

Grand Canyon

National Park Service
US Department of the Interior



2018 ANNUAL REPORT

BRANCH OF EMERGENCY SERVICES

EMERGENCY MEDICAL SERVICES

SEARCH AND RESCUE

STRUCTURAL FIRE

PREVENTIVE SEARCH AND RESCUE

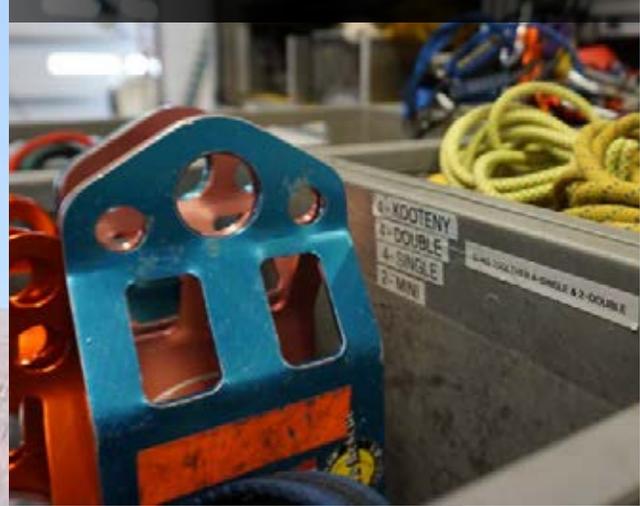
INCIDENT MANAGEMENT

2018 at a glance

Emergency Medical Services
Total Incidents: 1,054



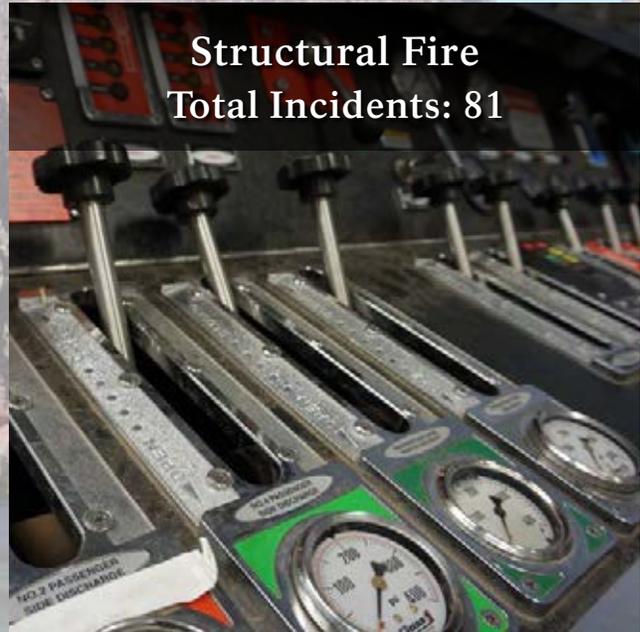
Search and Rescue
Total Incidents: 265



Preventive SAR
Total Actions: 140,897



Structural Fire
Total Incidents: 81



Incident Management Team
Total Team-Managed Incidents: 5





The Branch of Emergency Services fosters professional development and continuous learning.

We advance V&RP leaders through adult education and incident support.

IN THIS EDITION

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On the cover: Technical rescue training. NPS photo.

Facing page: Tools of the trade. NPS photos.

Background image: SAR training on the Colorado River. NPS photo.

Our annual report is produced in-house using environmentally responsible materials.

Questions & comments are welcome:
Email grca_information@nps.gov
attn: Emergency Services

EMS Program Updates & Accomplishments

2018 EMS continued an internship program with the University of New Mexico. Starting in May, Mitchell Page worked through September and Fernando Bayardo worked through October as Paramedics. This additional staffing provided essential coverage during this short staffed year.



A new procedure of closing wounds was added to the 2018 Protocols, specifically intended for the Phantom Ranch Clinic. The procedure includes staples for scalp lacerations and the use of Dermabond for selected lacerations. In the future, this may prove helpful in mitigating Medevacs and possibly allowing backcountry travelers to continue on with their itinerary.



We purchased an i-STAT 1 (Model 300) portable clinical hematology analyzer for the Indian Garden Ranger Station Clinic. Although field testing of blood samples has occurred for over a decade at Grand Canyon, this additional device enables us to measure cardiac troponin levels for the diagnosis of acute myocardial infarctions – never before available at this location.



The program also introduced the 3M Bair Hugger temperature sensor for real-time core temperature monitoring. These units are in service on all ground ambulances and at the helibase. We replaced all Port O2 Vents with Pulmodyne O2 Max Tri disposable CPAP devices, allowing for adjustable FiO2s and a more seamless transfer of care. Another device added this year was the Medtronic ICD Detection Donut Magnet to alleviate inappropriate discharge of implanted pacemakers and defibrillators.

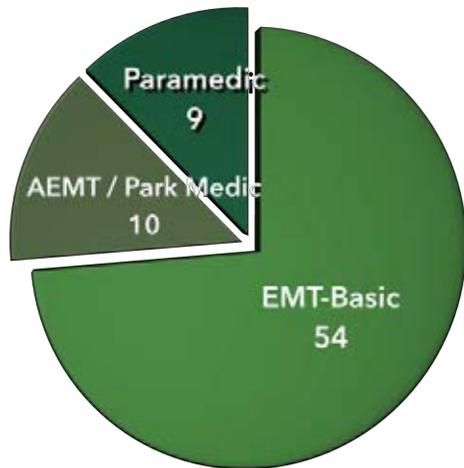


Our 2018 EMS Protocols expanded the AEMT scope of practice to include Tranexamic Acid (TXA), and added the use of capnography and the medication Naloxone (Narcan) to the EMT scope of practice. Narcan nasal spray kits were provided to South Rim and North Rim patrol staff for faster response in the event of opioid overdoses. Toradol was also added as another pain control option and has proven very beneficial when drug shortages of this class are common. These additions continue to help our providers treat patients to the current industry standard in prehospital care.

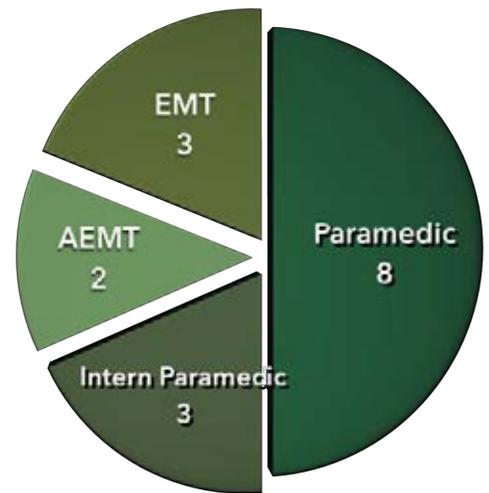


Intranasal administration of pain medication in the field.
NPS photo.

