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# Albert L. Arnold

February 4, 1928 - September 6, 2017

Albert L. Arnold, 89, passed away peacefully on September 6, 2017. He was able to have many meaningful visits with family and friends before his passing.

Al was born in Washington, DC, grew up in Vallejo, CA and lived in Walnut Creek, CA for more than 50 years.

Al proudly served in the United States Air Force for three years which included a two-year assignment in Okinawa. Al attended U.C. Berkeley and absolutely loved "Cal." He earned a Bachelor of Science degree and worked as an electromechanical technician in oceanographic work for many years.

Al had several careers before settling in as an Athletic Director for over 30 years, including managing the Quail Court Athletic Club in Walnut Creek and Big C Athletic Club in Concord. Al was an exercise and fitness guru and worked with numerous local professional athletes including members of the A's, Giants, Warriors and Raiders.

Al is famous in the running community. In 1977, at age 49, Al was the first person to run solo from Badwater Basin in Death Valley to the top of Mt. Whitney, a distance of 146 miles. This tremendous accomplishment led to the annual event known as the Badwater 135 Ultramarathon which has been described as the world's toughest footrace. In 2002 Al attended as a guest of the race director, his friend Chris Kostman, and was the first inductee into the Badwater Hall of Fame. His HoF plaque read:

*BADWATER ULTRA MARATHON – 25th Anniversary*

*A Short History of the 20th Century:*

*1927: Charles Lindbergh flies solo across the Atlantic*

*1947: Thor Heyerdahl sails a raft across the Pacific*

*1953: Tenzing Norgay and Edmund Hillary summit  
Mt. Everest*

*1969: Neil Armstrong walks the Moon*

*1977: Al Arnold runs from Death Valley to Mt. Whitney*

*The 2002 Badwater Ultramarathon is proudly dedicated to AL ARNOLD on the 25th anniversary of his record setting trek from Badwater Basin to Mt. Whitney. In recognition of his pioneering efforts, Al Arnold is also hereby and forever recognized as the first inductee into the Badwater Hall of Fame.*

Al's true passion was jogging, for hours and sometimes days on end. He was fondly nicknamed the 'Joggernaut' by Jacques Cousteau. Al especially loved Mt. Diablo, essentially his backyard, covering every inch of the mountain solo and with friends.

Across his life, Al always had an affinity for animals and nature. He took great pride in the 100+ trees he planted in the front and back yards of his home.

Al is survived by his brother, two daughters, three grandchildren, two great-grandchildren, nieces and nephews. He will be greatly missed by his family, friends, and fellow runners and athletes.

Graveside services with Military Honors were held on Wednesday, September 20, 2017 at the Sacramento Valley National Cemetery in Dixon.

Donations may be made in Al's name to any of the following charities:

Mount Diablo Interpretive Association – [www.mdia.org](http://www.mdia.org)

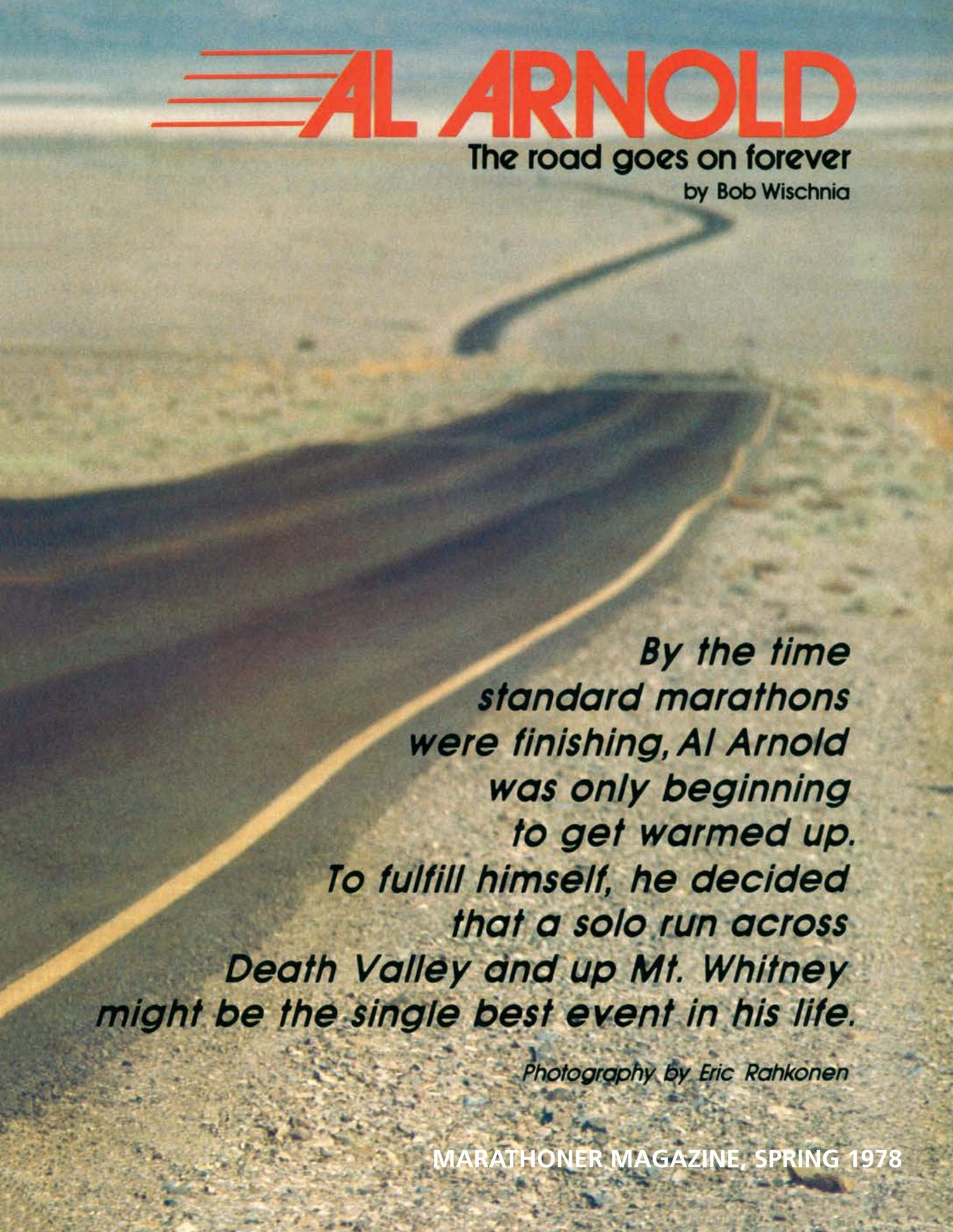
Death Valley Natural History Association –  
[www.dvnha.org](http://www.dvnha.org)

Contra Costa Humane Society – [www.cchumane.org](http://www.cchumane.org)

To read Al's many anecdotes and insights which he wrote on behalf of the Badwater 135 competitors and crews each year, visit:

<http://www.badwater.com/blog/category/al-arnolds-insights/>



The background of the page is a photograph of a desert landscape. A paved road winds through the scene, and a long, dark shadow is cast across it from the left. The sky is a clear, pale blue.

# **AL ARNOLD**

**The road goes on forever**

by Bob Wischnia

*By the time standard marathons were finishing, Al Arnold was only beginning to get warmed up. To fulfill himself, he decided that a solo run across Death Valley and up Mt. Whitney might be the single best event in his life.*

*Photography by Eric Rahkonen*





**H**e wasn't the first or even the fastest to run across the blistering expanse of Death Valley to the summit of Mount Whitney, but what made Al Arnold's August jaunt so special was the fact that he ran it by himself. The 50-year-old running machine from Pleasant Hill in northern California jogged, walked, staggered and ran the 145 miles from the lowest point in the United States to the highest point in the lower 48 states. And he did it, totally, totally alone.

Oh sure, he had a support car and driver (who kept dozing off) but while other Death Valley runs had been tandem or relays, Arnold went solo. Nobody paced him or shared in the agony. Nobody plodded alongside to help keep the sanity. No one to share the loneliness. But, that's the way Al wanted it.

While the actual run took 84 hours of continuous movement, the planning and training was spread over four years and two failed attempts. To say that Al Arnold was obsessed with running across Death Valley would be like saying Jimmy Carter likes peanuts.

That obsession began in the prehistoric years before television. "When I was a kid," Arnold said, "my favorite radio show was *Death Valley Days* and one of the advantages to radio was it forced your mind into fantasizing what it must be like. I used to love listening to the stories about Death Valley—the cowboys, the heat, the beauty, the challenge to man's very existence. This had

always been so exciting to me even if it was just in my mind. Then when I heard and read about Ken Crutchlow and Paxton Beale's run in 1973, I figured, 'Hey, that's one that I've got to do too.' Something subliminally made me want to try this but, other than my childhood fantasizing, I can't really put my finger on a reason why I *had* to do it."

**E**ven though Arnold, a native Californian, had dreamed for years about Death Valley, he had never been to the huge (3000 square miles) desert. So when he began gathering information and advice for a crossing in 1974, the one thing that everybody told him that he had to train for was, of course, the blast furnace-like heat.

Arnold is the director of the Quail Court Athletic Club in Walnut Creek and for his 1974 attempt, he'd pedal a stationary bicycle in the 200-degree heat of the sauna for an hour, get out and shower, pedal for another hour, shower and do it again as he tried to train his 6'5", 200-pound body for the acute changes in temperatures he expected to encounter.

But while he worked hard on acclimating himself to the heat, the longest run he went on was only four hours in length. It wasn't enough. In August, 1974 he took off in the warmth of early morning and six hours and 22 miles later he was floundering in the 130-degree air temperature. He was sick and dehydrated and in no shape to continue.

"I really learned a lot from my first try," Arnold said one afternoon in his

home. "I had gone just far enough to get an idea of what it was really like. I was so cocky, so confident and had this real ego-oriented, hot shot attitude that when I went belly-up, I was very embarrassed. But like I said, I learned."

He spent the entire year training for another run at Death Valley but this time he spent more time on longer distance running and was in better condition when he and Eric Rahkonen, a photographer from the *Contra Costa Times* who also drove the support car, ventured to Death Valley in August, 1975.

They were blessed with nearly perfect weather conditions for Arnold's second assault: There were showers, it was overcast and the air temperature was a mere 105 degrees, which is almost chilly by summer standards.

**"**I was just hot dogging it along on this salt crust by the edge of the highway," Arnold remembered, sipping on a glass of white wine, "and I really began to feel like I was a part of the desert and I was enjoying the hell out of it when I broke through the salt crust and hyperextended my right knee. It swelled up like a grapefruit and pretty soon I couldn't even go down a small grade."

Once again the embarrassment overshadowed the personal disappointment. "The support crew had gone with me again," he said, "and I had failed them again. To see the looks on the faces of these guys hurt me more than anything else. I told them that was it for me. I wasn't going to try again. But I found



myself so concerned with the feelings of other people that I could accept my failure easier than they could.”

Even though Al told his crew that he wouldn't try it again, nobody believed him. The sauna at his health club was out of order so Arnold spent much of his time running on and around Mount Diablo, a 4500-foot mountain that is part of a state park a few miles south of Walnut Creek.

**S**ometimes I'd take off on the mountain before the sun rose and not get back to my car until the moon was rising. All day long I'd be by myself just jogging, walking, running and stretching. Pretty soon, I'd experience entire days in which my mind was a total blank. I mean, I'd be gone all day on the mountain and not be able to remember a thing. This was really important because I was training my mind as well as my body for the loneliness. My body was becoming strong enough to keep going when my mind couldn't. I was experiencing total escape from my mind with my body continuing to move. I don't know where it went but it left me. It'd be almost frightening to come back to my car and realize that I've been gone 15 hours and not to be able to think of one thing that's happened. But, I knew I was running 60-70 miles.”

He tried a 60-mile test run in early summer of 1976 and when his legs didn't feel right, he aborted any attempt to try a Death Valley run for at least a year. He also found time to take a bride,

Betty, who knew what he was doing but wasn't sure why he was doing it.

**“**I tried explaining it to her,” Al said, while Betty fixed some sandwiches for lunch, “but it was a hard thing for even me to understand. She knew what I was trying for but just talking about it upset her so I never said much about it. Actually, after my first two failures, I didn't want to talk about it with anybody. Sure I was an obsessed man but it was more of a romance than anything else. I'd be on top of Mount Diablo running around and I'd actually have to sit down and cry. I was a driven man. I was going to do something that would be an outstanding—some might've said impossible—thing for me to do.”

He spent three more months in the sauna, pedaling the bicycle, but was doing it now for four hours and at temperatures that exceeded boiling (212 degrees). His skin would be so hot that you could burn yourself by touching him.

But the most important element of his training was his speed work. Or, lack of it. He had to detrain himself to go slow enough. Never a speed demon anyway, Arnold had to lower his speed to little more than a crawl so he wouldn't burn himself out in the desert.

By the time August rolled around, Arnold was supremely confident. Of course he was confident the first two attempts, but this time he knew he had the right fluids (pure fructose), a total white outfit that cooled the body, 12,000 miles (in four years) of training

and most importantly, the knowledge that this was his third and final attempt.

**A**rnold drove south to Death Valley with Rahkonen, the photographer who had been along on both previous tries, and they met Glen Phillips, a commercial pilot for TWA, at Furnace Creek Ranch in Death Valley the night before the run. Al didn't eat any solid foods and got his usual 3½-4 hours of sleep. He was as ready as he'd ever be.

The starting point was near Badwater—at 282 feet below sea level, it is the lowest point in the Western Hemisphere. Arnold began jogging at 5:00 a.m. on August 3, and tried going as slow as he could despite the excitement of what he hoped would be a momentous run.

“It wasn't important to me how fast it was going to be,” Al said, “I just wanted to complete the darn thing. That's all. I wanted to enjoy it and I wanted to share it with everybody I came into contact with. I spent many hours talking to people along the road and tried explaining to them what it was I was doing. The sharing of it was the end product of the thousands of hours I had spent training by myself.”

Nobody ever ran with Arnold. He didn't want anyone because they might've disrupted his concentration and pace. “The individual—me—has to do his own thing in every marathon. I've run a number of marathons but I had always burned myself out at 20 miles. So I had to convince myself that all I really am is a guy who likes to run for the sake of the freedom that running



allows you to have. I'm not a fair weather runner. As long as there's ground, I'll be out there."

**B**ut nobody ever said the ground temperature was going to be 190 degrees as the air thermometer climbed into the high 120s. It took Arnold most of the first day to make the 50 miles across Death Valley's searing desert to the Panamint Mountain range where the running became harder, but where at least it was cooler.

"It was a little spooky running on the Panamints at night," Al said. "I've got glaucoma and can't see as well at night as most people can so I'd just run right down the white line. The night became an ally and even though I knew I was in a hostile environment it was like . . . like all tranquility that can exist . . . existed for me. There was no real problem with the heat and the only conflict I had was with my ancient body taking all the hundreds of thousands of impacts. My mind would just take off on trips, flights for hours and hours. When the sun rose that morning, it was the most beautiful sunrise I've ever seen. I had been looking forward to it all night long and hoping that this would be the hottest day of the year."

As it turned out, it was the hottest day of the summer with an air temperature of 127 degrees. But Al kept on running until finally he caught up with his support car—Rahkonen was still with him, but Phillips had left for a short trip to Yosemite—and stopped to do some stretching. He passed out with his

legs over his head and Rahkonen let him sleep for about 20 minutes. It was one of only three rest stops Arnold made and none of them were longer than a half-hour.

**A**ll the time I'm looking for Mount Whitney," Arnold said, "and I see this gray, ominous thing way in the distance and hours later I find I'm on the same mountain I'm looking at. There were a lot of forest fires then and all the smoke was bothering my eyesight. That afternoon the wind really picked up and forced sand into my shoes and eyes but eventually I caught a glimpse of Mount Whitney and for the first time I was able to see my object and felt—I know this is ridiculous—but I actually felt a communication between this three-mile high piece of granite and myself. I just felt very, very small and vulnerable. It was almost like it was encircling me rather than me coming around to it.

"When I got closer, I heard the coyotes howling their fool heads off like they were laughing at me. I got to Lone Pine (the nearest town to the mountain) around sundown and changed into some street clothes. I just didn't want anyone to notice me; in the desert it was okay but in town I was a little inhibited. Glen and his wife and daughter Hope had flown in from Yosemite (where they had been hang gliding) and they gave me a hamburger and milkshake which really revitalized me. I knew I couldn't go up the mountain at night and knew if I stopped

moving, it'd be all over so I just barely kept going all through the night. I probably only made 15 miles all night."

By sunrise, Glen and Al were starting up the trail to the summit of the 14,496-foot mountain. (Rahkonen had been called back to his newspaper.) About halfway up, Arnold buried a backpack with warm clothes, a sleeping bag, \$200 in cash and some food, while Glen climbed up ahead telling other hikers of what this crazy, middle-aged man was trying to accomplish.

**"W**e were up about 12,000 feet," Al recalled, "and there were over a hundred switchbacks. For about an hour, I felt really strange and almost walked off the mountain a number of times. I just felt too comfortable about being on the last leg of this thing. I started to drift off and luckily, Glen came back to me and caught me before I went off . . . it was almost like when you're a little kid and had to stay home because you were sick and your mother gave you neat things and so you'd fake it a couple of times . . . I think that was what I was doing subconsciously because I just must've wanted someone to stay with me."

Al and Glen had hiked to the top of Mount Whitney together once before but after crossing 140 miles of desert, this was a considerably tougher climb. Al gave an autograph to one hiker who gave him a survival kit in return.

And then, Al Arnold was there. Not surprisingly, all he could do was cry. "I just sat down on a rock—it was very low

key—and bawled my fool head off for a couple of minutes. Glen didn't give me much time to drink it in though because we had to get off the mountain.”

**P**hillips bounced on down the mountain back to Lone Pine where he could telephone the *Contra Costa Times* and Eric Rakhkonen to tell them that Al had made it. The *Times* was holding space in its Sunday edition.

Arnold, meanwhile, started back down the trail to the spot where he had buried his pack a few hours earlier. Someone had stolen it.

“It was like someone stealing your horse on the open range,” Arnold said without trying to hide his bitterness. “They string people up for less things than that. I was lucky, damn lucky that in the survival kit some hiker had given me there was a plastic liner, like a garbage can liner. Thinking back, it was kinda scary because here I was two miles up, the air temperature was below freezing, 50-60 mile per hour winds, on the face of a granite mountain with no clothes or food. I did the only thing I could: I just sat there and tried to relax. With my eyesight, I couldn't take a step in any direction because it might've been the last one I ever took. And I couldn't sleep, because I might not wake up. I wrapped myself in the bag and hoped I'd make it through the night.”

