue	235
	Acknowledgments	239
	Index	241
	About the Author	246

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Text designer: Libby Kingsbury Layout artist: Mary Ballachino Project manager: John Burbidge

Library of Congress Cataloging-in-Publication data is on file.

ISBN 978-0-7627-5263-8

Printed in the United States of America

10 9 8 7 6 5 4 3 2 1