NPS EMS Providers



EMS Partners



EMS Program Management	TOTAL EMS INCIDENTS:	First Aid	Basic Life Support	Advanced Life Support
Training Costs (excl. salaries) \$25,345	1,054			
Program Funding (excl. training) \$401,720				
Total: \$427,065				
	Trauma	n/a	144	154
	Medical (Non-Cardiac)	n/a	229	337
	Cardiac	n/a	24	52
	1st Aid / No Patient Contact:	114*	* Data from this category is not differentiated by trauma, medical, or cardiac when logged.	
	TOTALS	114 (11%)	397 (38%)	543 (51%)
	Patient Refusal/AMA (Against Medical Advice): 402			
	Treat and Release: 109			



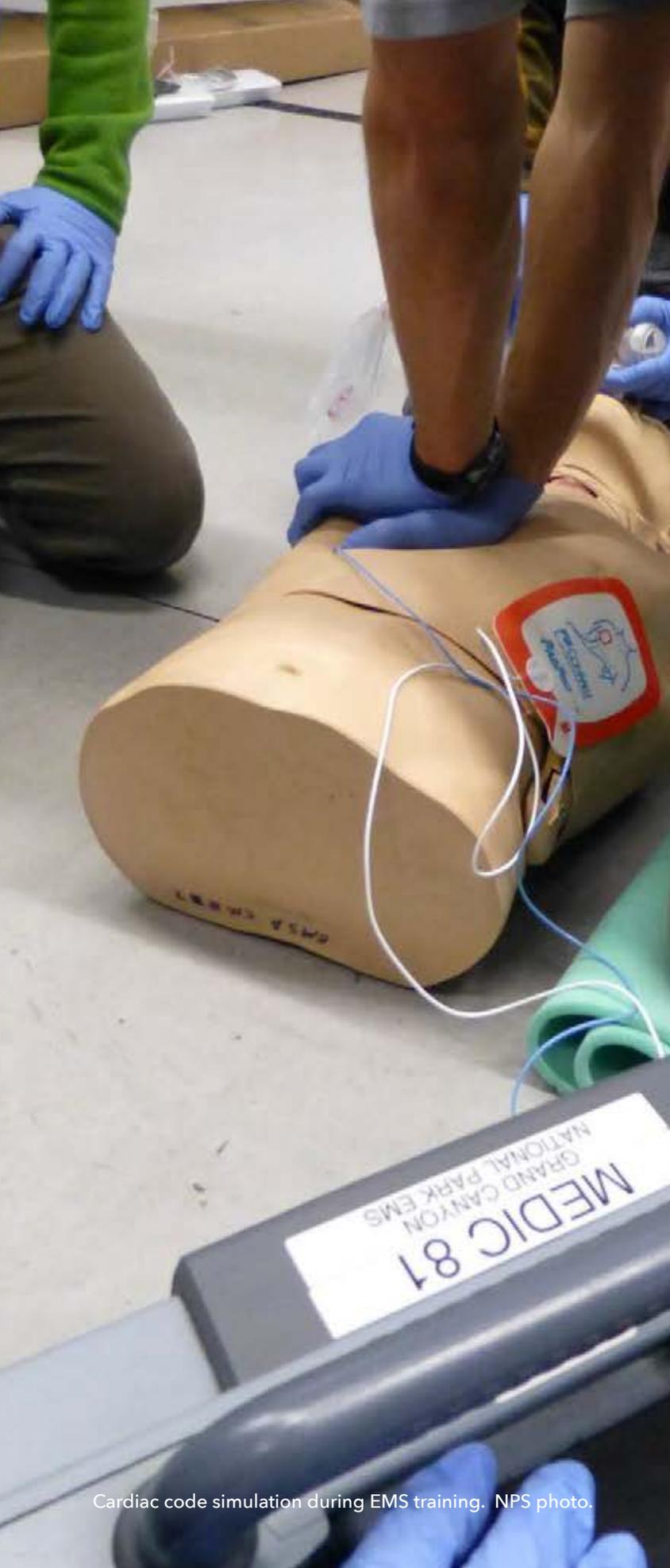
A training exercise.
NPS photo.

EMS Program

Complaint / Injury	# of Patients
Abdominal Pain	48
Airway Obstruction/Choking	1
Allergic Reaction	16
Assault	4
Back Pain/Injury	8
Bite, Animal	6
Burn	3
Carbon Monoxide Poisoning	1
Cardiac Arrest	11
Cardiac Chest Pain	62
Cerebral Vascular Accident (CVA)	10
Diabetic Emergency	8
Difficulty in Breathing	67
Electric Shock, Lightning	7
Electric Shock, Other	0
Eye Injury/Infection	7
Headache	11
Heat Illness	93
Hypothermia	2
Illness/"Sick Person"	296
Musculoskeletal Injury	143
Ankle 22	Head 25
Arm 24	Knee 8
Chest 5	Neck / Back 2
Foot 11	Leg 21
Hand 10	Shoulder 10
Other 5	
Overdose	21
Psychiatric Problem	11
Pregnancy Complication	3
Seizure	14
Unconscious/Syncope	59
Unknown Problem	36



EMS cache. NPS photo.



Grand Canyon National Park had a 27% survival rate for sudden cardiac arrest incidents in 2018. Critical to patient survival is public and/or staff access to automated external defibrillators (AEDs) and the continued willingness of family members and the public to initiate high quality CPR prior to the arrival of EMS.

In 2018 Emergency Services personnel conducted 1 CPR class, training 13 new NPS employees, and provided recertification for 89 healthcare providers. This marks the least amount of CPR training sessions provided to other park divisions in years. The primary cause of this drop was a 50% loss of Emergency Services personnel in 2018. See page 12 for more about overall staffing challenges.

2018:

Sudden Cardiac Arrests

Number of Sudden Cardiac Arrests:	11
Survivors (Hospital Release):	3
Lay Person AED Application:	3
Lay Person/Family Initiate CPR:	7
AED Shock Delivered:	2

Fatalities (Parkwide)

Traumatic:	17
Non-Traumatic:	6

Number of AEDs:

NPS:	63
Other:	56



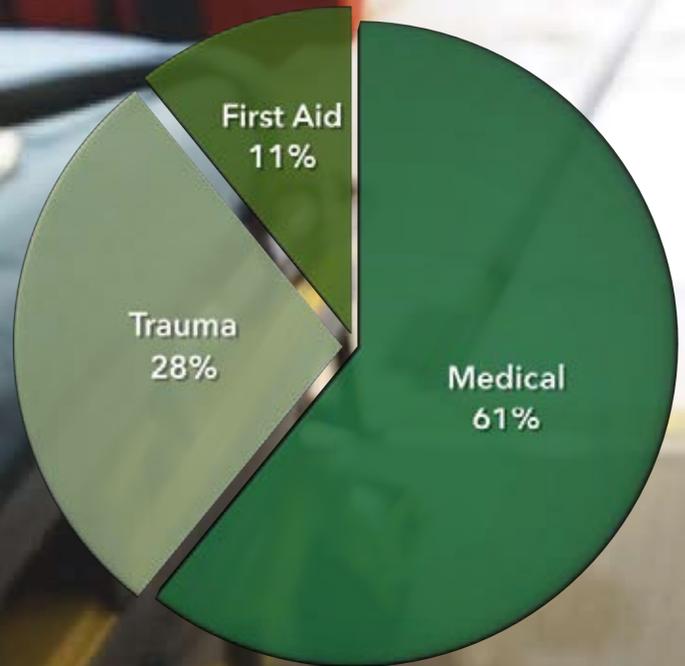
Cardiac code simulation during EMS training. NPS photo.