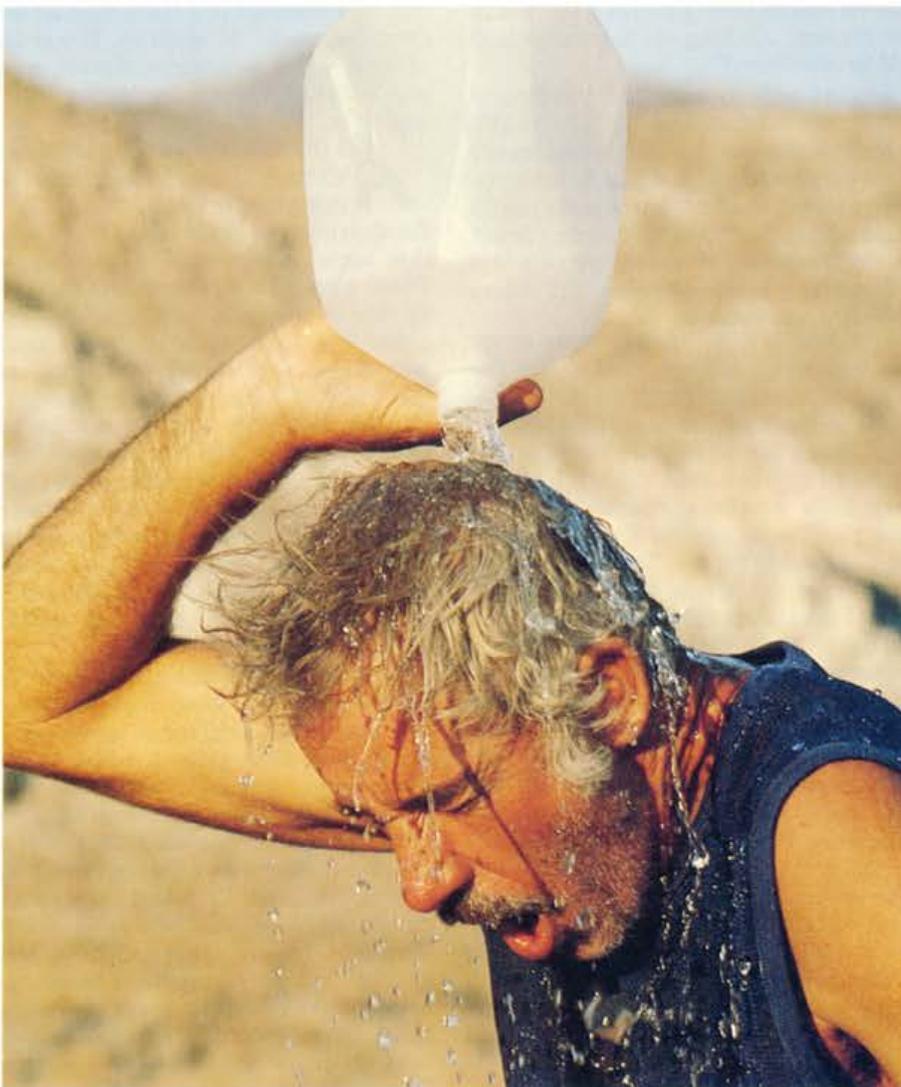
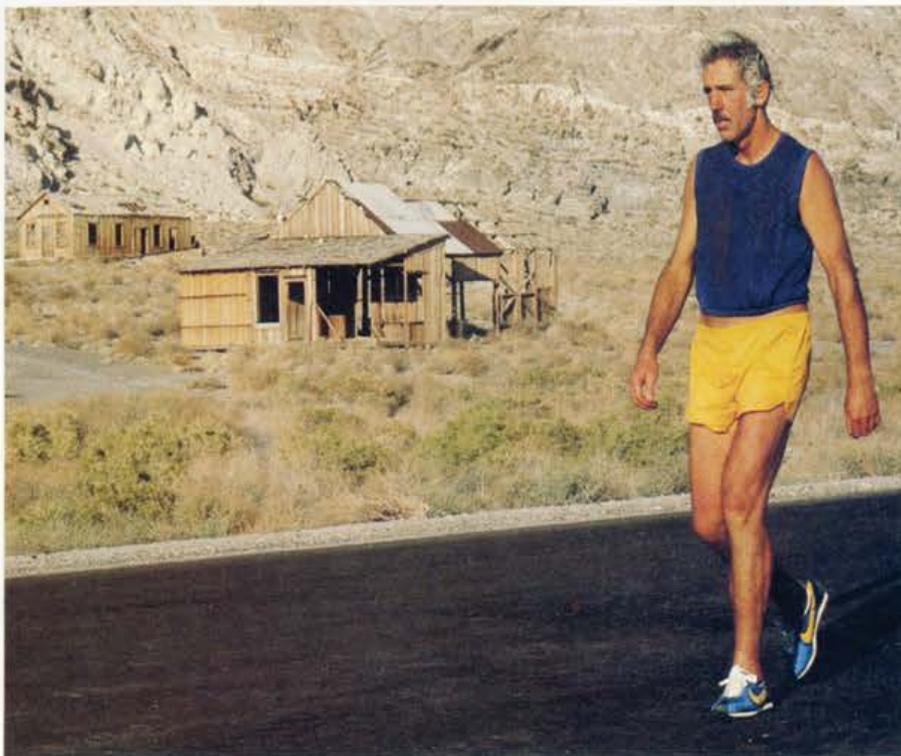
**H**e made it through the night but when he got out of his bag the next morning, his left leg was so sore he couldn't straighten it out enough to support his body weight. Finally, after soaking the leg in an icy stream for three hours he was able to move slowly down the mountain.

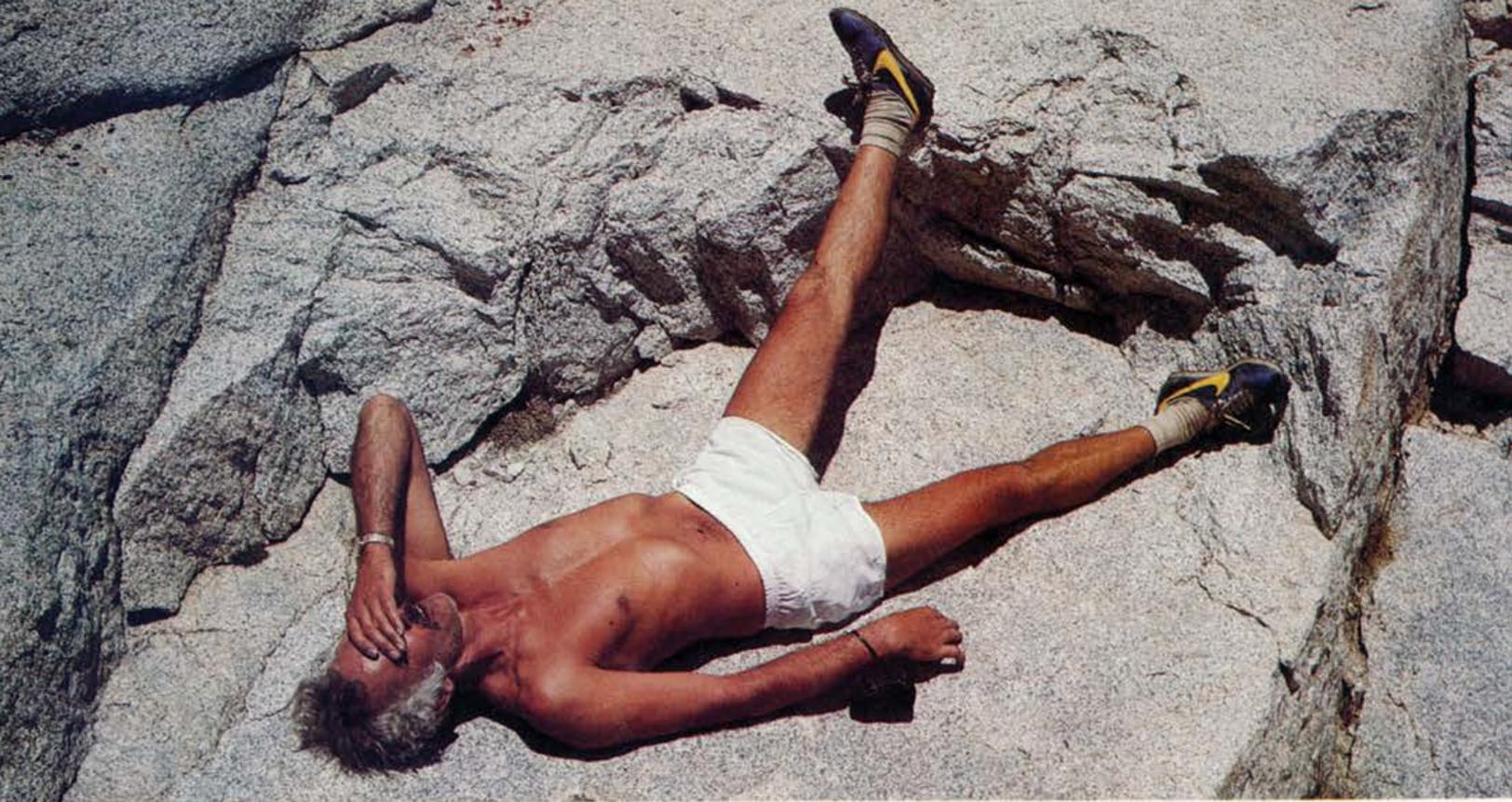
The irony of the entire ordeal was the worst part came after he reached the summit: The night he spent on Mount Whitney, the flight home where the plane barely had enough altitude to clear the mountain and nearly crashed and the long-delayed honeymoon to Hawaii that Betty and Al took a week later that nearly cost him his life.

When Arnold did get home, he did a number of telephone interviews with various newsmen and then slept for about six hours. He was up at his customary 4:00 a.m. and ran six miles to his health club.

“**I** felt great after the run,” he said, “but I almost felt embarrassed to talk about it because it was beyond the comprehension of most of the people I ran into at the club. I had a hard time putting into words what I learned about myself but I do feel I've become more of a tranquil person and I feel I'm a much stronger individual now.”

“I developed a sense of confidence that I'm removed from doing any monu-





## A FIGHT WITH PHYSIOLOGY

Al Arnold's mid-summer run across Death Valley and up Mt. Whitney in 84 hours stands as a unique example of the upper limits of human endurance. From a physiological point of view, his feat posed threats to his health and his chances of completing the run. The stresses of heat, dehydration, altitude and depletion of body energy stores might easily have doomed the run to failure. Combined, they make Al's accomplishment a superhuman feat.

Despite the dryness of the desert air, air temperatures of 128-134 degrees and the radiant heat from the sun and road combined to limit Al's ability to get rid of the heat being produced by his working muscles. Generally speaking, the heat generated in the muscles is transported to the skin where it can be dissipated to the environment, provided the skin is hotter than the air or that the humidity is low enough to permit heat to leave the body in sweat evaporation. This entire process puts considerable stress on the cardiovascular system, which must now divide its delivery of blood flow between the exercising muscles and the need for blood flow to the skin. Thus, when Al tried to continue running in the desert's 124-degree heat, it was no surprise that he experienced severe nausea, a symptom not uncommon in the early stages of heat exhaustion.

Fortunately, Al had been wisely advised to become heat acclimatized before the run. His pedaling a stationary bicycle for hours every day in a sauna offered the body a chance to adjust to the combined effects of heat and exercise. This heat-exercise exposure permits the cardiovascular system to adapt an efficient control on blood flow and body temperature regulation.

Obviously, the elimination of body heat during the run meant that Arnold must lose a sizeable quantity of body fluids as a result of sweat evaporation and water lost in his exhaled air. If we assume that the weight of the fuel burned by his body during the 84-hour run was small, then his body water deficit (about 17 pounds) at the end of the run would mean an eight percent decrease in body weight, with a 20 percent decline in plasma volume. This meant an additional strain on an already tortured cardiovascular system.

Early research of men working in the deserts, revealed that levels of dehydration above 8-10 percent of body weight can be fatal. It is apparent that without the frequent fluid feedings, Al might well have exceeded even his high tolerance to heat and dehydration. We know that when young conditioned athletes are dehydrated by only 3-4 percent, they are unable to exercise for only an hour or two before collapsing. Drinking fluids prevents excessive body heat storage and eases the strain on the circulatory system.

After surviving the heat and dehydration of Death Valley, Al's run took him to another environmental test, that of altitude. It is well known that at elevations above 5000 feet, one's capacity to transport oxygen to the working muscles becomes progressively impaired. Attempts to walk and jog are extremely difficult and progress can only be made at a painful price. When Al reached Whitney Portal at 8400 feet, his maximal oxygen uptake was probably only 90 percent of that on the floor of Death Valley. As he

By David Costill, Ph.D.

progressed up to Consultation Lake (12,000 feet), this capacity to transport oxygen was down to only 80 percent of his sea level value. As he approached the summit of Mt. Whitney at 14,496 feet, his tolerance to aerobic exercise was down to less than 70 percent of his original capacity. Of course, the low oxygen content of the air at altitude amplified Al's already dehydrated and exhausted cardiovascular system.

The only limiting factor we have not discussed deals with the energy needed to complete this 84-hour run. Since Al slept for only 60 minutes during this ordeal, we can make a few assumptions and estimate his total energy requirements.

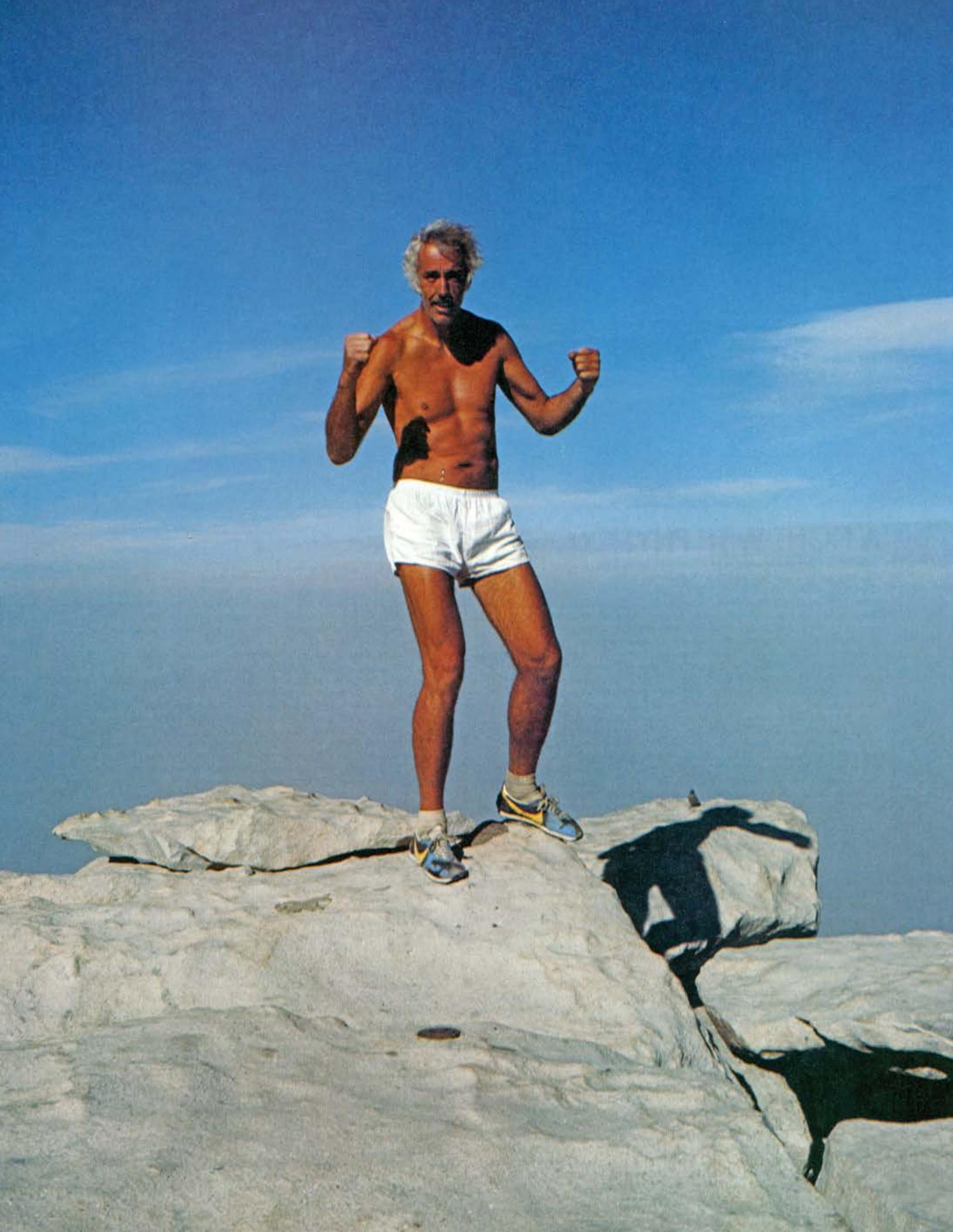
Being a big man and a good runner, Al probably has a maximal oxygen uptake in excess of 5.5 liters per minute. If we assume that he used, on the average 40-50 percent of this capacity (2.75 liters/min.), then the Death Valley/Mt. Whitney run probably cost him more than 60,000 to 66,000 kcal. or nearly 17,000 to 19,000 kcal. per day. This would constitute roughly six times the caloric expenditure for a normally active adult.

One might wonder where Al got all the fuel needed to fulfill these energy requirements. Naturally, he was able to ingest some fuel as food and drinks, but much of his energy had to be derived from carbohydrates and fats that were "on board" at the start of the run. Several factors govern the rate at which these fuels are burned-up by the muscles. Generally speaking, the faster one runs, the more muscle glycogen is used. Conversely, low intensity exercise tends to use fats as the predominant energy source.

In the early minutes of exercise, the runner will use muscle glycogen at a greater rate, with fat playing a major role after 30 minutes or more of activity. Since the depletion of glycogen from muscle is a factor responsible for exhaustion, it was imperative that Al keep his pace relatively slow in the early stages of the run and that fat be used as the principle energy source.

A third major source of energy is provided to the muscles via the blood stream. Blood glucose is maintained relatively stable by the release of glucose from the liver and by the addition of glucose from the intestinal digestion of carbohydrates. Since the human liver has a limited amount of glycogen stored, it was essential that Al eat and drink carbohydrates to prevent a sudden fall in blood glucose (hypoglycemia). In exercise bouts lasting more than a few hours, blood glucose provides most of the carbohydrates being burned by the muscles. It should be noted that this blood-borne source of carbohydrate is essential to the cells of the nervous system. For these reasons, it becomes readily apparent that exercise-induced hypoglycemia (low blood sugar) might easily have terminated Al's run had he not received adequate nourishment.

In this discussion I have attempted to illustrate how many factors might easily have terminated Al Arnold's assault on Death Valley and Mt. Whitney, as it did in his two earlier attempts. As a physiologist, I am impressed with his ability to confront and conquer the human frailties that control our upper limits of endurance.





mental task I set out to do. What I mean is I feel I can do whatever I want to accomplish. Certainly, I'm restricted as to how fast I can run a mile but that isn't essentially what I'm looking for. I think I am, in my own way, a marathon man and a strong marathon man."

**H**e needed every ounce of strength, every minute of his training to survive his honeymoon in Hawaii. Al had never bodysurfed before but it looked like fun at a nice little shorebreak in Kauai called Brennecke's Beach. He caught the last wave of the day for him—always the most dangerous one—and was cutting across the face of the breaker with the tube closing in behind him. Just as he was about to dive under the wave, a small boy on a boogie board appeared in his path. Al knew he'd hit the child and quite probably, injure him.