EMS Program

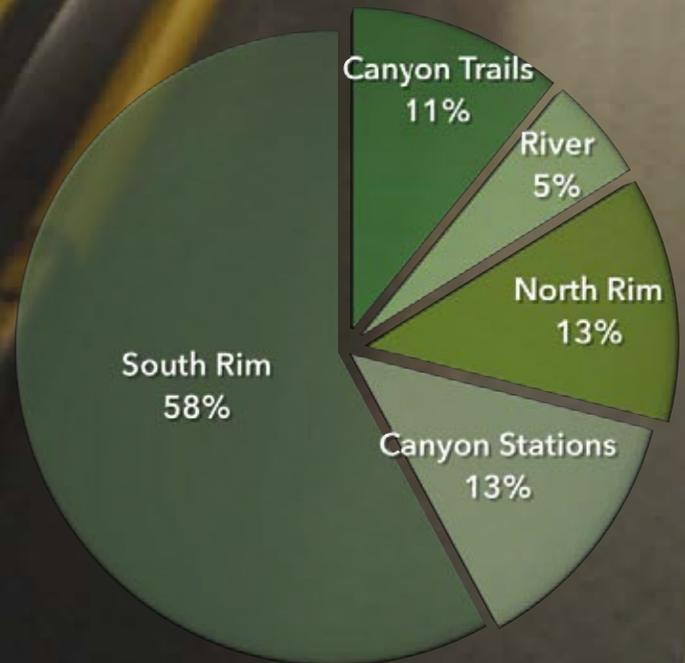
EMS Incident Location

Canyon: 115	
Bright Angel Trail:	57
South Kaibab Trail:	29
North Kaibab Trail:	11
Backcountry Trails:	18
Corridor Ranger Stations: 139	
Phantom Ranch:	99
Indian Garden:	34
Cottonwood/Roaring Springs:	6
River: 56 (Lee's Ferry to Lake Mead)	
Out of Park/Mutual Aid: 6	
North Rim: 134	
Lodge:	64
Other:	70
South Rim: 610	
Lodges:	195
Public Buildings:	97
(Visitor Centers, Backcountry Ranger Office, Market, Lookout Studio)	
Residential/Workplace:	151
Roads/Overlooks:	93
Clinic/Station One:	44
Grand Canyon School:	3
Rim Trail/Greenway:	10
Campground (Mather/Desert View):	17

EMS Incident Type



EMS Incident Location



A gurney inside of one of the park ambulances. NPS photo.

We were particularly thankful for the hard work of dedicated volunteers throughout the year. Our EMS partners included volunteer Paramedics Bob Derr, Tre Groeschel, Annalisa Laube, John Pavlik, Catherine Slade, Arron Miller, Emily Pearce, and Ken Phillips. We were further supported by Intern Paramedics Mitchell Page, Fernando Bavardo, and Nick Menapce, by volunteer AEMTs Robert Gallagher and Rosie Luna, and by volunteer EMTs Bernadette Regan, Kevin Kennedy, Sueanne Kubicek, and Tim Vogelzang.

EMS Call Volume by Month



EMS training. NPS photo.

EMS Program

A DECADE IN REVIEW: EMERGENCY MEDICAL SERVICES

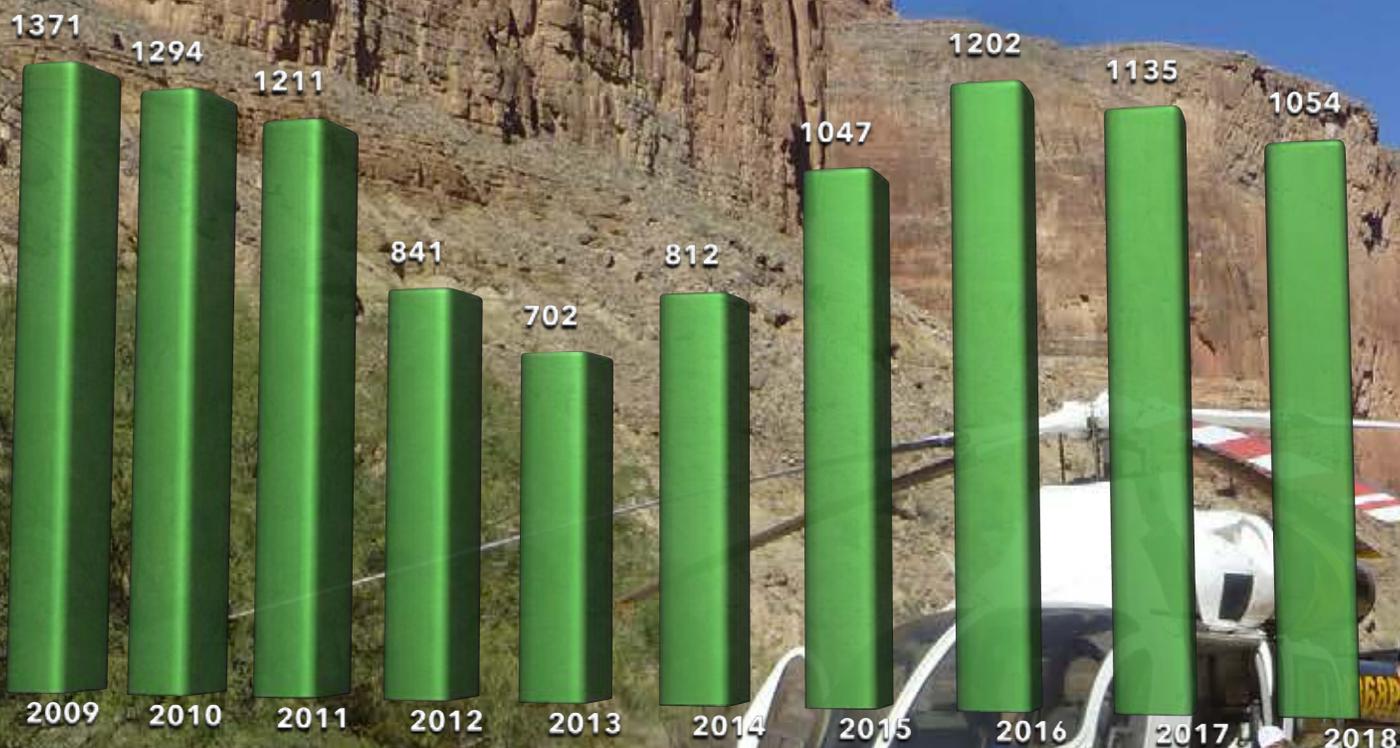
Year	Incidents	NPS Ground Transports	NPS Air Transports	Cardiac Arrest	Heat-Related Injuries	Fatalities
2018	1054	426	124	11	93	17
2017	1135	386	141	5	44	19
2016	1202	433	110	8	74	17
2015	1047	358	159	8	105	15
2014	812	413	147	9	96	26
2013	702	384	103	5	62	8
2012	841	366	128	5	54	12
2011	1211	386	117	8	56	21
2010	1294	345	157	5	148	15
2009	1371	489	128	3	144	16

Learning techniques to treat police service dogs. NPS photo.



A DECADE IN REVIEW

Total 2018 EMS Incidents: 1,054
10-Year Average: 1,067



In 2012 a new reporting system was implemented, causing a change in statistical reporting.

On the above graph, the drop in total incidents in 2012-2014 is likely due to under-reporting of First Aid Only incidents.



A river medevac mission. NPS photo.

SAR Program Updates & Accomplishments



Despite continued record levels of visitation to Grand Canyon National Park, at 265 the total number of Search & Rescue (SAR) incidents in 2018 fell significantly below the 10 year average of 294. Operationally, this was a good year to see a decrease in SAR activity due to staffing shortages within Emergency Services.

Our greatest challenge in 2018 and on into 2019 was hiring difficulties. As 2018 drew to a close, more than 100 positions park-wide were vacant, including the PSAR Supervisor, year-round Paramedic and Fire Chief positions within Emergency Services. Two exceptional Emergency Services staff members left Grand Canyon due to job insecurity following an Office of Personnel Management (OPM) ruling against National Park Service use of term appointments. The PSAR Supervisor and year-round Paramedic were serving in key SAR leadership positions prior to their departure. Fortunately, several returning seasonal staff and an amazing cadre of volunteers enabled us to handle the SAR workload throughout the year.

Only one significant multi-day search incident occurred in 2018. On September 7th, 65-year-old Michael Howard disappeared below the surface of the Colorado River near Clear Creek (River Mile 84.5). Mr. Howard drowned while attempting to save his wife following her accidental fall into the river from a beached raft. Neither was wearing a life jacket at the time of the incident. Through quick action by on-scene commercial guides, Mr. Howard's wife was pulled from the river and resuscitated. Mr. Howard's body was recovered on September 14, 2018 near River Mile 94.

A guide on a river trip removes a panel marker as Helicopter 368 approaches. Arizona Raft Adventures (AZRA) photo.

A sunset litter-carry on the Bright Angel Trail. NPS photo.

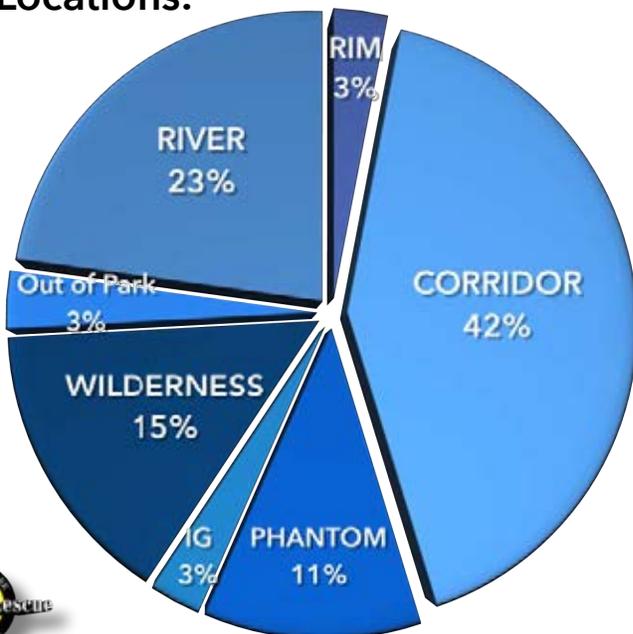


2018 Total SAR Costs: \$444,556

Funding for SAR incidents that exceed \$500 in non-programmed funds (most SAR aviation and overtime costs) is sourced to NPS-service wide accounts instead of an individual park's funding. We conducted 192 incidents that passed this threshold in 2018.

SAR Aviation and/or Supplies Cost	NPS	Other
Helicopter	\$288,960	
Supplies & Other Costs	\$2,900	
*Total:	\$291,860	

SAR Locations:



SAR Personnel Costs	NPS	Other
Programmed Hours	\$78,108	
Non-Programmed Hours	\$74,588	
Non-NPS Hours		\$254
*Total:	\$152,696	

SAR Personnel Hours	NPS	Other
Programmed Hours	3,129	
Non-Programmed Hours	2,291	
Non-NPS Hours		17
Total:	5,437	

* Does not include Mutual Aid response to ZION

SAR Program

Total SAR Incidents: 265	
Major SAR Incidents	192
SAR-Related Fatalities	9
Ill and/or Injured	239
Not Ill or Injured	90
Unfounded	4
Lives Saved	11

SUBJECT ACTIVITY - INJURY: 260	
Activity	Total
Boating, Motorized	16
Boating, Non-Motorized	33
Canyoneering	4
Climbing/Scrambling	7
Foul Play	1
Hiking, Overnight	52
Hiking, Day	96
Stock	7
Suicide	1
Trail Running	6



Technical rescue training.
NPS photo.

CONTRIBUTING FACTORS: 481

Activity	Total
Animals	7
Darkness	1
Drugs or Alcohol	10
Equipment Failure	3
Falls, Slips, Trips	70
Fatigue/Physical Condition	162
Flood	1
Insufficient Info/Error in Judgment	146
Natural Event (Other)	5
Rockfall	5
Weather (Heat: 82 / Cold: 6 / Wind: 1)	71

SUBJECT AFFILIATION: 260

Organization/Group	Total
Commercial Tour	36
Concession Employee	6
Concession Guest	15
NPS Employee	4
Other Organization/Group	4
School Group	2
Unaffiliated NPS Visitor	191
Unknown	2

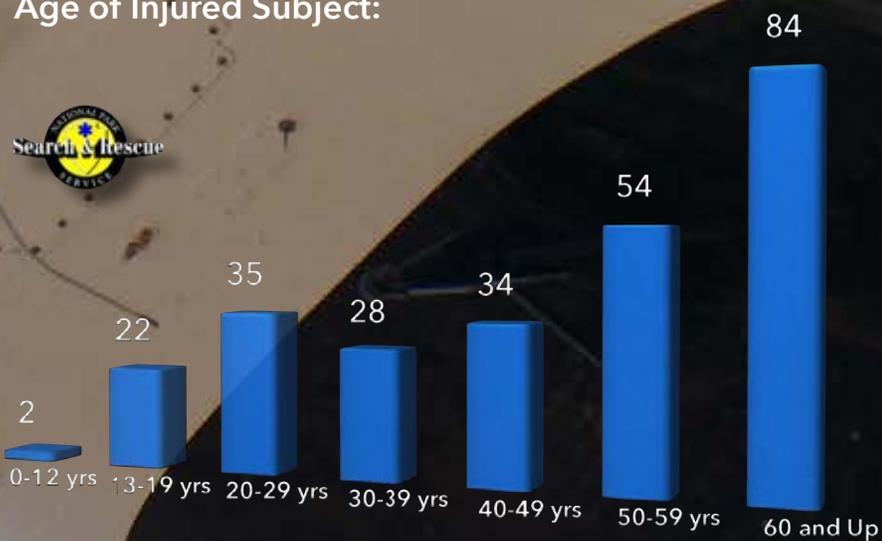


Swiftwater rescue training.
NPS photo.

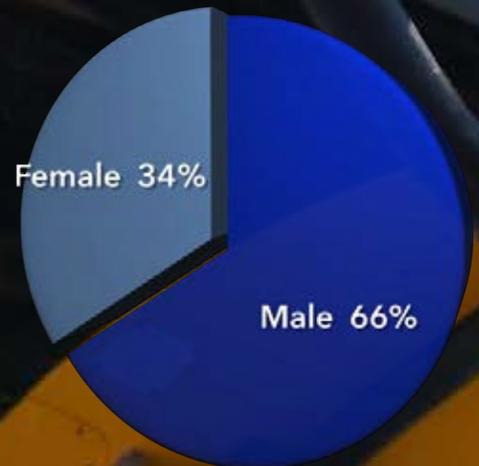
SAR Program



Age of Injured Subject:



Gender of Injured Subject:



Pilot Heather Saur keeps a sharp eye on responders during a short-haul mission. NPS photo.



Unmanned Aircraft System (UAS):

Grand Canyon National Park implemented the National Park System’s first Unmanned Aircraft System (UAS) program in September 2016.

Goals of the program are to reduce aviation risk to personnel, resources, and visitors, and to develop best practices for future UAS integration into other National Park Service units. The program is authorized as a 3-year operational test and evaluation, and the UAS pilots are certified by the US Department of the Interior (DOI).

UAS Missions: 8

Site	Incident or Project	Date
Desert View	Resource Survey	1/19/18
JOTR	Crime Scene Survey	6/18/18
Kaibab NF	Resource Survey	7/5/18
Kaibab NF	Resource Survey	8/8/18
Trail View Overlook	Investigation	10/3/18
Mather Point	Investigation	10/9/18
CACH	Crime Scene Survey	10/10/18
Phantom Ranch	Pipeline Survey	10/18/18

Know Before You Go: Launching, landing, or operating a commercial or hobby UAS in National Park Service (NPS) sites is prohibited unless approved by the NPS under a special use permit. The NPS staff pilots operate UAS under an approval process through the Federal Aviation Administration (FAA), US Department of the Interior (DOI), and NPS policy.