Al waited until his wife left the room before he discussed the incident because even nine months later, she gets upset at the mention of the accident. Arnold dropped his voice an octave and almost whispered, "I pulled my shoulders to the left to avoid the boy and felt my hips come clear out of the water. The next thing I knew I was caught inside. The wave sucked up the water which should've been beneath me and threw me headfirst into the sand. My head just snapped backwards like a whiplash victim."

He was totally paralyzed but conscious. Lying face down in the sand, he nearly drowned as wave after wave washed over him. He inhaled each time the waves lifted his head above the water and then held on as he was pulled

under again and again.

"Finally after about 10 minutes I was nearly gone from the effort but I was able to hang on a little more because I thought, 'Gosh, I can't do this to Betty.' If I hadn't have acquired the mental discipline I had, I would've drowned. I used my last air when I felt someone near and called for help and held on. This guy came over and asked, 'Are you okay?' Hell no, I told him."

They got him out of the water and Al made sure nobody would move him until a doctor came. When the doctor did come, he assured Arnold that he hadn't severed his spinal cord but his neck might be broken. They put a surfboard under him and 15 minutes later he was in Wilcox Hospital where x-rays showed that he hadn't fractured his neck but there was a separation of two cervical vertebrae and a pinched and severely bruised spinal cord. In a few days he was able to walk again and even today, the lingering symptoms of his injuries are not unlike those of a whiplash victim.

"There's no doubt about it, I would've been dead if I wasn't in the kind of shape I'm in. For certain, my neck would've been broken and if I hadn't died, I'd be a quadriplegic the rest of my life.

**"Y**ou asked me earlier what I think I gained from the run and I didn't really answer because the accident, looking back on it, seemed related in a way to the run. But what I gained is the strength that I can draw from within myself. I'm a very religious man but I've only been religious

in terms of what running can do for me. Running saved my life. I trained four years to run across Death Valley and if I hadn't, I'd be dead or paralyzed.

"But aside from that, I'm less anxious and more patient than I was before the run. The ability I developed to last longer with a set of conditions as brutal as I went through enhances my living. I wasn't necessarily an impatient or frustrated person before the run but now, it's not even part of my vocabulary. I have the ability now to analyze a situation and convert it into a learning experience rather than have it frustrate me."

When Al was 23, he and a fellow student at the University of California at Berkeley, set a world record for teeter-tottering. In 1951, when people were still doing those kinds of stunts, the pair went up and down 45,159 times for three days and nights to break the record. Guinness' Book of World Records, however, didn't recognize it. When Betty submitted documentation of Al's monumental run, Guinness sent a form rejection letter back saying thanks but no thanks.

For a man with Arnold's kind of ambition, strength and determination, what could possibly be next?

**W**ould you believe he wants to return to Death Valley. But this time he wants to race someone across the length of the Death Valley. He doesn't want to race for money; he just wants the competition of racing 165 miles across flat desert in the intense heat of summer. So far, Al Arnold hasn't had any takers. 

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Cover: L-R: Marshall Ulrich, Pete Kostelnick, and Sandra Villines competed as Team Tres Amigos Cruce USA in the 2018 Badwater Salton Sea 81-mile ultramarathon on April 29-30. They are all Badwater 135 champions and Trans-America world record holders! Badwater Family, indeed! Badwater Salton Sea challenges up to 40 teams of two or three ultrarunners – running together as duos or trios for the duration, NOT in a relay – to tackle an unimaginable traverse of Southern California deserts and mountains. The route covers 81 miles (130km) from Salton City (elevation 234 feet / 71m below sea level) to Palomar Mountain, the almost tallest mountain in San Diego County (elevation 5500 feet / 1676m.) Eight of the 81 race miles pass through Anza-Borrego State Park on a single track trail from Borrego Springs to near Ranchita, creating a race route which is a mix of road and trail. There is a total elevation gain of over 9000 feet (2740m). Registration for the April 28-29, 2019 race is already open and the race is filling quickly.

Design and Layout by Kevin Fung, kevin@kfungdesign.com

Welcome to the July 2018 edition of BADWATER® Magazine! We are AdventureCORPS®, an athlete-run firm producing and promoting ultra-endurance sports events and the BADWATER® brand. Adventure is our way of life, so we are pleased to host the 41st anniversary Badwater® 135 Ultramarathon, known globally as “the world’s toughest foot race,” on July 23-25, 2018. This magazine celebrates that race and its setting, as well as the entire Badwater® Ultra Cup series of races, and what we like to call the Badwater Family and the Badwater Way of Life.

This year’s race celebrates the 41st anniversary of Al Arnold’s original trek from Badwater Basin to Mt. Whitney in 1977. Arnold, an ultrarunning pioneer, human potential guru, and health club manager, competed in a solo effort: it was just Arnold and his support crew against the elements and the clock. It took him three efforts before he was successful, having first attempted the route in 1974 and then 1975. It took four more years until Jay Birmingham also completed the course, in 1981. The official head-to-head race began ten years after Arnold’s pioneer trek, in 1987, and has been held annually since then without serious incident, fatality, or any citations issued by any branch of law enforcement.

Sadly, we lost our incredible friend Al Arnold when he passed away last year on September 6, 2017 at the age of 89. When I first took over this race in 1999, Al was one of the very first people that I tracked down and went to go meet. The previous race organizers had never contacted him, so he was pleased that somebody with an appreciation of history had taken over the event and made an effort to reach out to him. We became incredible friends and stayed in touch regularly and I visited him in his home in Walnut Creek whenever possible; he would regale me with stories about his life and always cooked up a veggie burger. He had a zest for life that was incredible.

Al served on the Badwater Application Review Committee for about a decade - helping to select the race field - and also wrote yearly essays to inspire and enlighten the Badwater 135 competitors and crews. (These are permanently archived on the Badwater.com website.)

We brought Al to the race in 2002, the 25th anniversary of his run, and he was treated like a rock star by everyone in attendance. Since then, he has been in regular email contact with runners all over the world, some of them Badwater 135 veterans and some were long-term hopefuls looking for advice from the man who first showed us what was possible. Just last summer, race veteran Cory Reese went to visit Al to interview him for his book about the race, “Into The Furnace.” There is no doubt that Al was well loved and respected within the Badwater Family and the running world at large. He will be sorely missed, but his spirit will live on with each year’s edition of the world’s toughest foot race.

Yours in sport,

*Chris Kostman*

Race Director and Chief Adventure Officer



***L-R: The Kostman Family: Chris, Shelby, Keith, and Wayne. Keith heads up the Badwater 135 webcast each year and has supported Chris' events since 1985. Wayne and Shelby volunteered at many dozens of events that Chris produced from 1984 all the way to 2014, when they supported the Badwater 135 that year. It was from these amazing parents - who took Keith and Chris on not one, but two, one-year-long travels through Europe and North Africa during their childhood in Volvo station wagons - that the Kostman brothers learned their appreciation for travel, adventure, "foreign" cultures, languages, history, and so much more.***

Wayne G. Kostman passed away on June 23, 2018 in Santa Barbara, CA, surrounded by Shelby, Keith, and Chris, and his sister Dorothy. This magazine could be filled fifty times over with a description of his life and his impact on thousands, but for starters, he was a husband of nearly 60 years, grandfather, father, uncle, brother, friend, teacher, counselor, leader, and so much more. He was a Montanan, Lutheran, Rotarian, St. Olaf College graduate (BA, History, 1958), USC graduate (MA, History, 1963), Azusa School District educator from 1959 through 1993, Santa Ynez Valley Union High School substitute teacher from 1997 through 2018 (and Grand Marshall of their Homecoming Parade in 2016), and a Getty Center volunteer from 1983 through 2009.

He was a world-class photographer, public speaker, historian, antiquarian, book lover / collector / dealer, and fluent German speaker. He had an insatiable curiosity and was the smartest person we all knew (basically a walking, talking Wikipedia). However, he made it clear that the smartest thing he ever did was marry Shelby Jeanne Stafsholt on August 14, 1959.

He was a friend and supporter of Hubert Humphrey, the Minnesota Senator and Vice-President under President Lyndon B. Johnson, and appeared on a Newsreel with Senator Humphrey that shows the two of them laying a wreath at the Berlin, Germany Airlift (Luftbruecke Denkmal) Memorial at Tempelhof Airport in November of 1958. Shelby - his future wife - saw that Newsreel in a movie theater shortly thereafter over Thanksgiving holidays during her senior year at St. Olaf College. Carrying a Press Pass for a California radio

station, he met and interviewed Louis Armstrong in Berlin in 1958. He also met Eleanor Roosevelt, Henry Fonda, and Lauren Bacall while volunteering for the Democratic Convention in Los Angeles in 1960. He once received a letter from "her lady in waiting" to Queen Elizabeth II of the United Kingdom. He was a huge fan of Roy Rogers, Gene Autry, and other singing cowboys, including Dwight Yoakam. He just might have been a secret CIA operative.

He made such an impact as an educator that he was still routinely being contacted by students of his from the 1960s, 1970s, 1980s, and 1990s, many of them emphatically stating that he had saved their life. An aficionado of Jolly Ranchers, he personally gave away at least 100,000 of these candies, becoming known as "Mr. K, the Jolly Rancher Man" throughout his beloved Santa Ynez Valley; because of his substitute teaching, basically anyone aged 14 to 35 in the area knew him and would walk up to give him a hug or shake his hand and to receive a Jolly Rancher.

He was a world-class driver who loved traveling (visiting at least 58 countries and six of the seven continents), sailing, bicycling, road tripping, and seeing what was down this road or that road; he and Shelby are the reason that Chris has dedicated his life to "chasing the horizon" and also to "seeking and sharing adventure." He was born June 5, 1936 in Havre, Montana and after 82 years of an absolutely incredible and inspiring life - loved by all who knew him - this World's Best Dad and Ultimate Adventurer has moved on to a better place.

## THANK YOU, SPONSORS AND SUPPORTERS

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AdventureCORPS is pleased to welcome the support of Pure Vitamin Club, Farm to Feet, Zombie Runner, ZZYXXXZ, and Caring House Project Foundation, as well as the Oasis at Death Valley, Stovepipe Wells Resort, Panamint Springs Resort, and Dow Villa of Lone Pine, the community of Lone Pine, CA, the County of Inyo, and other generous companies and individuals.



# adventureCORPS®

**SCHEDULE OF EVENTS**

**Sunday, July 22**

**100-400pm: Runner Check-In and Registration / Retail of BADWATER Gear:** Held in The Gold Rush Room (formerly known as the Marquez Room) at the Furnace Creek Inn. Please do not all show up at 100pm! It takes quite a while to go through the Check-In process! We suggest that 1st wave runners arrive at 100pm, 2nd wave runners arrive at 200pm, and 3rd wave runners arrive at 300pm. (Each Racer and their designated Crew Chief must attend; all crew are welcome and encouraged to attend). NOTE: All retail is first come, first served. If there is something you NEED or MUST BUY, be there at 100pm to purchase.

**500-630pm: Pre-Race Meeting for ALL Racers + ALL Crew Chiefs.** ALL racers and ALL crew chiefs must attend the Pre-Race Meeting (but no other crew members). Held in the Auditorium at the National Park Service Visitors Center in Furnace Creek.

**630pm(app.): Group Photo of All Racers at the Thermometer in front of the Visitors Center.**

**Monday, July 23**

**1230-130pm: Optional Races Rules Review / Questions & Answers / Discussion of Best Crewing Practices / Retail of Badwater Gear:** Since only racers + crew chiefs may attend the Pre-Race Meeting on Monday, we are offering a follow-up meeting to review race rules and best crewing practices, as well as a Q&A session, along with retail of Badwater gear. If you want or need to know more before you start the race this evening, please attend! Held in The Gold Rush Room (formerly known as the Marquez Room) at the Furnace Creek Inn..

**130-200pm: Media Check-In and Briefing:** All journalists / media / photographers must attend. Held at The Gold Rush Room (formerly known as the Marquez Room) at the Furnace Creek Inn.

**200-300pm: Private Staff Meeting:** Held at The Gold Rush Room (formerly known as the Marquez Room) at the Furnace Creek Inn.

**800pm: 1st Wave Starts at Badwater Basin:** ALL Wave 1 runners must check in, weigh in, and receive their GPS tracker no later than 730pm.

**930pm: 2nd Wave Starts at Badwater Basin:** ALL Wave 2 runners must check in, weigh in, and receive their GPS tracker no later than 900pm.

**1100pm: 3rd Wave Starts at Badwater Basin:** ALL Wave 3 runners must check in, weigh in, and receive their GPS tracker no later than 1030pm.

**Tuesday, July 24**

**300am: Furnace Creek General Store Closes.** By special arrangement, the Pro Shop at Furnace Creek will remain open on the first night of the race until 300am. They have very limited amounts of food, snacks, and drinks, but plenty of ice.

**400am: Stovepipe Wells General Store and Gas Station Opens.** By special arrangement, the General Store and Gas Station in Stovepipe Wells (at mile 42 of the race route) will open at 400am during the first night of the race. They have food, snacks, drinks, ice, and much more. Please support them, and stock up heavily!

**1000am: First Time Cut-Off.** Deadline for ALL RUNNERS, regardless of starting wave, to pass Mile 50.5 (2000' Elevation Sign, located 8.6 miles beyond Stovepipe Wells.)

**800pm: Second Time Cut-Off.** Deadline for ALL RUNNERS, regardless of starting wave, to pass Mile 72 (Panamint Springs Resort.)

**Wednesday, July 25**

**500am: Third Time Cut-Off.** Deadline for ALL RUNNERS, regardless of starting wave, to pass Mile 90 (Darwin Time Station.)

**700-900pm: Post-Race Get-together:** Lo-Inyo Elementary School at, 223 East Locust Street (1.5 blocks east of Hwy 395 in the north-east end of town). Pizza and drinks will be served. No charge (up to four crew per runner may attend). **After The Post-Race Get-Together:** Many of the runners and crew members go to Jake's Saloon at 119 N Main St (near Lone Star Bistro) to swap stories and hydrate. Jake's is open until 200am.

NOTE: Although the 48-hour overall time limit remains in place in 2018, ALL runners are encouraged to complete the race by 600pm on Wednesday in order to attend the post-race get-together in Lone Pine. That "soft" deadline equals a 46-hour completion for the 800pm wave runners, 44.5 hours for 930pm wave starters, and a 43-hour completion for 1000pm wave starters.

**800pm: Course Closes for 1st Wave Runners** (48-hour time limit, based on start; all runners recommended to finish by 600pm.)

**930pm: Course Closes for 2nd Wave Runners** (48-hour time limit based on start; all runners recommended to finish by 600pm.)

**1100pm: Course Closes for 3rd Wave Runners** (48-hour time limit based on start; all runners recommended to finish by 600pm.)

**SUNRISE / SUNSET (July 24):** Civil Twilight (AM): 5:17am | Sunrise: 5:46am | Moonrise: 9:54am | Sunset: 8:00pm | Civil Twilight (PM): 8:29pm | Moonset: 9:04am.

**PERMITS:** This event is held under special use permits from the California Department of Transportation, Inyo National Forest, Death Valley National Park, and Inyo County, and is additionally overseen by the California Highway Patrol. (If one of these agencies won't issue us a permit, this race could be cancelled. Please keep that in mind!)

**DRIVING DISTANCES:**

Las Vegas Airport to Furnace Creek: 120 miles  
 Los Angeles Airport to Furnace Creek: 270 miles  
 Lone Pine to Las Vegas Airport: 225 miles  
 Lone Pine to Los Angeles Airport: 220 miles

## BADWATER CAPE FEAR

The fifth annual **Badwater Cape Fear** 50km / 51mi ultramarathon took place March 17 this year on Bald Head Island, North Carolina. A field of 179 runners from six countries and twenty-nine American states competed, with 61 of 62 runners completing the 50km race and 113 of 117 runners completing the 51-mile race. One of those finishers was the legendary Jay Birmingham, age 72, the second man to ever run the Badwater - Whitney course (back in 1981), the 2003 Badwater Hall of Fame inductee, and 2004 Badwater 135 finisher.

With 50km and 51-mile race options, Badwater® Cape Fear features a twelve-mile warm-up on the car-free, one-lane-wide roads of Bald Head Island, followed by either 19 or 39 miles of running on the wild and secluded sandy beach between Cape Fear and Fort Fisher. The race is held along the Atlantic Seaboard with spectacular views of the Frying Pan Shoals to the east and wild and undeveloped marshlands to the west. Running this remote coast is a dramatic, invigorating, and inspiring manner in which to experience the Cape Fear region in all its grandeur!



This exquisite natural setting is the perfect antidote to the “real world” and a wonderful counterpart to the desert sands and mountains of Death Valley and Anza-Borrego Desert featured in the two West Coast BADWATER® races.

Registration is already open for the March 16, 2019 edition, and there is a 200-runner limit which will sell out. Whether you are a grizzled Badwater veteran, or looking to take on your first Badwater race, we hope you will join us!

Visit [www.badwater.com](http://www.badwater.com) for all the information and the registration link.





# About Cape Fear

Cape Fear is a prominent headland jutting into the Atlantic Ocean from Bald Head Island on the coast of North Carolina in the southeastern United States. It is largely formed of barrier beaches and the silty outwash of the Cape Fear River as it drains the southeast coast of North Carolina through an estuary south of Wilmington.

Cape Fear is formed by the intersection of two sweeping arcs of shifting, low-lying beach, the result of longshore currents which also form the treacherous, shifting Frying Pan Shoals, part of the Graveyard of the Atlantic.

Dunes dominated by sea oats occur from the upper beach driftline back to the stable secondary dunes, where they mix with other grasses such as Saltmeadow Cordgrass and panic grass, as well as seaside goldenrod, spurge and other herbs to form a stable salt-tolerant grassland.

The Cape Fear estuary drains the largest watershed in North Carolina, containing 27% of the state's population.

Giovanni da Verrazzano, the Italian explorer sailing for France, made landfall after crossing the Atlantic at or near Cape Fear on March 1, 1524.

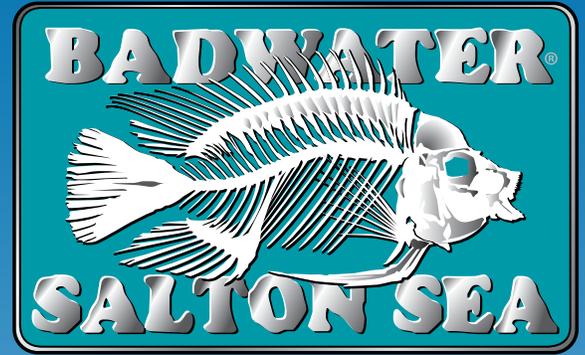
The name comes from the 1585 expedition of Sir Richard Grenville. Sailing to Roanoke Island, his ship became embayed behind the cape. Some of the crew were afraid they would wreck, giving rise to the name Cape Fear.[1] It is the fifth-oldest surviving English place name in the U.S.[2]

Cape Fear was the landing place of General Sir Henry Clinton during the American Revolutionary War on May 3, 1775. The 1962 movie Cape Fear and its 1991 remake were set at Cape Fear.

The legend of Cape Fear lives on with BADWATER® CAPE FEAR!

*Source: Wikipedia*

The sixth annual Badwater Salton Sea 81-mile ultramarathon took place April 29-30 of this year. This remarkable event challenges teams of two or three ultrarunners – running together as duos or trios for the duration, NOT in a relay – to tackle an unimaginable traverse of Southern California deserts and mountains. This year, ninety-two runners from eleven countries and twenty-one American states competed as 16 two-person teams and 20 three-person teams. Of the 36 teams entered, just 24 completed the race intact, with 61 of 92 runners finishing officially. Teams that do not finish as a complete unit are unranked, though all finishers receive the coveted Badwater Salton Sea buckle featuring the fish skeleton motif reminiscent of the start line.



The route covers 81 miles (130km) from Salton City (elevation 234 feet / 71m below sea level) to Palomar Mountain, the almost tallest mountain in San Diego County (elevation 5500 feet / 1676m.) Eight of the 81 race miles pass through Anza-Borrego State Park on a single track trail from Borrego Springs to near Ranchita, creating a race route which is a mix of road and trail. There is a total elevation gain of over 9000 feet (2740m).

Registration is already open for the April 28-29, 2019 edition, and there is a 105-runner limit!

Visit [www.badwater.com](http://www.badwater.com) for all the information and the registration link.





# Winning

CYCLING, RUNNING, MULTISPORT TRIATHLON RACING

**AFTER RUNNING  
135 MILES  
IN 37 HOURS IN  
DEATH VALLEY,  
WOULDN'T YOU  
BE SMILING?**

Ultrarunner Lisa Smith

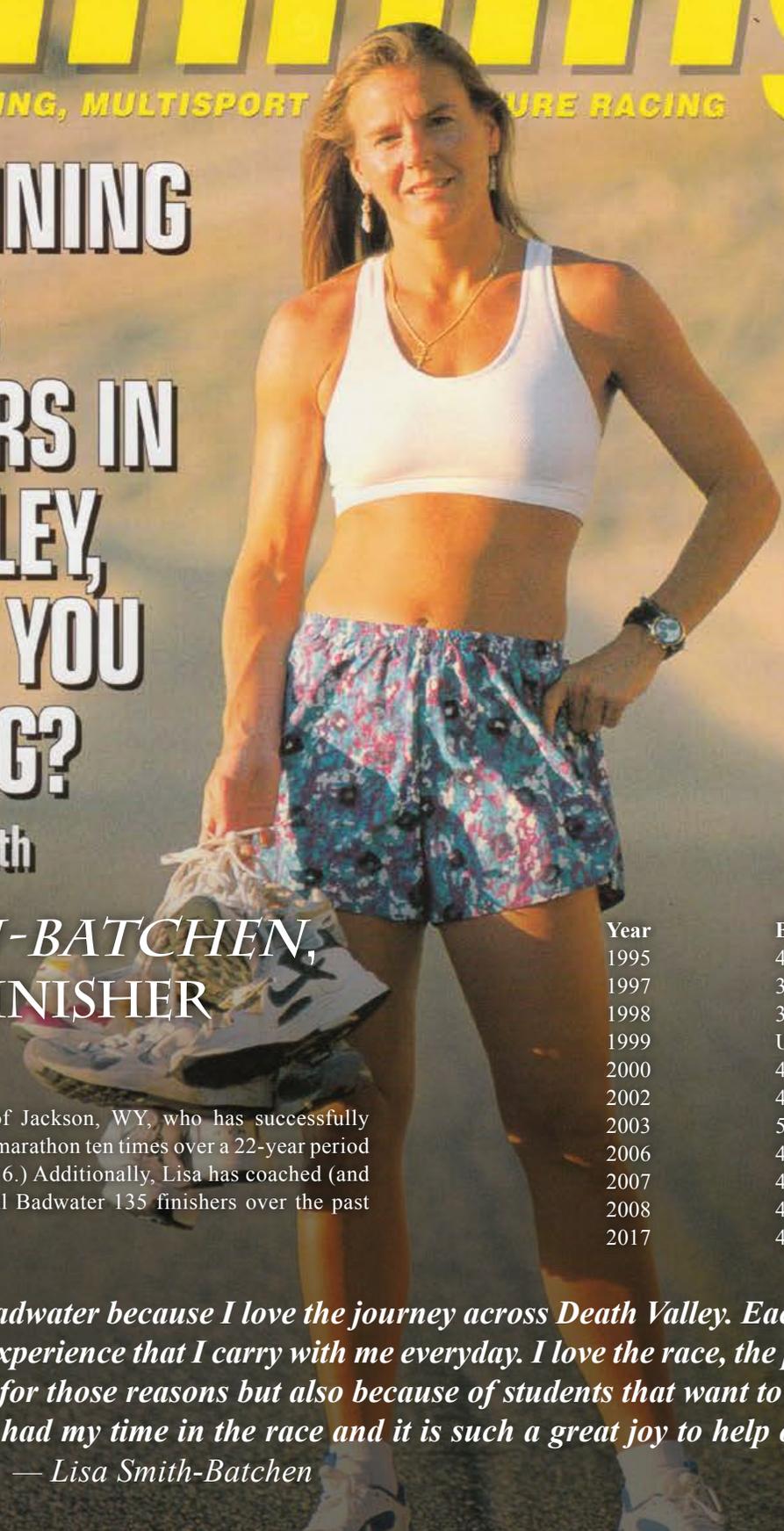
*LISA SMITH-BATCHEN,  
TEN-TIME FINISHER*

By Chris Kostman

In 2018, we salute Lisa Smith of Jackson, WY, who has successfully completed the Badwater 135 Ultramarathon ten times over a 22-year period from 1995 through 2017 (age 34-56.) Additionally, Lisa has coached (and often crewed) scores of successful Badwater 135 finishers over the past two decades.

Year	Badwater
1995	41:24:31
1997	37:01:00
1998	37:33:00
1999	Unofficial Finish
2000	43:23:56
2002	40:28:22
2003	52:11:39
2006	49:23:49
2007	41:54:17
2008	47:17:30
2017	42:44:14

*“I keep going back to Badwater because I love the journey across Death Valley. Each time was an incredible learning experience that I carry with me everyday. I love the race, the people, and Death Valley. I go back for those reasons but also because of students that want to experience the race as well. I have had my time in the race and it is such a great joy to help others have there own journey.”* — Lisa Smith-Batchen



# RAY SANCHEZ, TEN-TIME FINISHER

By Chris Kostman

In 2018, we salute Ray Sanchez, 51, of Sacramento, CA, who has successfully completed the Badwater 135 Ultramarathon ten times in a row, from 2008 through 2017 (age 41-50.) Additionally, Ray is a four-time finisher of Badwater Salton Sea in 2013, 2016, 2017, and 2018 (including running on the overall winning teams in 2013 and 2016) and a two-time finisher of Badwater Cape Fear in 2017 and 2018.

Year	Badwater
2008	37:54:25
2009	50:25:24 (lost 11 hours due to fire)
2010	38:59:07
2011	42:19:42
2012	35:59:53
2013	37:30:17
2014	27:43:32
2015	33:57:14
2016	31:33:29
2017	30:23:20

*“Over the 10 consecutive years of participating in Badwater 135, the race has become a part of me. The camaraderie and being part of a unique group of runners from all over the world who share the same desire for adventure has become a meaningful part of my overall ultra running experience. Badwater 135 is like family to me. Badwater 135 is not only the most hardest foot race in the world to me, but the journey leading up to the race and celebrations post race is what I value most.”*

— Ray Sanchez





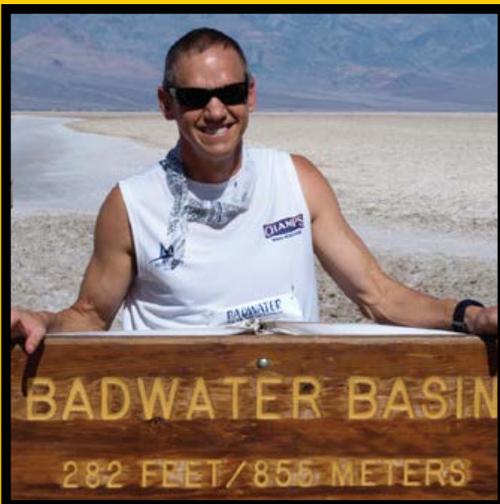
# The AdventureCORPS Cup (formerly the Death Valley Cup)

recognizes those athletes who complete both the Badwater 135 Ultramarathon and the Silver State 508 (formerly Furnace Creek 508) Bicycle Race in the same calendar year. To earn this recognition is a very significant achievement in endurance sports, and especially for those who love our AdventureCORPS events.

For more information about Silver State 508, visit: [www.the508.com](http://www.the508.com)

## CURRENT DEATH VALLEY CUP RECORD HOLDERS

**Charlie Engle, “Water Dragon”** Greensboro, NC, 47, 2009 (2nd DV Cup)



### Badwater

25:45:11, 4th place

### Furnace Creek

33:19:25, 4th place

=59:04:36 total time\*

**Shanna Armstrong “Dik Dik”** Lubbock, TX, 34, 2008



### Badwater

31:16:10, 3rd female, 7th overall

### Furnace Creek

34:30:58, 5th female, 24th overall

=65:47:08 total time\*

(\*To receive the Death Valley Cup plaque, these combined record times must be broken.)

# DEATH VALLEY CUP FINISHERS

\* Note: The 2013 edition of Furnace Creek 508, also known as "Trona 353," was held on an abbreviated 353-mile course due to the federal government shutdown. The race moved from the Furnace Creek Route in California to the Silver State route in Nevada in 2014.

Athletes	Yr	Badwater	FC508	Time
Shanna Armstrong "Dik Dik" Lubbock, TX, 34	2008	Badwater, 31:16:10, 3rd female, 7th overall	Furnace Creek, 34:30:58, 5th female, 24th overall	=65:47:08
Patrick Candé, "Golden Eagle" Tahiti, French Polynesia, 48	2005	Badwater, 34:13:21, 7th place	Furnace Creek, 36:52:12, 37th place	=71:05:33
Joaquin Candel, "Toro" Henderson, NV, 45	2015	Badwater, 42:55:23, 67th place	Silver State 508, 49:57:50, 22nd place	=92:53:43
Angelika Castaneda, "Cat" San Diego, CA, 56 (1st Ever female DV Cup)	1999	Badwater, 36:58, 1st female, 8th overall	Furnace Creek, 43:46:40, 3rd female, 18th overall	=80:44:40
Meredith Dolhare, "RedAssd Monkey" Charlotte, NC, 40	2013	Badwater, 30:52:40 3rd female, 20th overall	"Trona 353*," 30:42:00 8th female, 54th overall	=60:34:40
Charlie Engle, "Water Dragon" Greensboro, NC, 45	2007	Badwater, 27:42:32, 5th place	Furnace Creek, 34:31:12, 13th place	=62:13:44
Charlie Engle, "Water Dragon" Greensboro, NC, 47 (2nd DV Cup)	2009	Badwater, 25:45:11, 4th place	Furnace Creek, 33:19:25, 4th place	=59:04:36
Charlie Engle, "Water Dragon" Greensboro, NC, 51 (3rd DV Cup)	2013	Badwater, 26:15:35, 5th place	"Trona 353*," 26:52:00, 12th place	=53:07:35
Monica Fernandez, "Quetzal" Casablanca, Morocco, 40, Guatemala	2008	Badwater, 35:17:59, 7th female, 12th overall	Furnace Creek, 32:58:12 2nd female, 12th overall	=68:16:11
Paul Grimm, "Wile E Coyote" Littleton, CO, 44	2012	Badwater, 46:13:12, 87th place	Furnace Creek, 45:10:28, 41st place	=91:23:40
Tim Hewitt, "Muskox" Greensburg, PA, 56	2010	Badwater, 36:30:52 26th place	Furnace Creek, 42:11:07 32nd place	=78:41:59
Nickademus Hollon, "Horned Lizard" San Diego, CA, 19	2009	Badwater, 33:21:29, 18th place	Furnace Creek, 44:06:44, 24th place	=77:28:13
Nickademus Hollon, "Horned Lizard" San Diego, CA, 20 (2nd DV Cup)	2010	Badwater, 31:53:00, 13th place	Furnace Creek, 39:53:28 21st place	=71:46:28
David Jackson, "Jackass" Lexington, KY, 43	2002	Badwater, 47:12:30, 25th place	Furnace Creek, 38:56:12 15th place	=86:08:42
James Kern, "Shrike" Sunnyvale, CA, 55	2013	Badwater, 33:57:30, 22nd place	"Trona 353*," 22:31:00, 11th place	=56:28:30
Charlie Liskey, "Lizard" Somis, CA, 40	1996	Badwater, 58:26, 14th place	Furnace Creek, 39:32:08 17th place	=97:58:08
Eric Meech, "Cattle Dog" San Diego, CA, 44	2013	Badwater, 41:17:32 47th place	"Trona 353*," 26:45:00 33rd place	=68:02:32
Jean Michel Monot, "Manta Ray" Tahiti, French Polynesia, 45	2005	Badwater, 36:51:12, 11th place	Furnace Creek, 35:53:48 31st place	=72:45:00
Ted Philip, "Mountain Gorilla" Wayland, ME, 47	2012	Badwater, 32:30:48, 24th place	Furnace Creek, 38:52:59, 17th place	=71:23:47
Greg Pressler, "Pheasant" Portland, OR, 43	2011	Badwater, 38:36:46 43rd place	Furnace Creek, 42:18:56 39th place	=80:55:42
Tim Robert, "Devil Dog," Honolulu, HI, 52	2017	Badwater, 39:01:59 44th place	Furnace Creek, 37:31:00 7th place	=76:32:59
Vito Rubino, "Crazy Ibex" Pasadena, CA, 36	2014	Badwater, 35:23:51 27th place	Silver State 508, 37:19:00 14th place	=72:42:51
Kaname Sakurai, "Sea Lion" Nagoya, Japan, 36	2000	Badwater, 27:52:14, 3rd place	Furnace Creek, 32:31:56, 2nd place	=60:24:10
Michele Santilano, "Shongololo" Menlo Park, CA, 38, South Africa	2008	Badwater, 39:42:23, 11th female, 29th overall	Furnace Creek, 38:01:42, 7th female, 42nd overall	=77:44:05
Del Scharffenberg, "Spider" Portland, OR, 52	1997	Badwater, 48:16, 13th place	Furnace Creek, 42:15:26, 10th place	=90:31:26
Monica Scholz, "Scarlett Fairy Cup" Jerseyville, ON, Canada, 37	2004	Badwater, 29:22:29, 1st female, 3rd overall	Furnace Creek, 44:29:15, 1st female, 25th overall	=73:51:44
Monica Scholz, "Scarlett Fairy Cup" Jerseyville, ON, Canada, 39 (2nd DV Cup)	2006	Badwater, 32:07:01, 1st female, 8th overall	Furnace Creek, 40:00:02, 2nd female, 27th overall	=72:07:01
Joshua Talley, "Escape Goat" Santa Monica, CA, 43	2015	Badwater, 38:59:05, 44th place	Silver State 508, 39:07:08, 9th place	=78:06:13
Steve Teal, "Desert Duck" Phelan, CA, 40	2005	Badwater, 43:56:20, 34th place	Furnace Creek, 35:39:52 29th place	=79:46:12
Steve Teal, "Desert Duck" Phelan, CA, 41 (2nd DV Cup)	2006	Badwater, 42:29:16, 32nd place	Furnace Creek, 41:24:06 29th place	=83:53:22
Steve Teal, "Desert Duck" Phelan, CA, 42 (3rd DV Cup)	2007	Badwater, 44:16:27, 50th place	Furnace Creek, 34:16:04, 11th place	=78:32:31
Steve Teal, "Desert Duck" Phelan, CA, 43 (4th DV Cup)	2008	Badwater, 45:24:20, 56th place	Furnace Creek, 35:12:55, 26th place	=80:37:15
Steve Teal, "Desert Duck" Phelan, CA, 45 (5th DV Cup)	2010	Badwater, 42:15:49 47th place	Furnace Creek, 37:15:00, 16th place	=79:30:49
Marshall Ulrich, "Unicorn" Ft. Morgan, CO, 43 (1st Ever DV Cup)	1996	Badwater, 33:01, 1st place	Furnace Creek, 38:32:45 16th place	=71:33:45
Danny Westergaard, "Wiener Dog" Rolling Hills, CA, 48	2007	Badwater, 32:22:58, 12th place	Furnace Creek, 35:51:38, 19th place	=68:14:36
Danny Westergaard, "Wiener Dog" Rolling Hills, CA, 49 (2nd DV Cup)	2008	Badwater, 36:31:46, 17th place	Furnace Creek, 34:38:34, 23rd place	=71:10:20
Danny Westergaard, "Wiener Dog" Rolling Hills, CA, 50 (3rd DV Cup)	2009	Badwater, 35:51:24, 28th place	Furnace Creek, 39:54:25, 14th place	=75:45:49
Danny Westergaard, "Wiener Dog" Rolling Hills, CA, 51 (4th DV Cup)	2010	Badwater, 37:13:19 30th place	Furnace Creek, 40:32:17 23rd place	=77:45:36
Danny Westergaard, "Wiener Dog" Rolling Hills, CA, 52 (5th DV Cup)	2011	Badwater, 38:29:58 42nd place	Furnace Creek, 37:40:22 23rd place	=76:10:20
Danny Westergaard, "Wiener Dog" Rolling Hills, CA, 53 (6th DV Cup)	2012	Badwater, 39:52:42, 26th place	Furnace Creek, 33:22:00, 20th place	=73:14:42
Danny Westergaard, "Wiener Dog" Rolling Hills, CA, 54 (7th DV Cup)	2013	Badwater, 42:41:28, 59th place	"Trona 353", 28:54:00, 45th place	=71:35:28
Danny Westergaard, "Wiener Dog" Palos Verdes Estates, CA, 55 (8th DV Cup)	2014	Badwater, 38:25:08 46th place	Silver State 508, 41:23:00 17th place	=81:48:08
Danny Westergaard, "Wiener Dog" Palos Verdes Estates, CA, 56 (9th DV Cup)	2015	Badwater, 36:39:17, 31st place	Silver State 508, 43:08:00, 11th place	=79:42:17
Danny Westergaard, "Wiener Dog" Palos Verdes Estates, CA, 57 (10th DV Cup)	2016	Badwater, 36:14:40, 35th place	Silver State 508, 43:30:00, 10th place	=79:44:40
Danny Westergaard, "Wiener Dog" Palos Verdes Estates, CA, 57 (11th DV Cup)	2017	Badwater, 35:25:16, 21st place	Silver State 508, 42:25:00, 11th place	=77:50:15
Thomas Zaide, "Speedy Turtle" Long Beach, CA, 37	2014	Badwater, 46:33:40 78th place	Silver State 508, 47:35:00, 25th place	=94:08:40

# THE MEANING OF BADWATER

*Badwater represents everything and anything badass in the world of running. It has meant the unreachable and most difficult event that I have known about since my late teens that has loomed in my head as this grueling challenge that I would one day want to achieve.*

—Telma Ghazarian Altoon

*Badwater for me is more than a brand, it is a way of life that I choose to follow to improve how I react and interact with everyone and everything around me.*

*To me, Badwater means to explore and learn. Badwater is also a family.*

—Luigi Dessy

*It's a legacy of grit, desire, determination and pure spirit of adventure. Now that all lands have been discovered, the true exploration begins within, finding our true potential and pushing beyond our perceived limits.*