More information: go.nps.gov/UAS

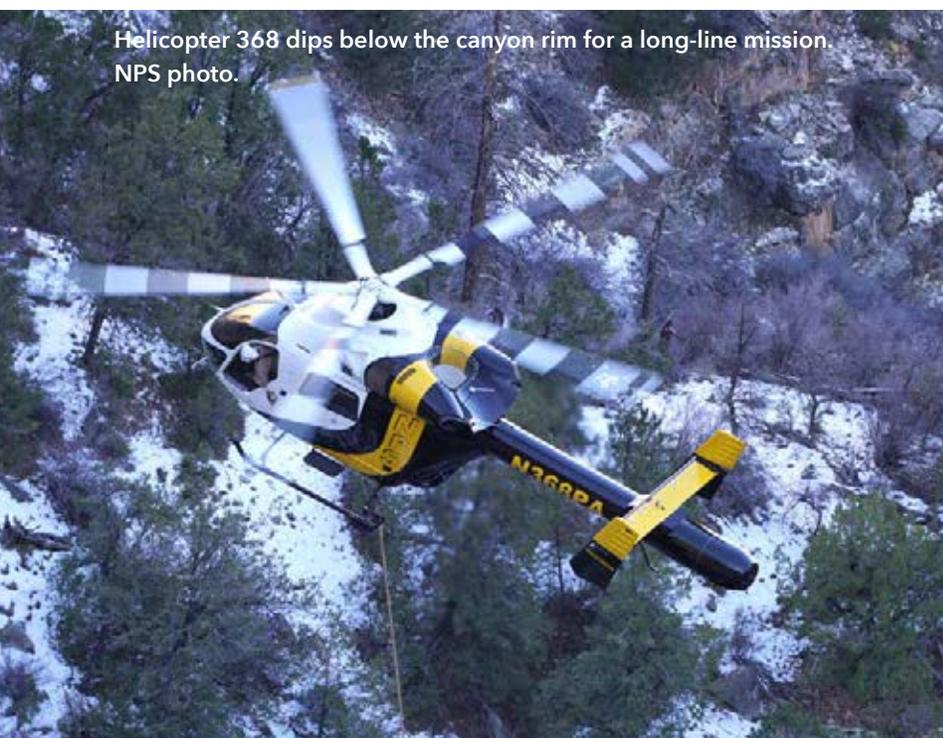


The park’s UAS aids an investigation at Mather Point. NPS photo.

SAR Program

2018 HELICOPTER SHORT-HAUL RESCUE MISSIONS: 12

Location	Date	Problem	Resource
Grandview Trail	March 6	Leg Injury	GRCA
Tapeats Creek Trail	May 15	Leg/Arm Injury	GRCA
New Hance Trail	May 28	Leg/Ankle Fracture	GRCA
Spry Canyon	June 2	Fall Incident	ZION
South Kaibab Trail, Lower Panorama	June 4	Heat Stroke	GRCA
Gila Wilderness (Fire)	June 13	Dehydrated Firefighter	USFS
Bright Angel Trail, 1.5 Mile Resthouse	July 1	Fall / Head Injury	GRCA
Havasu Creek	July 6	Ankle / Leg Fracture	GRCA
Subway Route	July 31	Knee Injury	ZION
Hidden Canyon Trail	August 28	Rescue of Trapped Hikers	ZION
Tapeats Creek	October 3	Ankle Fracture	GRCA
Subway Route	November 3	Lower Leg Injury	ZION



Helicopter 368 dips below the canyon rim for a long-line mission. NPS photo.

RESCUE METHOD: 300

Means	Total
Helicopter Evacuation	164
Helicopter Rescue	13
Hike	85
Land Vehicle	4
Litter Carryout	17
Stock	8
Swimming/Wading	0
Technical Rescue	7
Watercraft, Motorized	2

2018 SAR-RELATED FATALITIES: 9

Location	Date	Last Name	Activity	Cause
River Mile 118	May 12	Boudier	Sleeping	Cardiac
Surprise Valley	June 9	Stewart	Hiking, Overnight	Heat
Tonto Trail	June 23	Mayor	Hiking, Overnight	Heat
Mather Point	July 3	Priven	Scrambling	Fall
River Mile 84.5	September 7	Howard	Jumped in, no PFD	Drowning
Below Trailview Overlook	October 1	Bartz	Unknown	Fall
Below Trailview Overlook	October 1	Bonkowski	Unknown	Fall
River Mile 137, Deer Creek	October 24	Hedrick	Resting on boat	Cardiac
Pipe Creek Overlook	December 12	Spagnola	Suicide	Jump

SUBJECT ACTIVITY FATALITIES: 9

Activity	Total
Boating - Non-Motorized	1
Boating - Motorized	2
Climbing - Scrambling	1
Hiking, Overnight	2
Suicide	1
Unknown	2



SAR Program



A DECADE IN REVIEW

Total 2018 SAR Incidents: 265

10-Year Average: 294

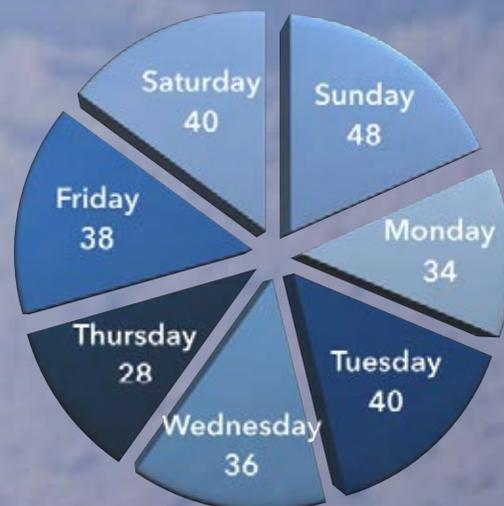


Helicopter short-haul training.
NPS photo.

2018 SAR Incidents by Month:



SAR Incidents by Day of the Week:



SAR Program

Missing Persons: The Grand Canyon Branch of Emergency Services is dedicated to protecting the health, safety, and wellness of our visitors and employees. Our responders play a leading role in locating people who may have become lost or gone missing in the park, and often aid other local, state, and federal agencies outside of our boundaries. Someone may go missing for many reasons - they could become lost or disoriented, suffer an accident, or be delayed by weather or other inclement conditions. In some cases their disappearance is voluntary or the result of a crime. A missing child may involve additional, complex considerations. Unfortunately, seven individuals are still missing after significant search efforts. The missing persons investigations remain open and efforts to locate them will continue.

Jonghyon Won's white Toyota Camry was found abandoned at Moran Point on the South Rim on September 17, 2017. Won, of Lost Angeles, CA, had no known plans in the area and his current whereabouts are unknown. Won's vehicle had previously been seen near the New Hance Trailhead.

Travis Butler was last seen on August 1, 2017 in Tusayan. Rangers located his unoccupied vehicle below Thor's Overlook on October 3, 2017.

Lou Ann Merrell and her grandson were swept off their feet by strong current while crossing Tapeats Creek on April 15, 2017. Most of her possessions have been located but her remains have yet to be found.

Floyd Roberts became separated from his companions on June 17, 2016, while starting a multi-day backpacking trip. He was last seen on the Shivwitz Plateau in a remote western area of the park.

Morgan Heimer was last seen on the shore of the Colorado River (River Mile 213) on June 2, 2015.

Drake Kramer was last known to be at the Bright Angel Lodge on January 31, 2015. Mr. Kramer is believed to have travelled to Grand Canyon National Park to commit suicide.