—Michele Graglia

*Big dreams + hard work + perseverance = Badwater!*

—Chavet Breslin

*BADWATER is indicative of life's journey, grit, fortitude and gentleness with myself. Challenges unfold, and I embrace them with the wisdom and knowledge that I intrinsically hold within me. I learn to live in the moment and breathe deeply when the going gets tough. Badwater and life are privileges.*

—Kim Buzik

*The name Badwater, to me, stands for toughness, grit, and the highest-of-standards for ultras. It is the epitome of finding out how "tough" one truly is.*

—Jared Fetterolf

*World's toughest. Not just races but toughest athletes, toughest family, toughest spirits, toughest bodies, toughest minds.*

—Michael Peragine

*Badwater to me is the 1% of endurance athletes that are never content, always striving, always hungry. First class sportsmanship, competition, care for humanity and the environment.*

—Joshua Holmes

*Badwater to me means the supreme feat of ultrarunning. It stands for greatness, excellence and fierceness.*

—Christy Johnston

*The Badwater brand connotes friendship, teamwork, perseverance, quality, and sweat.*

—David Coats

*Simply "The World's Toughest" I proudly wear my Badwater gear knowing I represent a mindset few can comprehend. It means facing your fears being "scared to death but showing up anyway."*

—Will Glover

*Badwater means challenge, reaching deep, an accomplishment. Surprising myself every time. Lots of Whys. Some answers.*

—Karla Kent

*To me, Badwater means FAMILY. Together we laugh, cry, celebrate the highs and deal with the lows. We encourage, support and take care of each other. We can be our most vulnerable without ridicule and always feel loved.*

—Marylou Corino

*Whenever I hear the word Badwater I immediately think, "Wow!"*

—Sally McRae

*Badwater means growth: a symbol of conquering the impossible.*

—Ryan Montgomery

*Badwater stands for chasing your dreams. It's the chill that goes down your spine when you stand at its start line. It's the calm night before the blistering heat. It's the change that happens in you when you cross the finish line.*

—Kevin Delk

*Badwater represents toughness, dedication, courage, heart, family, sacrifice and many other adjectives I believe describe what I wish to teach my family and community.*

—Angel Vega

# THE MEANING OF LIFE

*Happiness. I believe the meaning of life is to find our individual path to reaching personal happiness and to help others achieve the same state of joyful living. The challenge is in finding our way and never giving up on the dream.*

—**Jacqueline Brown**

*Life is continually engaging in activities that make one a better, stronger person; which at the same time improve family and community life, causing the world to be a better, stronger and happier place.*

—**Leslie Carboni**

*Life is what we CHOOSE to make of it. I believe that we are all in control of our destiny and we decide what impact we'll make on this world, and the people in it, while we are here. Make that impact great!*

—**David Carder**

*Life is not about the tangible, but rather the intangible: The moments we share with friends and family and the experiences we have are what shapes our lives.*

—**Kayla Delk**

*Life is made of barriers and obstacles but overcoming our own limits, you win.*

—**Simone Leo**

*To discover yourself and your own potential. Be kind, serve others, love, laugh, and adventure!*

—**Yassine Diboun**

*As a firefighter/paramedic I see tragic accidents on a daily basis. Life is fragile and temporary. The meaning of life is live with a sense of urgency. To wake up and realize how lucky you are to be breathing. And with that breath, don't waste a single second.*

—**Andrew Glaze**

*I believe we should live a full life, and when our time comes be happy we have created a legacy to leave the world a better place because we gave something back. Don't leave this life with the ghost of unfulfilled dreams.*

—**Steve Gordon**

*The life have many meanings but the one I love a lot is to give. The more I give the more I get, so I can give more. It does not have to be something big. Even a smile can change somebody's life. I have one sentence, which my parents told me, always in my mind parents learnt me: "Live in a way that nobody would cries because of you"*

—**Grzegorz Gucwa**

*Find out what makes you unique. Find what you love to do, and do it! Be courageous enough to take on challenges that scare you, but humble enough to enjoy the kindness of others.*

—**Pete Kostelnick**

*The meaning of life to me, is live your dreams! Make things happen! Enjoy your abilities and share them with others. Inspire others to do their best as it will benefit the entire wellbeing of the planet and all who reside here. May we all live to our best potential. Cheers to lessons learned and adventures made!*

—**Ashley Lindsey**

*Close relationships, health, contentment and a reason for being. My mother always said, "only boring people get bored." I am never bored and constantly trying to squeeze all I can out of every 24 hours.*

—**Bradford Lombardi**

*It's a VIP ticket to the entire show. Might be a comedy, drama or tragedy but it is never boring. If it is, you're in the wrong theater. It's worth a heck of a lot, so utilize it wisely and don't waste it or get there late.*

—**Grant Maughan**

*Each of us has been given the ability to succeed at some level, yet those blessings aren't meant for our sole benefit, but to assist others in a life-impacting way.*

—**Frank McKinney**

*Life has no meaning if you don't live a meaningful life. Find your purpose in life. Love & respect yourself so in the same way you can do to others. Be of service, live by example. Be happy, so you can bring joy to others. Be grateful, we all have something to be grateful for, value it. Have dreams, but work hard for them. Be courageous, don't be afraid to fall, just be strong to rise again, those scars will give meaning to your life. Life is a journey, and you are the captain, make it worthwhile.*

—**Patsy Ramirez-Arroyo**

## THE OFFICIAL CHARITIES

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**THE OFFICIAL CHARITIES OF ADVENTURECORPS** are The Challenged Athletes Foundation, Caring House Project Foundation, and Bald Head Island Conservancy. The goal and purpose of our events is to raise funds for, and awareness of, these wonderful and important organizations.



**The Challenged Athletes Foundation** was created on the belief that people of all abilities should have the opportunity to pursue a life full of physical activity and of sports. Be they recreational or in pursuit of a gold medal at the Paralympic Games, people with a physical disability are limited only by their access to funding. Since 1994, CAF has raised over \$76 million—allowing the Foundation to satisfy thousands of funding requests from challenged athletes in all 50 states and across the globe.

Over eighty cents of every dollar raised by CAF provides funding and programs that get challenged athletes into the game. Whether it's a \$2,000 handcycle, helping underwrite a \$15,000 running prosthetic or arranging enthusiastic encouragement from a mentor who has triumphed over a similar injury, CAF's mission is clear: give those with the desire to live active, competitive lifestyles every opportunity to compete in the sports they love.

Since 2002, AdventureCORPS has raised over \$350,000 for CAF, and AdventureCORPS athletes have raised equally impressive sums!

**Website:** [www.challengedathletes.org](http://www.challengedathletes.org)



**The Bald Head Island Conservancy** was founded on Bald Head Island, NC in 1983 with a focus on barrier island conservation, preservation, and education. The Conservancy sponsors and facilitates scientific research that benefits coastal communities and provides numerous recreational and educational activities to the public. In coordination with various organizations, partnerships, and collaborations, the Conservancy has led the nation in conservation and research efforts and is uniquely poised to become a leader in Barrier Island Conservation world-wide.

Badwater fans and race participants will appreciate that BHIC cares for the pristine setting for the Badwater Cape Fear race route and its role as a sea turtle nesting site and sanctuary. The Conservancy also serves as the host and finish line for our event. As such, our goal is to raise \$10,000 to purchase one of the special UTV vehicles which BHIC uses to patrol the beach and care for sea turtle nesting sites.

**Website:** [www.bhic.org](http://www.bhic.org)



Since 2014, AdventureCORPS is proud to recognize **Caring House Project Foundation** as an Official Charity and support their efforts. Founded by ten-time Badwater 135 veteran Frank McKinney, and based on the principal that “stability begins at home,” CHPF provides shelter to the world's most desperately poor and homeless by building entirely self-sufficient villages in the poorest county in the Western Hemisphere, Haiti.

As of today 10,616 children and their families have been provided with a new concrete home, and countless more are alive because of CHPF's efforts. In 2017 CHPF completed its 24th self-sufficient village in Guimbi, Haiti. That's right, 24th self-sufficient village in 21 Haitian cities in last 14 years! Visit [www.chpf.org](http://www.chpf.org) to support Frank's efforts. Thank you for all you do, Frank and Nilsa!

**Website:** [www.chpf.org](http://www.chpf.org)

The hottest, driest and lowest non-profit in the U.S.

# INSPIRING A PASSION

*for Death Valley and Ash Meadows*

Since 2009, AdventureCorps participants have contributed over \$20,000 to DVNHA in support of Death Valley National Park programs. To make a donation or shop with us online please visit [dvnha.org](http://dvnha.org).

education

preservation

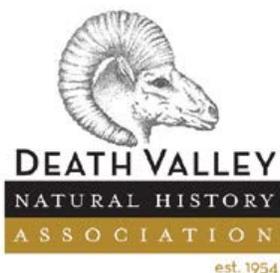
partnership

accountability



Photos, clockwise from top left: Mosaic Canyon, Kimber Moore, Badwater Salt Pan, Tim Kendziorzski, Devils Hole Pupfish, Kimber Moore; Ash Meadows collage, Tim Kendziorzski; Twenty Mule Team (historic), NPS.

Preserving and interpreting the natural and cultural resources of the Death Valley region in cooperation with our government partners: Death Valley National Park and Ash Meadows National Wildlife Refuge.



**Bookstore Locations:**

- Furnace Creek Visitors Center
- Stovepipe Wells Ranger Station
- Scotty's Castle Museum (temporarily closed)
- Ash Meadows NWR

(800)478-8564  
[dvnha.org](http://dvnha.org)

All proceeds benefit education and research in Death Valley National Park and Ash Meadows National Wildlife Refuge. Please visit us next time you are in the park or shop with us online at [dvnha.org](http://dvnha.org)

ENVIRONMENT

AdventureCORPS events happen not in a man-made stadium, but in the real world “out there.” We care deeply about the natural world for we are intrinsically linked with it and because we want to enjoy these events in their awesome natural settings for a long, long time.

As such, we joined **One Percent For The Planet** on July 1, 2008, a growing global movement of more than 1200 companies that donate at least 1% of their sales to a network of more than 3600 approved environmental organizations worldwide. Therefore we donate at least 1% of total revenues (in other words, “off the top,” not just 1% of profit) to environmental causes. This is in addition to all the work we do on behalf of, and donations we make to, Challenged Athletes Foundation, Major Taylor Association, and Caring House Project Foundation, which are wonderful causes but not environmental in their focus. In the past ten years, we and our fellow One Percent For The Planet members have invested over \$100 million in positive environmental change.



In association with our membership in One Percent for the Planet, we have supported **The Conservation Alliance** since September, 2008. The Conservation Alliance is an organization of outdoor businesses whose collective contributions support grassroots environmental organizations and their efforts to protect wild places where outdoor enthusiasts recreate. Alliance funds have played a key role in protecting rivers, trails, wildlands and climbing areas throughout North America.



Membership in the Alliance is open to companies representing all aspects of the outdoor industry, including manufacturers, retailers, publishers, mills and sales representatives. The result is a diverse group of businesses whose livelihood depends on protecting our natural environment. Since its inception in 1989, the Alliance has contributed close to \$13 million to grassroots conservation groups throughout North America. The results of our funding have been remarkable. Alliance funding has helped to save more than 44 million acres, protect 2,945 miles of rivers, stop or remove 26 dams, and purchase 10 climbing areas. There are now more than 190 member companies, and plans to disburse \$1.65 million in 2015.

In 2014, we began supporting the **Bald Head Island Conservancy** with the inaugural BADWATER Cape Fear race by focusing attention on the race route’s pristine setting as a sea turtle nesting area and BHIC’s role as a leader in barrier island conservation, preservation and education.



Additionally, we have championed other environmental causes including the **Los Angeles County Bicycle Coalition**, a nonprofit organization with over 1,000 members that engages cyclists through advocacy, education and outreach across the county. Founded in 1998, LACBC brings together the diverse bicycling community in a united mission to improve the bicycling environment and quality of life for the entire region. In 2011, we donated \$10,000 to LACBC to initiate and sponsor the Jim Swarzman Memorial Membership Drive, an effort that brought \$23,000 into LACBC.

AdventureCORPS joined the **Death Valley Natural History Association** as Life Members and recognized DVNHA as an Official Charity of AdventureCORPS from 2009 through 2013. DVNHA is a non-profit organization supporting education, research, and preservation in Death Valley National Park and Ash Meadows National Wildlife Refuge. Some of their efforts include DeathValley R.O.C.K.S. (bringing inner city kids to experience one of the largest outdoor classrooms in the world), Devil’s Hole Pupfish Recovery, Death Valley All Taxa Biological Inventory, plus they run the wonderful gift shops in the Park.



According to DVNHA, AdventureCORPS has paid for, at the minimum, “every need (sleeping bags, cooking fuel, transportation) for one Death Valley ROCKS school group (50-60 students, chaperones, and teachers) every year since 2009.” AdventureCORPS athletes have also supported this and other DVNHA causes! Additionally, through DVNHA, AdventureCORPS and our athletes have donated \$5000 to support the recently renovated Death Valley National Park Visitors Center, as evidenced by five “donor tiles” are in the Visitors Center (one per \$1000 donation.)



*The*  
**SILVER  
STATE**  
**508**  
*Since 1983*



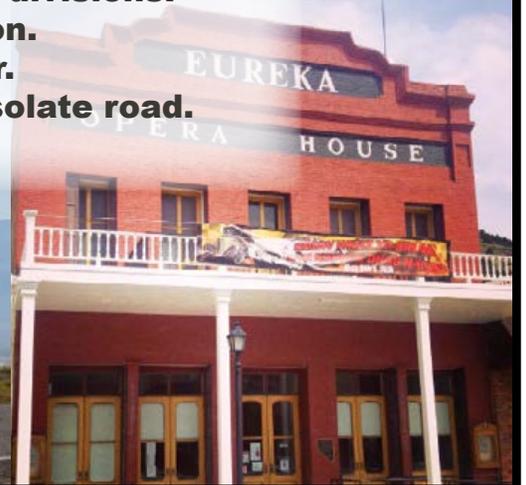
**508-mile race**  
**September 14 – 16, 2018**

**"The Toughest 48 hours in Sport"**

**The world's premier 48-hour ultra cycling race**



**Solo, Two-Person Relay, and Four-Person Relay divisions.**  
**Self-Supported Solo Randonneur division.**  
**Race Across AMERICA (RAAM) qualifier.**  
**Epic mountain climbs, stark desert scenery, desolate road.**  
**Starts and finishes in Reno, Nevada.**



# BADWATER ULTRAMARATHON

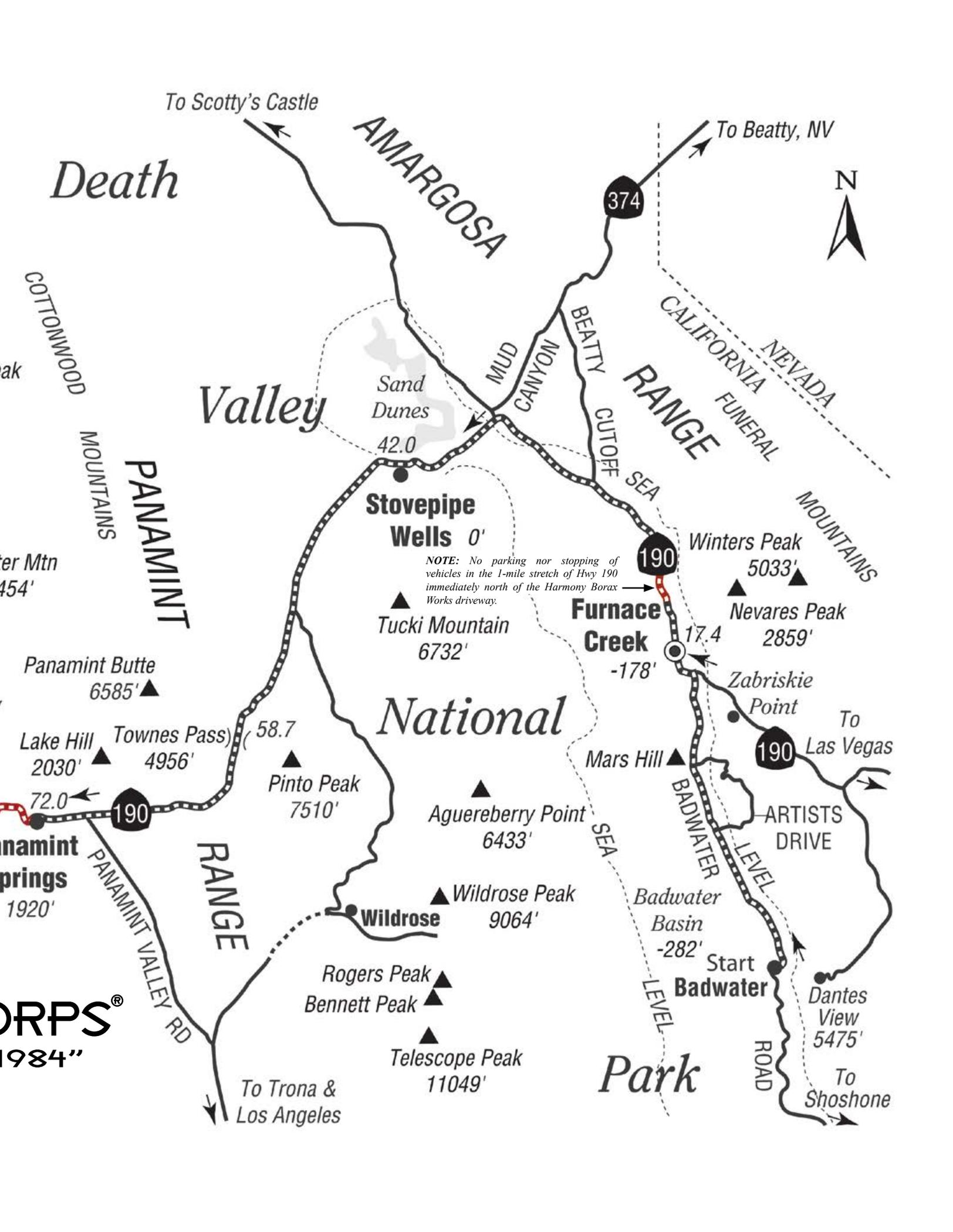
The Challenge of the Champions



adventureco

"Out There Since 1968"





## COURSE DESCRIPTION

### Badwater Basin, Death Valley (- 85m / 280ft)

The race begins here adjacent to a pool of saltwater located at the lowest place in the Western Hemisphere.

### Furnace Creek Ranch (-170'), Mile 17.5 (Time Station #1)

The first oasis in our journey. A gas station, small general store, hotel, restaurant, camping, and ice are available. Stock up here!

### Stovepipe Wells (Sea Level), Mile 42.2 (Time Station #2)

A small general store, gas station, restaurant and motel. Location of the race's Medical HQ for most of first 15 hours of the race. Stock up here!

### Towne Pass (4956'), Mile 58.7

17-mile long ascent with 5000' of elevation gain, then a 10-mile long descent with 3000' feet of elevation loss into the Panamint Valley. It's a steep and narrow road with limited opportunities to park. Support vehicles, crews, and runners must be cautious and extra aware of the traffic.

### Panamint Springs Resort (2000'), Mile 72.7 (Time Station #3)

Gas station / mini-mart, plus restaurant and motel. We rent out "The Cottage" as a way station for any and all race entrants and crews to use during the race: Bring your own towel, soap, and shampoo and make a big effort to keep the room and bathroom tidy. After passing Panamint Springs, a long, steep climb follows on a steep and narrow road with limited opportunities to park. Support vehicles, crews, and runners must be cautious and extra aware of the traffic, and ONLY park in the eight designated parking zones between Panamint Springs Resort and unmarked "Panamint Pass" at mile 84.9.

### Father Crowley's Turnout (4000'), Mile 80.65

The bathrooms and parking lot that designate this view point are not the top of this ascent, though you may hope so. The road continues to rise to 5000' over rolling hills, then eventually descends into the Owen's Valley.

### Darwin Turn-Off (5050'), Mile 90.6 (Time Station #4)

Just a few miles to the south of our route is the small inhabited ghost town of Darwin, the website for which touts "NO broadcast TV; NO AM/FM radio, NO cell signal; NO stores; NO restaurants." This is where the race usually starts to get serious for all entrants. Look for Mile Marker 28 about nine miles ahead to indicate your 100-mile mark!

### Keeler (3610'), Mile 108.1

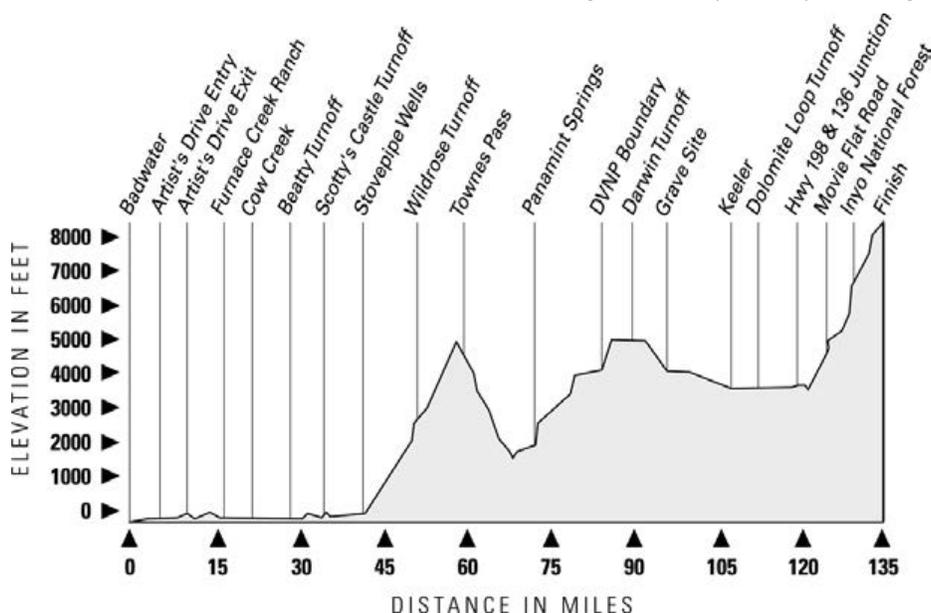
This is a small mining town with no facilities which abuts the Owens Dry Lake Bed the left of the highway. Amazing views of Mt. Whitney and the Sierra Nevada abound. A dirt road to the right ascends to Cerro Gordo, an authentic ghost town which was featured in the 2014 Badwater 135 and will be featured again in the upcoming "Badwater® Cerro Gordo" 102-mile Ultramarathon.

### Lone Pine (3610'), Mile 122.7 (Time Station #5)

Lone Pine offers the weary runner and crew all the amenities of a real town: fast food, pizza, restaurants, motels, gas stations, grocery stores, and more, not to mention our Race Headquarters at the Dow Villa. Restock here for the climb to Whitney Portal. Turn left onto the Whitney Portal Road to begin the final leg, the longest and steepest climb of the race (13 miles with 5000 feet of elevation gain). After the turn from Hwy 395, it's 8.4 miles to Time Station #6, located at the start of the switchbacks. Temperatures will steadily decrease during the ascent (though depending on time of day). Be prepared with extra layers of clothing and rain gear the final few miles; at night it can approach freezing temperature. Be sure your support vehicle is always parked completely off of the road and that you do not block traffic, even for a moment.

### Mt. Whitney Trailhead, (8360'), Mile 135

Congratulations! You have finished the world's toughest foot race! A small diner/shop are open during daylight hours. There is also a stocked fishing pond and a campground (because, of course, after running 135 miles, you really want to go fishing and camping!).



## THE OFFICIAL RACE ROUTE

	LANDMARK	DIST. (MI)	ELE. (FT)	MARKER
<b>NOTE: TL = TRAFFIC LIGHT; SS = STOP SIGN; T-INT = T-INTERSECTION; JCT. = JUNCTION</b>				
	Badwater Basin: Head north	0	-282	
	<b>Crews will be held for 10 minutes after each wave begins, then released in small batches.</b>			
	Former location of Telescope Peak Sign on L.	1.8	-200	
	Wide Shoulder on Right	3.1		
	Natural Bridge turnoff on R. <b>(PACERS MAY JOIN AGE 65+ RUNNERS HERE)</b>	3.5	-170	MM 13
	Wide Shoulder on R.	3.9		
	Devil's Golf Course on L.	5.6	-165	
	Artist's Drive entry on R.	8	-165	
	West Side Road on L.	10.6		MM 6
	Artist's Drive exit on R.	11.7	-70	
	Mushroom Rock on R.	12.1	-170	MM 5
	Golden Canyon on R. (Toilet / Parking) <b>(45 MPH)</b>	14.5	-165	
	Jct. Hwy 190 & Badwater Rd.: Go Left onto 190 north (Cell Service Begins)	16.5	0	
	<b>Watch Speed Limit! (Don't be like that Aussie team in 2015!)</b>			
	Timbisha Shoshone Reservation on L.	17.2	-140	
	Furnace Creek Ranch on L.: <b>Ice &amp; Store close at 300am (Time Station #1)</b>	17.5	-165	
	<b>Park in lots, not along roadway, near Time Station.</b>			
	Dumpsters available to dump garbage and recycling at Time Station.			
	Furnace Creek Fuel on L. (Please do NOT dump garbage here.)			
	Park Service Visitor's Center on L. (Run on bike path left of roadway)	17.7	-165	
	Furnace Creek Campground on L.	17.8	-170	
	Harmony Borax Works on L.: <b>Park here and let runner go ahead (45 MPH)</b>	18.2	-170	
	<b>NO STOPPING, SLOWING, or PARKING NEXT 1 MILE! Drive beyond curves!</b>			
	<b>Parking allowed beyond curve section, where safe.</b>	20.1		
	Cow Creek on R.	20.8		
	1st Marathon	26.2		
	Daylight Pass Rd. on R. (Cell Service Ends)	28.4		MM 99.5
	Salt Creek turnoff on L.	30.8		MM 97.5
	Sea Level sign on R.	31.5	0	
	Sea Level sign on L.	32.1	0	
	"Summit" / end of rolling hills section	33.7	140'	MM 94.5
	North Hwy / Scotty's Castle turnoff on R.	34.9		MM 93.5
	Sea Level sign on L.	35.4	0	
	<b>MINIMAL PARKING NEXT 6 MILES! SOFT SHOULDERS. Do not get stuck in sand.</b>			
	Devil's Cornfield sign on R.	36.3	-80	MM 91.5
	Parking on R. (Space for 2-3 cars)	37.1		
	Camera Sign pullout on R. (Space for 4-5 cars only)	37.5		
	Sand Dunes Parking Lot on R. (Toilet / Parking) <b>(35 MPH)</b>	40.2	0	
	Approaching Stovepipe Wells (Cell Service Begins)	41	0	
	Stovepipe Wells Village Welcome sign: Gas / Food / Store opens at 300am!	42	0	
	<b>Time Station #2 &amp; Medical HQ on L. by hotel courtyard &amp; flag (PACERS MAY JOIN RUNNERS OF ANY AGE HERE.)</b>	42.2		
	<b>It's a long climb, and a long way, to Panamint Springs, 30 miles away!</b>			
	<b>It is CRITICAL to stock up on water, ice, and snacks, plus real food for the crew!</b>			
	<b>Also, take advantage of the low gas prices while you are here!</b>			
	Mosaic Canyon turnoff on L.	42.4	5	
	1000' Elevation sign on R. <b>(65 MPH)</b>	46.8	1000	
	Short downhill (Cell Service ends on this ascent.)	47.2		
	DIP Sign on R. <b>(Do NOT park in dips as you will be invisible!)</b>	48.5		
	<b>2000' Elevation sign: All racers must pass this location before 1000am</b>	50.7	2000	MM 77.5
	Wildrose Station (Bathroom; paved parking lot on R.)	51.2	2450	
	<b>Please park neatly and use designated spaces. Don't park "haphazardly."</b>			

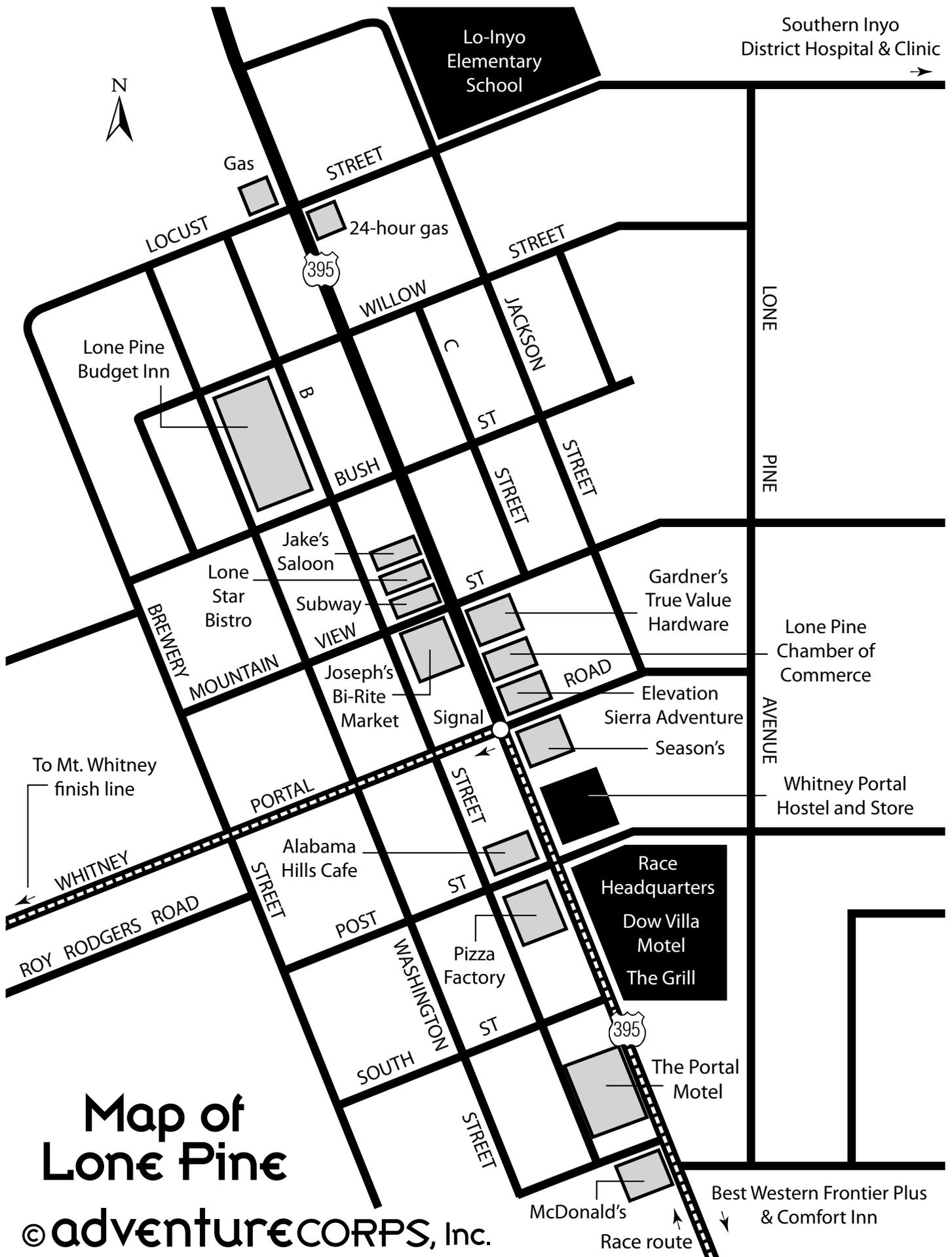
## THE OFFICIAL RACE ROUTE

	LANDMARK	Dist. (MI)	Ele. (FT)	MARKER
	Wildrose Turnoff on L.	51.4	2500	MM 76.5
	2nd Marathon	52.4	2800	MM 75.5
	3000' Elevation sign on L.	53.6	3000	
	4000' Elevation sign on L.	56	4000	
	DIP sign on R. (Do NOT park in dips as you will be invisible!)	56.4		
	Approaching the summit of Towne Pass (30 MPH)	57.25		MM 70.5
	Brake Check area on R.	58.9	4965	
	Towne Pass Summit sign on R.	59	4965	
	"Downhill Next 9 Miles - 9% Grade" - Begin descent into Panamint Valley	59.6		
	4000' Elevation sign on R. (55 MPH)	61.8	4000	
	Vista Point (amazing view of Mt. Whitney!) / big gravel pullout on R.	62	3500	
	Paved pullout on L.	62.5		
	Gravel pullout on L.	63.7		MM 64.5
	3000' Elevation sign on L.	64.1	3000	
	Large Paved pullout on L.	65.3		
	2000' Elevation sign on L. (65 MPH)	66.4	2000	
	Panamint Dry Lake Bed, east edge; "Soft Shoulder" sign	68.4	1640	
	Panamint Valley Road to Trona / Ridgecrest on L.	70.2	1750	
	Panamint Springs Resort: Gas / Mini Mart / Food / Hotel (35 MPH)	72.7	1970	
	Time Station #3 on L. at resort hotel, not at the gas station			
	All racers must pass TS3 before 800pm, Tuesday night			
	Free Showers and Flush Toilets across street at campground!			
	Get water, ice, snacks, and more at Gas Station / Mini Mart!			
	Get REAL FOOD quickly with "streamined Badwater Race Menu" at the Resort			
	WARNING: Parking only allowed in designated locations for next 12.2 miles: follow odometer and route book closely. Also watch for our "Badwater Parking Zone" signs.			
	2000' Elevation sign on L. (55 MPH)	73.3	2000	
	Darwin Falls turnoff on L. / "Rock Slide Area" sign on R.	73.7	2500	
	<b>Parking Allowed on R. in gravel pullout with yellow left arrow (1.8 from PSR)</b>	74.5		MM 53.5
	<b>Parking Allowed on R. in small gravel pullout on right (3.4 from PSR)</b>	76.1		
	3000' Elevation sign on L. (end parking allowed zone)	76.2	3000	
	<b>Parking Allowed on R. in large gravel shoulder on right (4.7 from PSR)</b>	77.4		
	<b>Parking Allowed in large gravel pullout on L. before left curve (5.3 from PSR)</b>	78		
	3rd Marathon at 25 MPH sign with sharp left curve arrow	78.6	3400	MM 48.5
	4000' Elevation sign on L.	80.55	4000	
	Father Crowley's Point on R. (Toilet) <b>Parking Allowed in lot (7.9 from PSR)</b>	80.6	4000	
	Please no sleeping on the ground in parking spaces!			
	<b>Parking Allowed in elevated gravel pullout via small drive on R. (8.7 from PSR)</b>	81.4		
	<b>Parking Allowed in wide gravel pullout on R. (35 MPH) (10.5 from PSR)</b>	83.2		MM 44.8
	Summit (no sign) <b>Parking Allowed in large gravel pullout on R. (12.2 from PSR)</b>	84.9		
	65 MPH sign on right, just beyond parking zone	85		
	Support vehicles may resume parking wherever it is safe to do so from here onwards.			
	Death Valley National Park sign on L. (65 MPH)	85.4	4200	
	Saline Valley Rd. on R. (actual DVNP boundary)	86.4	4800	
	"Adopt a Highway" sign on R.	88.6		MM 39.5
	Darwin turnoff on L.: Time Station #4 on Left before turnoff	90.6	5050	MM 37.5
	All racers must pass TS4 before 500am, Wednesday morning			
	Gravesite on right (white cross)	96.8	4100	
	"Rock Slide Area"	99.8		
	One hundred miles! (3' wide gray stripe across road with culvert under road)	100	4050	MM 28*
	* MM 28 is exactly at the 100-mile mark, but is on the LEFT side of the road, facing the opposite direction.			
	4000' Elevation sign on R. before "Gunsite Notch" (Cell Service Begins)	102.2	4000	
	Jct. Hwy 136 & Hwy 190: Go straight / north onto Hwy 136 "Lone Pine 19mi"	103.4	3935	

LANDMARK	Dist. (MI)	Ele. (FT)	MARKER
4th Marathon	104.8	3800	MM 16.5
"100 Sulfate Road" sign	106.5		
Keeler City sign at Cerro Gordo Rd. on R.	108.1	3610	
Adopt-a-Highway sign on R. after solar panel array	109.1	3605	
<b>SOFT SHOULDERS NEXT FOUR MILES: BE CAREFUL! DO NOT GET STUCK!</b>			
Dolomite Loop Road on R.	113.2	3600	
Dolomite Loop Road on R.	117.5	3510	
Cross Owens River: View of Whitney Portal Rd. is straight ahead!	118.3	3500	
Jct. Hwy 136 & Hwy 395: Go Right / North	121	3696	
<b>Runners may run on right side of road into and through Lone Pine: stay well away from traffic lane.</b>			
<b>WARNING: SPEED LIMITS DROP TO 25mph as you pass through town!</b>			
Comfort Inn on R. (45 MPH)	121.1		
Chevron / Lee's Frontier Deli / Mini Mart (Great sandwiches!) on L.	121.3		
Best Western on R. (35 MPH)	122		
Lone Pine City Limits sign on R. (25 MPH)	122.3		
McDonald's on L.	122.6	3610	
Dow Villa on R.: Time Station #5 & Medical HQ	122.7	3610	
<b>All racers must pass within 42 hours of their individual wave start!</b>			
<b>All racers with time penalties must "check in" and serve penalty time here before continuing.</b>			
Portal Road (the only traffic light in Lone Pine): Go left	122.8	3610	
Tuttle Creek turnoff on L.	123.3	3770	
<b>WARNING: Park and Drive Properly! NO slow driving; NO stopping in roadway!</b>			
Los Angeles Aqueduct	123.4	3855	
Lone Pine Creek	124.5	4200	
Movie Flat Road on R.	125.5	4590	
<b>WARNING: Park and Drive Properly! NO slow driving; NO stopping in roadway!</b>			
Lone Pine Creek	125.7	4800	
Horseshoe Meadow turnoff on L.	125.9	5000	
Cuffe Ranch turnoff on R.	127.1	5100	
<b>WARNING: Park and Drive Properly! NO slow driving; NO stopping in roadway!</b>			
Whitney Vista Drive on L.	127.4		
Olivas Ranch Road on L.	128.4	5300	
"Entering Active Bear Area"	129.2		
<b>WARNING: Park and Drive Properly! NO slow driving; NO stopping in roadway!</b>			
Lone Pine Campground on L.	129.3	5700	
Lone Pine Creek	129.6	6000	
"Inyo National Forest" sign on R. (Sign was missing in May, 2015)	129.8	6400	
5th Marathon at Indian Creek Rd. on R.	131	7000	
<b>Time Station #6 in Large gravel pullout on R.</b>	131.1	6890	
Road makes a 180-degree switchback to L.	132	7215	
Vista Point on Left at large gravel pullout	132.8	7400	
"Campsites 39-44" and "Whitney Portal Recreation Area" signs	133.7	7700	
<b>WARNING: Park and Drive Properly! NO slow driving; NO stopping in roadway!</b>			
Meysan Lakes trailhead on L.	133.9	8035	
Family Campground on L.: <b>Support vehicles should drive ahead to park!</b>	134	8100	
Overflow Parking Lot on L.	134.6	8200	
Finish Line of the World's Toughest Foot Race: <b>Congratulations!</b>	134.7	8360	

Mile Markers (MM) noted are on R. side of road and within 2/10 of a mile of their stated location. For reference only. Official distance is 135.0 miles. Remember all car odometers have error. Distances above were GPS-measured and are accurate in a relative sense.