Adam Jones was last seen in Gulf Breeze, FL on March 31, 2011. Rangers found his car parked near Grand Canyon Information Center on May 5, 2011.





If you have information that could aid the investigations for these missing persons,
please call or text the Tip Line: 888-653-0009
go online www.nps.gov/ISB > Submit a Tip, or email nps_isb@nps.gov

MISSING



Jonghyon Won

MISSING



Travis Butler

MISSING



Lou Ann Merrell

MISSING



Floyd Roberts

MISSING



Morgan Heimer

MISSING



Drake Kramer

MISSING



Adam Jones

Winter in the Grand Canyon. NPS photo.

Structural Fire Program Updates & Accomplishments

Raising the Bar: Grand Canyon Fire Department (GCFD) broke the previous record for in-park training hours offered in 2018, surpassing 2011's high mark of 247 hours to reach 263 hours. For the second year in a row, all fire department members beat the deadline to meet their annual training requirements. This year, we were also allowed to move some training props into the Old Powerhouse building; this allows us to conduct extensive and realistic training in firefighter self-survival and rapid intervention crews.

Moving Up: Service-wide, the number of qualified Fire Captains declined, possibly due to insufficient interest to generate a Fire Officer and Fire Instructor (FOIN) course. To help fill this need, the Grand Canyon Structural Fire Program ran an in-park FOIN class between January and April 2018 with three students. Thomas Johnson, Eddie Mendoza, and Dan Hovanec achieved NPS and Pro-board certifications and were promoted from driver/operators to the rank of Captain on May 7. During the same ceremony, Lucas Reynolds was promoted from Captain to Battalion Chief in recognition of his outstanding leadership abilities, willingness to assist with annual inspection testing as well as maintenance of department equipment, and guidance of fire department training.

Moving On: After more than 9 years of service as the Grand Canyon National Park Structural Fire Chief, David Van Inwagen accepted the position of Battalion Chief for the Intermountain Region, stationed at Glen Canyon National Recreation Area. Dave left a lasting mark on GCFD and we wish him well in his new role.



Structural fire cache.
NPS photo.



Outside Help: Thanks in large part to the hard work and dedication of volunteer Battalion Chief Bob Derr and his spouse Lori Derr, the North Rim district successfully met training and ITM needs. They contributed 1,762.5 hours overall, with Bob leading 18 hours of in-park training. He also helped put on a 3-day, 18-hour live fire training event on the North Rim - while responding to calls for service.

Deputy Chief George Hein traveled to Yosemite National Park for five weeks beginning on May 10th to assist with oversight and review on multiple construction projects being conducted in the park. Hein also assisted and provided guidance with stepping up Yosemite's Structure Fire Prevention branch.

For three weeks in September, GCFD welcomed Yosemite Fire Inspector Blake Scott on assignment. Scott assisted with the completion of the inspection, testing, and maintenance of all NPS operated alarms, fire extinguishers, and sprinkler systems.

New Equipment: Continuing with testing and implementation of new tactics for firefighting, GCFD engines now carry Smoke-Stopper Curtains. These assist with limiting the amount of air available to a fire. All program first due apparatus also carry penetrating mist nozzles to reduce the amount of water needed to extinguish a fire, and to help limit structural fire spread as more personnel respond to a scene. In limiting fire and smoke damage, chances of survival for victims increases.

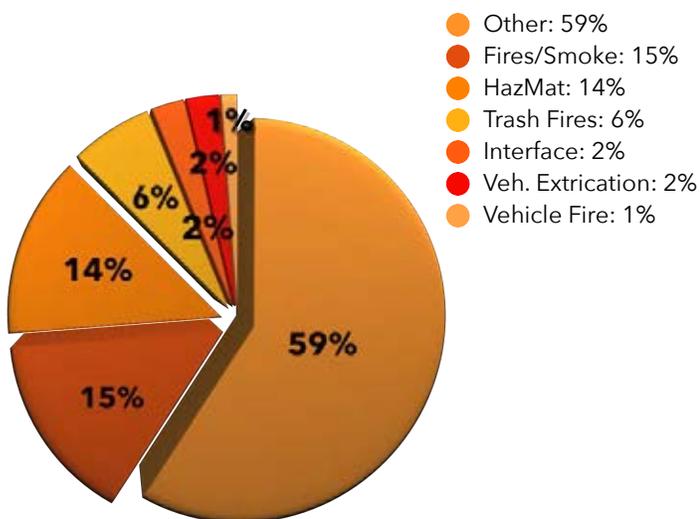


Live fire training. NPS photo.

Structural Fire Program

Structure Fire Responses: 81

Type	Total
Other: Motor Vehicle Accidents without Extrication, Alarm Responses, False Alarms/Reports	48
Structural Fires and/or Smoke Reports	12
Hazardous Materials, Propane Leaks, Fuel Spills	11
Trash Fires, including Dumpster Fires	5
Wildland/Urban Interface Operations	2
Motor Vehicle Accidents with Extrication	2
Motor Vehicle Fires	1



NPS photo.



A DECADE IN REVIEW

Total 2018 Structural Fire Incidents: 81

10-Year Average: 72



Live fire training. NPS photo.

STRUCTURAL FIRE PROGRAM 10-YEAR REVIEW

Year	Structural Fire or Smoke	Vehicle Accident or Fire	Trash Fire	Hazardous Material	Urban Interface Fire	Alarms & Other
2018	12	26	5	11	2	25
2017	16	9	1	21	3	18
2016	7	17	3	15	1	10
2015	7	21	3	18	3	10
2014	12	3	7	30	2	21
2013	11	3	7	29	5	47
2012	12	4	6	31	2	26
2011	17	15	12	27	2	1
2010	11	2	12	31	0	2
2009	7	5	9	17	9	18

Structural Fire Program

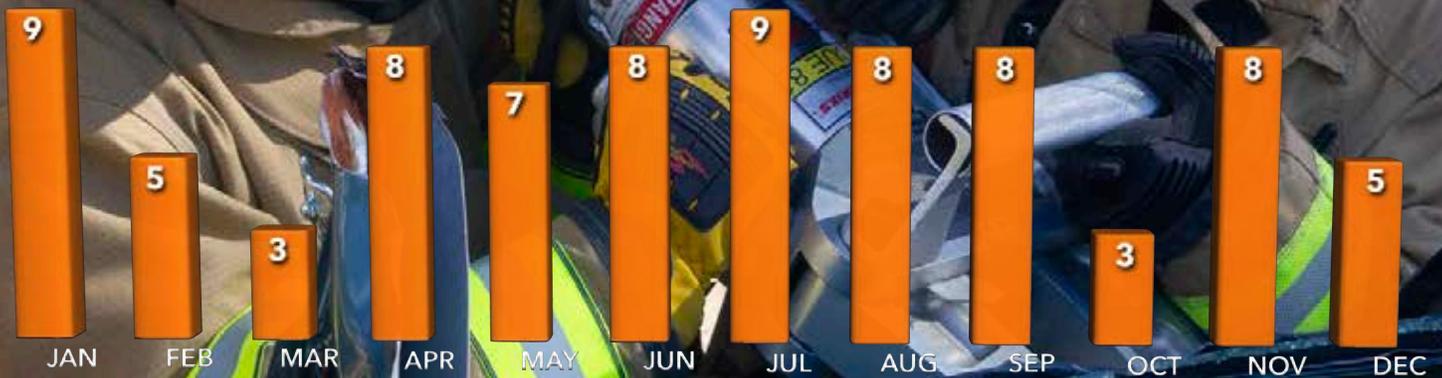
2018 FIRE ALARM RESPONSES: 150

Property Manager	Cooking Smoke	Steam or Other Particulate	Tampered-Water Flow	Unfounded/Accidental	Total
NPS	6	1	0	15	22
Xanterra LLC	31	27	2	36	96
Delaware North Co. LLC	5	7	5	15	32



Extrication training. NPS photo.