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**LONE PINE: QUICK REFERENCE TO THE MOST POPULAR PLACES FOR BADWATER FOLKS**

Lone Pine is located at Mile 122 of the Badwater 135 race route and is an important hub of activity before, during, and after the race. Located at 3727 feet (1136m) at the foot of Mt. Whitney and with a population of just over 2000 friendly people, it is a wonderful and appealing destination year-round and particularly important to the success of the Badwater 135.

Lone Pine meets every need, from great food to comfortable hotels, plus all enjoy the Post-Race Get-Together at the school, followed later by the traditional social hour(s) at Jake’s Saloon. We hope you enjoy the town, spend lots of money there, and let everyone know how much you enjoy racing in their back yard!

Many Badwater 135 runners and crews buy race equipment and supplies at True-Value Hardware or Whitney Portal Hostel and Store, groceries at Joseph’s Bi-Rite, purchase moderately priced gas in town, and/or excellent coffee, snacks, and sandwiches at Lone Star Bistro, get an excellent meal at The Grill or enjoy fine dining at Seasons Restaurant.

During the race, many support teams will go into town to pick up coffees and more at Lone Star Bistro, pizza from The Pizza Factory, to-go food from The Grill or Lee’s Frontier Deli, or for ice, water, & groceries.

**Motels / Hotels (Not a complete list! See LonePineChamber.org for more listings!)**

- Best Western Frontier Hotel**  
1008 S Main Street 760-876-5571
- Comfort Inn**  
1920 S Main Street 760-876-8700
- Dow Villa Motel**  
310 S Main St (*Race HQ*) 760-876-5521
- Portal Motel**  
425 S Main St 760-876-5930
- Whitney Portal Hostel (and Store)**  
238 S Main St 760-876-0030

**Popular Eateries**

- Lone Star Bistro** at 107 N Main St (Coffee drinks, sandwiches, pastries, ice cream, smoothies, and such, plus WiFi. Very popular with PCT hikers.)  
760-876-1111 Open 7am-5pm daily
- The Grill** at 446 S Main St. (Located on the southern end of the Dow Villa parking lot. Great food and great location!)  
760-876-4240 Open 7am-9pm daily

- Alabama Hills Cafe** at 111 W Post S  
760-876-4675 Open 6am-2pm daily
- Pizza Factory** at 301 S Main St  
760-876-4707 Open 11am-10pm daily
- Season’s Restaurant** at 206 S Main St  
760-876-8927 Open 5pm-10pm daily
- Jake’s Saloon** at 119 N Main St (Many runners and crews socialize here after attending the official post-race pizza party at the Lo-Inyo Elementary School at the conclusion of the race!)

**Groceries, Gas & Mini-Mart, Outdoor Outfitters, Hardware**

- Whitney Portal Store and Hostel** at 238 S Main St  
760-876-0030 Open 7am-9pm daily in July
- Elevation Sierra Adventure** at 150 S Main St  
760-876-4560 Open 9am-630 or 7pm daily
- Joseph’s Bi-Rite Market** at 119 S Main St  
760-876-4378 Open 8am-9pm daily
- Gardner’s True Value Hardware** at 104 S Main St  
760-876-4208 Open 8am-6pm, Mon-Sat
- L.P. Chamber of Commerce** at 120 S Main St  
760-876-4444 Open 830am-430pm daily
- Chevron & Lee’s Frontier Deli** at 1900 South Main St (This is the last business on the west side of the road on the far southern end of town. Many crews call ahead to order sandwiches as they approach town, or if making a quick run into town from the race route.)  
760-876-5844 Gas 24/7; Deli closed 2-4am only
- Exxon-Mobil & AM-PM** at 380 North Main St  
760-876-4073 Open 24 Hours a Day



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# THE DANGERS OF RUNNING IN THE HEAT

By Jason Hodde, MS, ATC/L

Running in hot weather can pose many dangers to ultrarunners. Although most runners are aware of the dangers of running for prolonged distances in hot and humid weather, many are also inadequately prepared for the intense stress placed on the body during these hot weather runs.

Scott Jurek takes one of many ice baths in 2006.

In July 2002, I participated in the 25th anniversary of the Badwater Ultramarathon, a 135-mile trek from the lowest place in the continental United States (Badwater Basin), through Death Valley National Park, and to the foot of Mount Whitney, the Whitney Portals, at an altitude of 8,360 feet (2,548 meters). The run was held in the middle of one of the most severe heat waves southern California has ever seen. In preparation for the run, I made sure my crew was aware of the signs and symptoms of heat illness, as well as how to treat me should problems occur. Here are some of the dangers of ultrarunning in the heat, and preventative measures that can be taken to avoid potential problems.

## The Heat Index

The heat index is the apparent temperature felt by the body due to the combined effects of actual temperature and humidity. Most people understand that as the air temperature goes up, so does the heat index, but humidity also plays a role. As the humidity rises, the body is unable to efficiently evaporate the sweat it produces. Therefore, the perceived temperature is much higher than the actual air temperature. The loss of cooling efficiency thus makes exercise extremely dangerous.

Although it is convenient to use a single number to describe the apparent temperature your body feels, keep in mind that heat and humidity affect everybody differently. Several assumptions are made to calculate the heat index measurements in the table below. Specifically, the heat index assumes the body to be:

- 5' 7" (170 cm) in height
- 147 pounds (67 kg) in weight
- Caucasian
- At 98.6° F (37° C) body temperature
- Clothed in long pants and a short-sleeved shirt
- In shade

- Walking at a speed of 3.1 mph (5 kph)
- In a breeze of 6 mph (10 kph)
- Not dripping with sweat

Relative Humidity	Air Temperature (Degrees F)										
	70	75	80	85	90	95	100	105	110	115	120
	Heat Index										
0%	64	69	73	78	83	87	91	95	99	103	107
10%	65	70	75	80	85	90	95	100	105	111	116
20%	66	72	77	82	87	93	99	105	112	120	130
30%	67	73	78	84	90	96	104	113	123	135	148
40%	68	74	79	86	93	101	110	123	137	151	
50%	69	75	81	88	96	107	120	135	150		
60%	70	76	82	90	100	114	132	149			
70%	70	77	85	93	106	124	144				
80%	71	78	86	97	113	136	157				
90%	71	79	88	102	122	150	170				
100%	72	80	91	108	133	166					

## Heat Illnesses

There are three major heat illnesses—and all of them can be exacerbated by ultra distance running and prematurely end an ultrarunner's race. In all cases, the main reason that runners experience heat illness is dehydration. If you replace lost fluids and electrolytes and are able to train your body to process a high volume of fluid in a short period of time, you significantly decrease the risk of experiencing these race-ending medical emergencies.

**Heat cramps:** Exercising in hot weather can lead to muscle cramps, especially in the legs. This is usually caused by imbalances or deficiencies in your body's electrolyte stores. A cramp is characterized by sharp, stabbing pain in the muscle and rarely works itself out on its own. On a training run earlier this year in Death

Valley, many runners complained of cramps in their legs; I suffered from cramps in my diaphragm and had difficulty breathing for more than an hour! Cramps become less frequent with heat training, but for those of us unaccustomed to such extreme conditions, maintaining adequate hydration and electrolyte balance is critical to avoiding them. To eradicate cramps, you should stop running, drink fluids containing electrolytes, cool your body with wet towels, and immediately get out of the sun.

**Heat exhaustion:** Losing fluid and electrolytes through sweat leads to dizziness and weakness if the lost fluids are not replaced. Heat exhaustion is characterized by a moderate rise in body temperature, dizziness, nausea and vomiting, and a headache. You might also experience weakness, lack of coordination, heat cramps, heavier than usual sweating accompanied by moist and cold skin, and “goose bumps.” Your heart rate may rise and you won’t be able to run as fast due to fatigue. Many runners—even those who are well trained—will suffer from mild heat exhaustion after running for several hours in hot and humid conditions. If you experience the signs of heat exhaustion, stop running immediately and drink fluids containing electrolytes, cool your body with wet towels, lie down and elevate your feet a few inches above your heart, and immediately get out of the sun. Since heat exhaustion can lead to the most severe form of heat-related illness, heat stroke, seeking prompt medical attention for heat exhaustion is also highly recommended.

**Heatstroke:** In extreme cases heat can upset the body’s thermostat, causing body temperature to rise to 105 degrees F or higher. This is a life-threatening situation that requires immediate medical attention. While it is common for untreated heat exhaustion to rapidly progress to heatstroke, heatstroke can (and does) occur without the signs of heat exhaustion being apparent. Symptoms of heatstroke include lethargy and extreme weakness, confusion and odd or bizarre behavior, disorientation and unconsciousness. Because heatstroke is a complete failure of the body’s temperature regulation system, sweating ceases and the skin becomes hot and dry. Convulsions or seizures can occur as the brain begins to shut down. Coma and death are also possible in extreme cases. Heatstroke is a medical emergency that requires immediate medical attention. Call the emergency response system immediately! Get the runner out of the sun, remove all clothing, and immediately rub their body with ice or immerse the runner in cold water.

By staying properly hydrated and recognizing the early warning signs of heat illness, as a runner you can prevent a heat-related problem from becoming a life-threatening situation. As a volunteer, recognizing these heat-related dangers may one day help you save the life of a runner who has underestimated the intensity of the surroundings.

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# THE DANGERS OF HOT WEATHER RUNNING

## *DEHYDRATION, HEAT CRAMPS, HEAT EXHAUSTION, HEATSTROKE & HYPONATREMIA*

By Claudio Piepenburg  
(Originally published by Road Runner Sports)

*Michael Jimenez gets a cooling spray from his perfectly placed “pacer,” Peter Fish.*

Running in hot weather can pose dangers to runners. Particularly dangerous is racing in hot, humid summer conditions. Here’s how to protect yourself from these five serious (and potentially fatal) conditions.

### **Dehydration**

Dehydration is not limited only to the summer months, although it’s probably more likely to occur during that time. Many physicians believe that most people are in a constant state of dehydration. Since coffee, tea, soda and alcohol act as a diuretic, anyone who drinks these fluids on a daily basis, and doesn’t drink at least an equal amount of water, will probably be dehydrated. If the person is physically active, the potential for dehydration is even greater.

Working out in hot, humid conditions promotes sweating, which in turn can cause dehydration. Sweating is good for you because it cools your body, but when you lose too much water you become dehydrated. If you’re already slightly dehydrated, sweating will

only make it worse. It’s important to maintain an adequate fluid intake all the time. Don’t expect that you can make up for several days of not drinking enough by downing two cups of sports drink before your next long run or race. It’s important to keep hydrated all the time. Once you start to feel thirsty, it’s too late.

The average (sedentary) person needs a minimum of eight 8-ounce glasses of fluid a day. Runners need more: anywhere from four to eight quarts of fluid. That translates to at least sixteen 8-ounce glasses daily. Remember that diuretics don’t count! Drink water and sports drinks, and if you don’t have to worry about calories, fruit drinks or juice.

Two hours before your daily summer workout or a race, you should drink 16 ounces of fluid. Then ten minutes or so before you start to run, drink another one or two cups of water or sports drink. Drinking early and drinking often is the key. During a race you should drink six to twelve ounces of fluid every 15-20 minutes. If the weather is very hot, you may need to drink even more. Training in warm weather, you should drink at least

every 35 to 40 minutes. (Remember you will have already had two 8-ounce glasses before you started.) If you're running a race shorter than 30 minutes, you probably won't need any water other than what you drank before the start. The same goes for the last few miles of a longer race. If you're racing or training for longer than an hour, drink sports drinks as opposed to strictly water.

Start drinking immediately after finishing a run, no matter if it was a race or a workout. Minimum is 16 ounces for every 30 minutes you ran. If you tend to sweat a lot, you'll need more. Weigh yourself after you've run. Drink at least 16 ounces of fluid for every pound you lose through sweating.

By monitoring the color of your urine you can tell if you're hydrated. It should be pale yellow or even clear. If it isn't, you need to drink more fluids. It's important that you retain the fluid, so be careful it you're urinating every fifteen or twenty minutes. To restore your fluid balance, eat something salty (a bag of pretzels, salted nuts, crackers or potato chips), then drink a sports drink. The salt will make you thirstier, so you'll take in even more fluid and urine production will decrease.

### Heat Cramps

Have you ever seen a runner bent over at the side of the road massaging their calves during a race? Chances are that he or she had heat cramps. Heat cramps are very painful (envision someone stabbing a knife deep into your muscles!) and rarely "work themselves out". The cramps occur because you've lost minerals through sweating and dehydration. Once you've reached the point of heat cramps, it's too late to try to replace fluids on the run. To make the cramps go away you should:

- Stop running
- Drink fluids immediately. The fluids should include sports drinks as well as water
- Massage the muscles once the pain begins to subside
- Cool your body with wet towels
- Get out of the sun

### Heat Exhaustion

Heat exhaustion is a very serious condition that can lead to heatstroke. The symptoms of heat exhaustion are:

- Dizziness
- "Goose bumps" (particularly on the torso and arms)
- Nausea (sometimes accompanied by vomiting)
- Moderate to severe headache
- Weak legs
- Lack of coordination
- Rapid pulse

- Heavy sweating often accompanied by moist and cold skin
- Muscle cramping

If you experience any of these symptoms you must:

- Stop running immediately
- Get medical attention
- Drink large amounts of fluids, including sports drinks
- Get out of the sun
- Lie down and elevate your feet above your heart
- Loosen your clothing

### Heatstroke

Heatstroke can be fatal. Unfortunately runners will sometimes ignore the symptoms of heat exhaustion (particularly in races longer than 10K) and will continue to push themselves until they're nearing a total thermoregulatory breakdown. The symptoms of heatstroke are very similar to those of heat exhaustion, but rapidly progress to:

- Disorientation
- Weakness in the legs to the point that the runner may fall
- Strange behavior (including flailing with the arms and shoving)
- "Fuzzy" thinking
- Rapid pulse
- Cessation of sweating and hot/dry skin
- Body temperature that may reach 104 degrees or higher
- Lack of consciousness
- Convulsions or seizures
- Coma

Someone suffering from heatstroke needs immediate medical attention. They should be moved out of the sun, cooled by either rubbing their body with ice or immersing them in cold water and given fluids intravenously.

### Hyponatremia

Within the last few years the condition known as hyponatremia has begun to attract the attention of sports medicine physicians, exercise physiologists, and the medical directors at some of the larger marathons around the country. Hyponatremia has been called water intoxication because of the symptoms it produces. According to Dr. Tim Noakes, Professor of Exercise & Sports Science Director at the University of Cape Town, "...a person with hyponatremia looks like he or she is mildly drunk. They can't concentrate normally...they forget what you were talking about and start to concentrate elsewhere."

## THE DANGER OF HOT WEATHER RUNNING

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*Noora Alidina receives fluids for inside and out during the 2007 race from her husband and daughter.*

Hyponatremia occurs when the body becomes dangerously low in sodium. It's caused when you literally take in too much water. Although scientists have known about it for a long time, it has only been in the last few years as more runners have been competing in marathons that it has become a concern. According to Dr. Noakes, fluid has to be ingested at high levels for several hours for hyponatremia to occur. He suggests that a runner would have to be drinking water regularly for at least four to six hours to develop the condition. So runners taking four to six hours or more to run a marathon are at particular risk.

Unfortunately, symptoms of hyponatremia tend to mimic those of severe dehydration and/or heat exhaustion. By giving the athlete more water to drink the hyponatremia becomes worse, as more and more sodium is flushed out of the system. If a runner with hyponatremia is given fluids intravenously, they can suffer a fatal reaction. Dr. Noakes and other sports medicine professionals recommend that physicians and other medical personnel at road races be alert for the signs of hyponatremia. One of the earliest symptoms is a craving for salty food.

Although hyponatremia is rare, it's wise to be aware that it can occur, particularly if you're running a marathon in unusually hot

weather. Hyponatremia serves as a reminder that water is good, but don't forget sports drinks, which replenish your body with the sodium, potassium and other trace minerals you lose through sweat. It's worth repeating: if you're going to be running (or racing) for longer than an hour, you should be drinking a sports drink as well as water.

### ***About the author:***

*Claudia Piepenburg has been running for 21 years and is the current editor for Peak Run Performance. She holds or has held state age-group records in Michigan, North Carolina, Florida, Tennessee and Virginia. In 1990, she was ranked 18th fastest masters woman in the world and 8th fastest masters woman in the U.S. in 1990 and 1991. She competed in the 1988 Olympic Marathon Trials, was 20th woman overall in the 1987 Boston Marathon and women's winner of the 1986 Virginia Beach Marathon. If you have questions or comments for Claudia, she can be reached at [cpiepe@roadrunnersports.com](mailto:cpiepe@roadrunnersports.com).*

## MEDICAL RISKS IN THE BADWATER ULTRAMARATHON



*2011 champ Oswaldo Lopez stays cool during the 2013 race.*

This 135 mile race is probably the most physically taxing competitive event in the world. It also has considerable medical risks. All runners and crews must appreciate these two facts both before and during the race.

Heat illness and heat stroke are serious risks. These can cause death, renal shutdown, and brain damage. It is important that runners and crews be aware of the symptoms of impending heat illness. These include: nausea, vomiting, headache, dizziness, faintness, irritability, lassitude, weakness, and rapid heart rate. Impending heat stroke may be signaled by a decrease in sweating and goose bumps, especially over the chest.

Heat stroke may progress from minimal symptoms to complete collapse in a very short period of time. Deaths and renal shutdown (kidney failure) have been reported in other ultra-marathons. Adequate conditioning is mandatory.

Adequate fluid and electrolyte intake is the most important preventative for heat illness. Runners may well require dozens of gallons of fluid during this race. Proper pace is crucial.

The high altitude plus exertion can also produce various degrees of altitude sickness. This can lead to severe lung and brain swelling, and even death. The main treatment is rest, and especially to get to a lower altitude.

Blisters are also a problem on this course, with pavement temperatures perhaps reaching 200 degrees. Proper foot care & preparation are essential for having a successful race.

Remember, you are responsible for your well-being while participating in this race. There are no aid stations. Know where your limits are and know your body. Your acceptance of invitation to this race declares that you are aware of the risks & potential health problems.