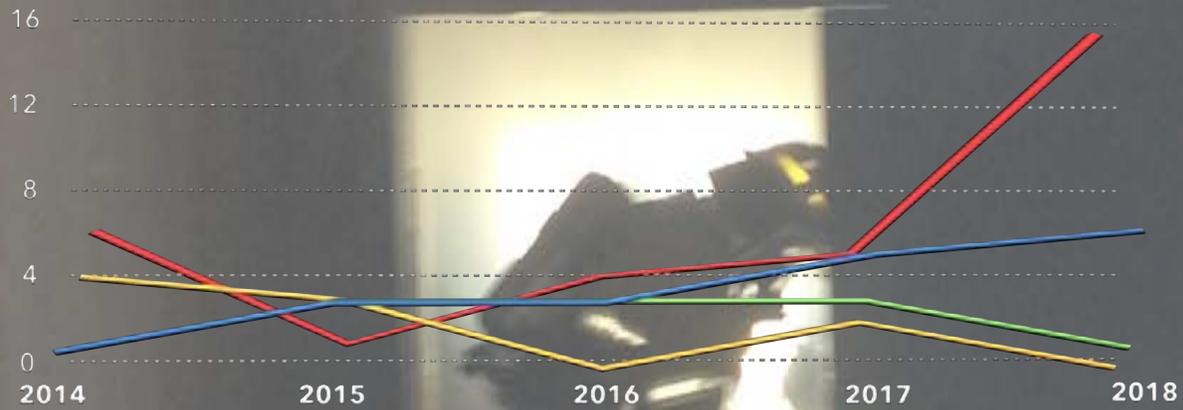
2018 Structural Fire Calls by Month



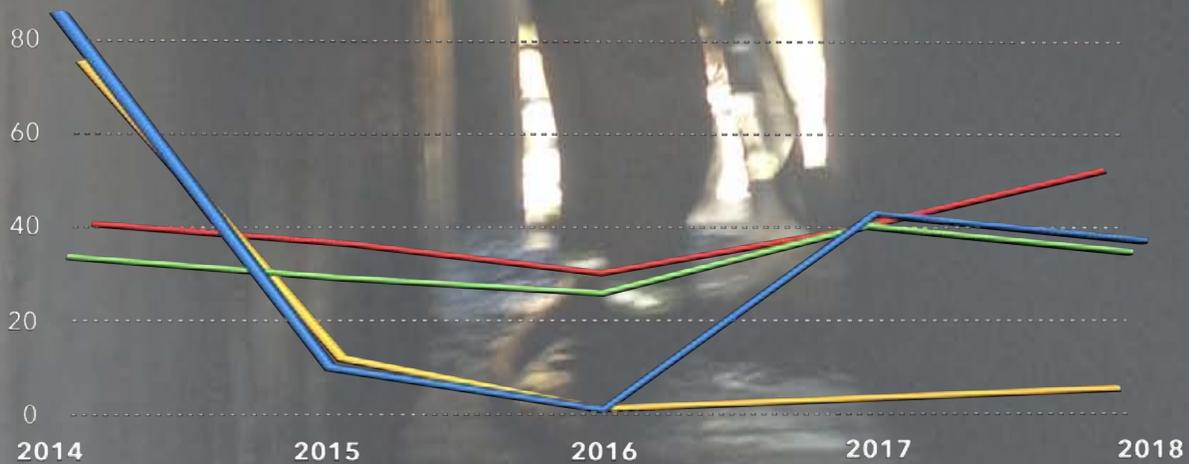


Looking Back: The Past 5 Years

Alarm Responses: NPS Property



Alarm Responses: Concessioner Property



■ Cooking Smoke
 ■ Steam/Other
 ■ Tampered - Water Flow
 ■ Unfounded

The decrease in alarm calls for concessioner properties is attributed to replacement of aged detectors at the Yavapai East Motel Complex. Both Xanterra LLC and Delaware North Co. LLC made plans for upgrades to aging systems and detectors in 2017. These improvements resulted in another reduction in alarm activity.

NPS photo.

Structural Fire Program



NPS photo.

ANNUAL TRAINING HOURS

Year	In-Park Training Hours Offered	Average Training Hours In-Park, Per Person	Training Hours Attended (In & Out of Park)
2018	263	40	2,712
2017	201	27	2,050
2016	200	42	2,322
2015	96 *	19	607
2014	160	24	2,097
2013	242	32	1,539 **
2012	217	27.8	2,751
2011	247 ***	37.4	2,312
2010	181 ***	Not Recorded	2,063

*Failed alternative training model. **Government Shutdown of October 2013 resulted in the cancellation of over 200 hours of training (FFII 13-2, FADO 13-1, FON 13-1). ***2010 and 2011 hours were adjusted to reflect In-Park training only. Previous annual reports showed In- and Out-of-Park training.



Extrication training. NPS photo.



PSAR Program Updates & Accomplishments

Preventive Search and Rescue (PSAR) in Grand Canyon National Park brings safe hiking practices to the forefront. Rangers and volunteers go one-on-one with hikers to decrease their risk of illness and injury.

In 2018, the pendulum swung the other way on staffing levels. While we thrived at near-capacity personnel levels in 2017, we could not fill critical Emergency Services positions this year and operated with only 4 seasonal PSAR rangers. The key position of PSAR Supervisor remains vacant after Ben Cooper's departure in 2018. See page 12 for more information about factors leading to this staffing challenge, which persists into 2019.

Looking ahead, we are excited about several upcoming events in 2019 – the centennial of Grand Canyon National Park! Grand Canyon PSAR will host the first Biennial PSAR Symposium, a gathering of experts from near and far to talk about their local Preventive Search and Rescue programs and their challenges and successes. Grand Canyon Conservancy is sponsoring the symposium, which will be held April 26-29.



PSAR VIP Brian Roach quizzes a Boy Scout trip leader about the arduous hike he and his troop are about to undertake. Photo by Lauren Miller, CDC - Washington DC.



Volunteer in Parks (VIP) Program:

Each year, the National Park Service relies on the service of volunteers to accomplish a variety of important tasks, jobs, and projects. The PSAR program was fortunate to be bolstered by 54 very active volunteers in 2018. They worked tirelessly alongside staff to fill program staffing shortages. The importance of a robust, trained volunteer presence in our national parks is underscored by programs like PSAR.

Attending valuable training and patrolling the park's backcountry, PSAR volunteers helped visitors and prevented adventures from becoming misadventures.

A particular highlight of the year was that no volunteers or staff were injured or became ill while on duty. Together, our PSAR team completed:

- 613 Patrol Shifts (543 VIP + 70 ranger)
- 4,538 Patrol Hours (3,473 VIP + 348 ranger)
- 118,054 General Contacts
- 22,251 Preventive Actions
- 592 Hiker Assists

Special thanks to Todd Nelson, VIP Coordinator for Grand Canyon National Park.



PSAR VIP Derald Cox assist with the litter-carry of an ill and injured hiker on the South Kaibab Trail.
Photo by Geoff Barnard.



PSAR Program

Returning as paramedics in 2018, two PSAR rangers whose paramedic training was funded by Grand Canyon Conservancy in 2017 were integral parts of the team. They answered emergency medical calls from along the rim and within the inner canyon; one paramedic participated in 123 calls, and the other participated in 60 calls. Our thanks and appreciation goes to GCC and its donors and members.

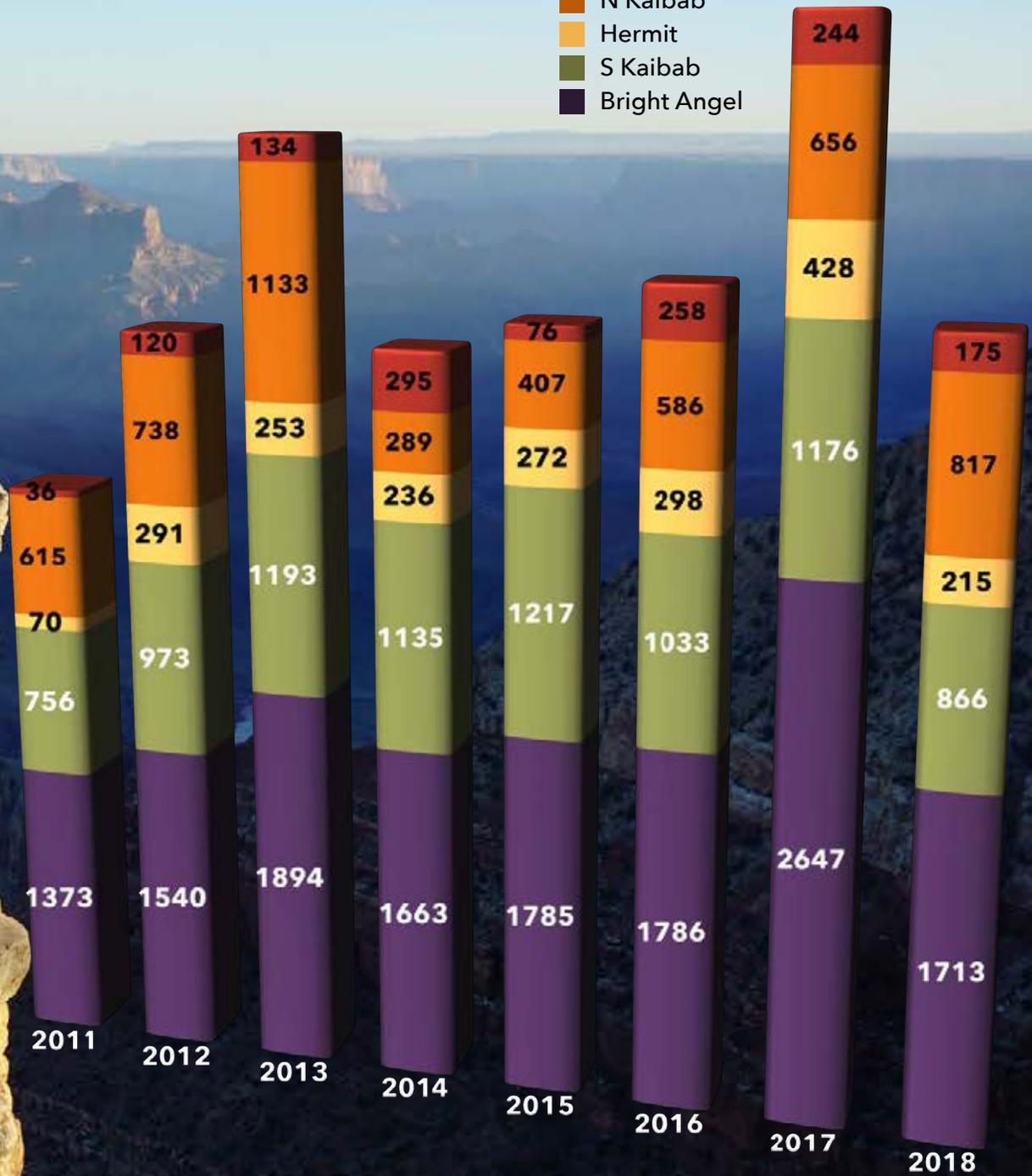


We were honored to receive a visit from The Mission Continues, a national, nonpartisan, nonprofit organization that empowers veterans to continue their service. Veterans from their program teamed up with PSAR staff and volunteers to overhaul our emergency SAR cache boxes throughout the inner canyon.



Annual PSAR Trail Patrol Hours by Trail

- Other
- N Kaibab
- Hermit
- S Kaibab
- Bright Angel



A view from the South Rim. NPS photo.

PSAR Program



TOTAL VISITOR CONTACTS

Year	General Contacts	Preventive Actions	Hiker Assists
2018	118,054	22,251	592
2017	169,656	34,444	649
2016	129,881	28,991	314
2015	117,267	28,478	350
2014	97,649	25,415	381
2013	92,044	29,831	617
2012	72,461	27,717	621
2011	80,083	33,992	685

PSAR Volunteers train with the wheeled litter. NPS photo.



Hike Smart - the Evolution of Hyponatremia Education:

The messaging behind Hike Smart is constantly evolving as the scientific community, specifically those in austere and remote medicine, publishes new findings and guidelines.

PSAR uses the most recent Wilderness Medical Society guidelines to help combat exercise-associated hyponatremia (EAH). This life-threatening condition of low serum sodium can lead to neurologic symptoms, seizures, coma, and eventually death.

www.nps.gov/grca/planyourvisit/hike-tips.htm

Not Thirsty? Don't Drink.

The outdated recommendation of drinking 1/2 to 1 liter of water for every hour hiking is scientifically unsupported.

Drink water only when thirsty. Don't force fluids or dictate how much water one should drink.

Eat salty snacks throughout your hike.



PSAR VIP Steve Pavlak helps visitors navigate and plan their day hike. Photo compliments of Robin Pavlak.

Incident Management Team Updates & Accomplishments

Grand Canyon Incident Management Team (IMT) managed five all-hazard incidents at the Type-3 level in 2018:

Gearing up to reduce the number of bison on the North Rim took a significant amount of time for IMT members. While no bison reduction operations took place in 2018, the team coordinated the construction of a first-rate corral facility. Additionally, the vast majority of logistics and planning has been completed for 2019.

The team successfully managed operations during two water pipeline breaks and two partial government shutdowns in 2018. The Incident Command System (ICS) provided structure throughout these infrastructure failures and lapses in appropriations. Hopefully, the 35-day shutdown record will never be broken.

Notably, only one multi-day search incident occurred this year (Howard). Operations did not necessitate IMT activation.



2018 Type-3 Incidents Managed: 5

Incident	Total
Infrastructure (Water Pipeline Breaks)	2
Lapses in Appropriations	2
Wildlife Management	1

Emergency operations center. NPS photo.

RESPONDER 911

NPS emergency services, fire, and law enforcement personnel may experience traumatic incidents as they answer the call for help. Traumatic incidents can happen to any one of us at any time, but the nature of responders' work puts them at increased risk to experience such events.

The goal of the NPS Responder 911 program is to provide help and support for every employee involved in an on-the-job traumatic incident, and to be there to support their families. The NPS provides direct incident support, post-event education, and professional counseling.

If you are involved in a work-related traumatic incident, you have rights. Taking prompt and effective action often reduces the adverse impacts these incidents have on you and your family.

Seeking help when experiencing stress, depression, anxiety, or suicidal thoughts is a sign of courage, not one of weakness. Seeking help for a colleague is an act of compassion and strength, not an act of disloyalty.



NPS Responders may call anytime:
888-918-3332



www.nps.gov/grca/learn/management/emergency-services.htm



www.facebook.com/EmergencyServicesGrandCanyonNPS



Short-haul training on the Colorado River. NPS photo.