HEAT EXHAUSTION	OR	HEAT STROKE
Faint or dizzy		Throbbing headache
Excessive sweating		No sweating
Cool, pale, clammy skin		Body temperature above 103° Red, hot, dry skin
Nausea or vomiting		Nausea or vomiting
Rapid, weak pulse		Rapid, strong pulse
Muscle cramps		May lose consciousness
<ul style="list-style-type: none"> <li>• Get to a cooler, air conditioned place</li> <li>• Drink water if fully conscious</li> <li>• Take a cool shower or use cold compresses</li> </ul>		<p><b>CALL 9-1-1</b></p> <ul style="list-style-type: none"> <li>• Take immediate action to cool the person until help arrives</li> </ul>

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## RACE RULES

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### GENERAL RACE RULES

1. There are three starting times for the 2018 Badwater Ultramarathon (800pm, 930pm, and 1100pm on July 23, 2018), but all racers in all groups are competing in the same race. Runners must check in at the start line, ready to race, 30 minutes prior to their start time.

2. Starting Groups are assigned by the race director and are non-transferable. Split times will be collated throughout the race to maintain overall standings. There are only two divisions: men's and women's. The racer to arrive at the finish line in each division with the lowest overall time, based on their starting time, will be considered the winner.

3. The race number must be worn by the racer on the front of the body, unmodified, unfolded, and visible at all times during the race. It may not be worn on the head or hat. Bib numbers must also be worn by any pacer / crew member who is running along with his or her racer.

4. The GPS tracker provided by the race organizers must be worn by the runner, as directed (not worn on the shorts, nor carried in a pocket or in a hand-held bottle pocket.). When the runner has a pacer with him or her, that pacer may wear the tracker instead of the runner. However, the tracker must stay on or immediately near the racer at all times during the race; it must NOT travel along the race course within the support vehicle. The tracker must be returned to the race staff upon finishing the race, or when the racer withdraws; a \$500 fee will be charged if the tracker is lost. A minimum one-hour time penalty will be assessed for any runner who doesn't properly use the assigned GPS tracker.

5. All runners MUST have passed, and be proceeding beyond, the following locations along the race route within the specified time cut-offs.

- Mile 50.5 (2000' Elevation Sign, located 8.6 miles beyond Stovepipe Wells): All runners must pass by 1000am, Tuesday morning (regardless of starting wave).

- Mile 72 (Panamint Springs Resort): All runners must pass by 800pm, Tuesday night (regardless of starting wave).

- Mile 90 (Darwin Turn-Off): All runners must pass by 500am, Wednesday morning (regardless of starting wave).

- Lone Pine at Mile 122: Within 42 hours. Additionally, beyond the Darwin Checkpoint, if it becomes clear that a runner will not be able to finish the race officially within the 48-hour time limit, that runner may be forced to withdraw from the course and the race prior to the actual conclusion of the 48 hours.

6. Runners who fail to meet the specified time cut-offs along the course must withdraw from the race course; similarly, runners who are disqualified from the race must also withdraw from the race course. Such runners may not continue on the race course "unofficially" or after simply removing their bib number. Crew members from withdrawn runners must also depart the race course, unless they formally join another runner's crew.

7. The clock does not stop for any reason until the race course officially closes 48 hours after each designated official start time. All racers must leave the course by the 48th hour beyond their start time: Finishing, or remaining on the race course with the intent to continue, is not allowed after 48 hours.

8. Running must always be single file, on the far left side of the road or off the left side of the road, facing traffic (pacers, too).

9. Racers must make their presence known at all Time Stations located along the route.

10. As it has since 1989, the race ends at Mt. Whitney Portal. If any entrant or crew member chooses to hike to the summit, official race logos must not be worn and the appropriate permits must be obtained from the Forest Service.

11. Racers, crew, and staff must not litter, mar, or pollute the landscape or environment.

12. All racers, crew and staff must display courtesy, good taste, decorum, and sportsmanship at all times. Nudity is specifically not allowed.

13. All racers, crew and staff must display courtesy, good taste, decorum, and sportsmanship at all times. Nudity is specifically not allowed.

### Legal and Bureaucratic Issues

1. "Badwater®" is a federally registered trademark and may not be used in any commercial or promotional manner except under license from AdventureCOPRS, Inc. In particular, t-shirts (such as for crew members) may not state "Badwater" or feature any version of the race logo.

2. All applicants must be a minimum of 19 years in age when submitting an application to race.

3. All racers must follow and complete the entire application and entry process, filling out all forms and paying all necessary fees.

4. Each Runner's Support Crew shall have a designated Crew Chief and his or her name and email address must be provided to the race organizers at least six weeks before the race. All crew chiefs must study all race rules and information about supporting a runner and organizing and overseeing a support team, as well as study all email correspondence sent by the race organizers. Each Crew Chief is to be primarily responsible for managing the support crew, maintaining adherence to all race rules, state and local laws, and common sense, as well as overseeing the Health and Safety of all crew members and the runner at all times.

5. The names and email addresses of all support crew members must be provided at least four weeks before the race. All crew members must study all race rules and information about supporting a runner and organizing a support team, as well as study all email

correspondence sent by the race organizers.

6. Each runner is strongly encouraged to bring a nurse, EMT, MD or other first responder or medical professional on his or her support team.

7. Each runner is strongly encouraged to bring at least one crew member or Crew Chief who is a veteran runner, crew member, or Crew Chief with Badwater 135 experience.

8. Each racer is strongly encouraged to carry a walkie-talkie for communicating with his or her support crew. This is particularly encouraged for the Father Crowley / Panamint Springs ascent, between Panamint Springs at Mile 72.7 and Panamint Pass at Mile 84.9.

9. All racers and all crew members must sign the Accident Waiver and Release of Liability / Release of Name and Likeness. Each entrant must also bring the properly completed Check-In Form and Medical History Form to Runner Check-In.

10. All race vehicles must meet the minimum requirements of property damage and personal injury liability automobile insurance for the State of California. All vehicle drivers must be fully licensed.

11. All racers and all designated Crew Chiefs must attend Racer Check-In, while all crew members are encouraged to attend. Additionally, all racers and their designated Crew Chiefs ONLY must attend the Pre-Race Meeting. Those racers and/or their Crew Chiefs who do not complete the scheduled check-in and attend the Pre-Race Meeting will not be allowed to participate. Attendance is mandatory: no exceptions will be made.

12. All racers must be willing to submit to a drug urine test before (at any point prior to the race, after being officially confirmed for entry), during (at any time), or after the race (up to 90 days after the conclusion of the race). If any WADA banned substances are detected, the racer will be disqualified from competition, listed as **DISQUALIFIED FOR DOPING** in the final standings of the race, and banned for life from any AdventureCORPS event. Refusal to submit a urine specimen upon demand will also result in the racer being disqualified from competition, being listed as **DISQUALIFIED FOR DOPING** in the final standings of the race, and being banned for life from any AdventureCORPS event. Additionally, any Badwater 135 finisher who fails a drug test within 36 months after competing in any edition of the Badwater 135 will be retroactively disqualified from any and all previous Badwater 135 races, removed from all Badwater 135 race results, as well as banned for life from any AdventureCORPS events.

13. All entrants must bring one U.S. dollar (or more) in a sealed envelope to Racer Check-In. Please write the runner number on the envelope. This envelope will not be returned and the money will be donated to charity.

14. During Racer Check-In, all entrants must display a minimum

of four satisfactory reflective vests - or 360 degree reflective belts - and eight blinking red lights - which will be worn and utilized by the runner and crew during nighttime periods of the race. Runners without satisfactory quality, or quantity, nighttime safety equipment will be required to purchase additional gear at that time, IF any such gear is available.

15. During Racer Check-In, all racers must display one OSHA Class 2 reflectivity garment for each crew member to wear during the day, and one OSHA Class 3 reflectivity garment for each crew member to wear during the night (or one OSHA Class 3 reflectivity garment for each crew member to wear 24 hours a day). See point 3 under "Support Crew & Assistance" below.

16. During Racer Check-In, all racers must show that they have at least eight personal portable toilet products such as the Biffy Bag for use on the race course wherever toilets are not available. (Zip-lock bags or dog poop bags are NOT acceptable.) Such products must be used discreetly and must be disposed of properly after use. Public and/or unsanitary defecation by racers or crew members will result in disqualification of the racer.

17. All racers and crew must pay the Death Valley National Park Entrance Fee for each of their support vehicle(s). Proof must be brought to Runner Check-In. Runners will not be allowed to check-in for the race without proof of paying the Park Entrance Fee.

18. No commercial photography or videography may be conducted at the race without the specific written permission of AdventureCORPS, Inc. Additionally, the National Park Service, California Department of Transportation and/or the U.S. Forest Service may also require payment of a filming fee and signature of a filming agreement. Also, bona fide media must contact AdventureCORPS, Inc. to request a media credential.

#### 19. PHOTO / VIDEO REGULATIONS WITHIN DEATH VALLEY NATIONAL PARK

The National Park Service regulates photography and videography that is considered commercial in nature. (The NPS had jurisdiction over the first 85 miles of the race route; the final 50 miles of the race route are outside DVNP jurisdiction. Therefore photos and videos shot over the last 50 miles of the race route – Darwn, Keeler, Lone Pine, Portal Road, and finish line – are not governed by NPS regulations.) In simple terms, this means the following:

- Photo / video for personal use, including posting to runners' and crew members' social media accounts, websites, and similar is not regulated, so long as it is conducted in a safe manner and according to the rules of the race, the motor vehicle code, and the NPS special event permitting guidelines. No permit is required for personal use.

- Photos / video which is being shot to provide to sponsors of runners to be used by the sponsors in a promotional purpose IS regulated and may require a Commercial Filming Permit. Said

## RACE RULES

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permits have an up-front \$210 fee and may likely also require Ranger Monitoring. Any monitoring costs would likely be fractionally shared by all those who are required to have a Commercial Filming Permit, and will be billed after the event.

–If you or your crew members will be shooting photos and/or video to provide to your sponsor(s), you likely require a Commercial Filming Permit and thus should contact the Special Park Uses office at Death Valley National Park at least 30 days before the event to inquire.

–All those who are required to obtain a Commercial Filming Permit, as well as all bona fide media, must also attend the Media Check-In and Briefing prior to the race.

### Support Crew and Assistance

1. Each racer must be accompanied by a support crew comprised of no more than one four-wheeled motor vehicle and at least two and no more than four crew members - at least two of whom are legally licensed to drive and at least one of whom can speak English - at all times. Race entrants may have no more than one support vehicle and no more than four crew members in total on the race course.

2. “Unofficial” or extra crew members and “family cheering squads” may only be present in Lone Pine and at the finish line; they may not drive on the race course except between Lone Pine and the finish line and such drive must be made without stopping en route. A secondary vehicle may not be used to shuttle crew members or supplies to and from the runner and support vehicle, except within Lone Pine.

3. Each racer must have his or her own personal support crew and vehicle; crew and support vehicles may not be shared, except informally in the spirit of the event, i.e., crews may lend assistance to other racers or crews. Exceptions may be made under some circumstances for married couples or others who have a history of racing together and would like to race this event in this manner. Please inquire.)

4. Regulations for sporting events held within Death Valley National Park require that ALL support crew members (except those actively pacing their racer) wear a minimum of OSHA Class 2 (or higher) high-visibility clothing during daylight hours, and OSHA Class 3 high-visibility clothing during nighttime hours (or OSHA Class 3 high-visibility clothing 24 hours a day). These regulations may ONLY be met by wearing the special garments developed by ZZYXXXZ in collaboration with BADWATER and which can be pre-ordered for pick-up in Death Valley prior to the race, OR by wearing certified OSHA Class 2 (in daytime) and Class 3 (at nighttime) vests / jackets, such as those worn by highway workers. Running-type reflective vests, such as those by Nathan Sports, do NOT meet OSHA Class 2 or Class 3 requirements.

5. Racers and Pacers may dress as they choose during daylight, and must wear 360 degree reflectivity (such as runner-type reflective vests by Nathan Sports) and front and rear blinky lights at night.

Racers and Pacers are not required to wear the specific OSHA Class 2 or OSHA Class 3 garments that are required for all crew members, but that level of high-contrast reflectivity and visibility is highly recommended for racers and pacers, too.

6. In addition to the requisite reflective garments, all crew members, pacers, and racers must wear front and rear blinky lights whenever they are outside of a motor vehicle during nighttime.

7. Beginning immediately at the start line, racers must not run abreast with other racers or with pacers, except when passing a slower racer, which must be done quickly. All running must be single-file. Additionally, pacers may not run in front of, even slightly, racers at any time.

8. Runners must progress under their own power without drafting, helping, pushing, supporting, or any other type of physical assistance. Runners may not use walking sticks, ski poles, or the like. So-called “cooling vests” or other types of artificial / technological cooling systems may not be worn or utilized by race entrants while making forward progress on the race course. Crewmembers may not carry an umbrella or shade cover for a runner while he or she is moving forward on the race course.

9. Any crew member running along with their racer is considered a pacer and must wear the pacer’s designated bib number (provided at Racer Check-In). Runners may not be accompanied by more than one pacer at any given time while making forward progress on the race course. Additional crew members that are handing off supplies, or otherwise providing aid, to the runner and/or pacer must be off the roadway at all times (i.e. left of the white line on the shoulder) and may not run along with the runner. To be clear: if a runner is moving forward on the race course, NO MORE THAN ONE crew member may also be moving with, or near, the runner at the same time. Time penalties will be assessed for all infractions.

10. No more than two crew members, including a pacer if one is present, may be on the other side (racers’ side) of the highway at any given time.

11. Crew members, other than pacers, may never cross the roadway during the entire Father Crowley / Panamint Pass climb (a 12.2-mile stretch from Time Station 3 at Panamint Springs Resort at Mile 72.7 to “Panamint Pass” at Mile 84.9), as described above. Also, each racer, or racer’s pacer, is strongly encouraged to carry a walkie-talkie for communicating with his or her support crew during this 12.2-mile stretch of the race route. In addition to Badwater race staff, this will also be monitored by National Park Service staff who have the authority to disqualify racers.

12. Racers may not be accompanied by pacers or moving crew members until Mile 42 at the Stovepipe Wells time station. Exception: racers over the age of 65 may utilize a pacer from Mile 3.5 (Natural Bridge turn-off.)

13. Wheeled conveyances (other than a motorized support vehicle), including in-line skates, strollers, and bicycles, are prohibited on

the course at all times. Likewise for hovercrafts and helicopters. Runners accompanied by any such conveyance will be disqualified. (Drones are illegal within Death Valley National Park boundaries.)

14. Crew members may not use illegal drugs, stimulants, or dope, as well as alcohol of any kind, during the race or at any official race events or activities.

**Support Vehicles**

1. The California Motor Vehicle Code, and all local, county, and/or federal laws, rules, and regulations, must be respected at all times. In particular, support vehicle drivers and crews are reminded that phones must only be operated by the driver with a hands-free device; seat belts must be worn by all vehicle occupants at all times while moving, and it is illegal to drive on a highway while displaying emergency flashers. For further information, consult the DMV Code.

2. Support vehicles may not be wider than 78” in width, not counting mirrors, fenders, or bumper which extend beyond the widest part of the actual vehicle body. Small Cars, Minivans, and SUVs are recommended. Oversize SUVs, vans, and trucks, or other types of oversize vehicles are strongly discouraged. Motorhomes, RVs, “Sports-Mobiles,” Sprinter Vans, and all types of Hummers are specifically not allowed. Support vehicles may not pull trailers of any kind.

3. All support vehicles must have their headlights on while driving, 24 hours a day, except as noted in Rule 10 in this section of the rules.

4. All race vehicles must have highly visible signage on the back of the vehicle stating “CAUTION RUNNERS ON ROAD.” Magnetic reusable signs may be ordered from our sign vendor, or one-time use signs will be provided by the race organizers at Racer Check-In.

5. All support vehicles must have their racer’s bib number easily and clearly visible on both sides, the front, and the left rear in digits that are at least 8” (20cm) tall. The background for the racer number signs must be white and the lettering must be black, red, or blue. (STICKY racer bib numbers will be provided to ALL racers at no charge during Racer Check-In. These racer numbers must be displayed on the support vehicle.)

6. Display of the racer’s name is optional, but must be at least 6” (15cm) tall if displayed, with a white background and black, blue, or red letters.

7. Sponsor / Charity names and graphics may be placed on support vehicles on the left and right sides only, not on the front or rear.

8. Vehicle windows may not be blocked or obstructed with any signage, paint, or the like. All vehicles will be inspected in Furnace Creek or Badwater, and no racer will be allowed to start the race who has any vehicle windows blocked. If a racer support vehicle is found with blocked windows during the race, that racer will be forced to stop and wait while the vehicle’s windows are unblocked and signage properly mounted.

9. Vehicles must “leapfrog” the runner at all times. Each “leapfrog” must be at least two miles or more in length. Racers may not be “shadowed” (driving a vehicle at the runner’s speed) and vehicles must not “caravan” (drive together, like a train, at any speed). Driving may never be at the speed of any racer. Driving must be done at the speed of traffic, never slowing down to encourage, talk to, or lend assistance to any racer while moving. All assistance must be provided by pedestrian crew members; handing off of supplies from the vehicle is never allowed, nor is slowing down to speak with or to a racer or other person while moving.

10. Vehicles must be parked completely off the road surface whenever they are stopped (with all four tires right of the white line). The doors on the left side of the vehicle must never be opened into the roadway, even momentarily. All exiting of the vehicle by active crew members must be from the right side of the vehicle; drivers may exit from left but only if space allows for them to do so without their door opening into the roadway. Crew members must not stand on the left side of a parked vehicle (between the road and the vehicle.) Many areas of the route have very little shoulder for parking so care must be taken in choosing stopping places. When stopping/parking, vehicles may not stop on the left side of the road. All stopping/parking must be on the right side of the road, off the roadway. From 700pm to 600am each day (night) of the event, at all times while stopped or parked off the road, support vehicles must have their headlights turned off and emergency flashers turned on.

11. Support vehicles must not park across from parked vehicles on the other side of the road (50 meters in either direction), in order to avoid bottlenecking the roadway.

12. Support vehicles may not stop during the one-mile stretch which begins at Harmony Borax Works at Mile 19.1, while runners pass through the curvy “Harmony Curves” section of Hwy 190. Each support vehicle should wait at Harmony Borax Works long enough to allow the runner to cover the next, mostly uphill mile, then drive ahead (no stopping nor slowing until Mile 20.1).

13. On the Father Crowley / Panamint Pass climb (a 12.2-mile stretch from Time Station 3 at Panamint Springs Resort at Mile 72.7 to “Panamint Pass” at Mile 84.9), support vehicles may only stop at EIGHT designated locations along the route. These are identified in the route book and with signage along the roadway. They are located 1.8, 3.4, 4.7, 5.3, 5.9, 7.95, 10.5, and 12.2 miles beyond Panamint Springs Resort. Except in a legitimate emergency situation, stopping at any other location along this stretch of roadway, even momentarily, will result in the immediate disqualification of the racer associated with the stopped crew. In addition to Badwater race staff, this will also be monitored by National Park Service staff who have the authority to disqualify racers.

**Safety and Medical Issues**

1. Remember, at all times and in all situations, safety is the most important issue. This means safety for racers, crew, staff, and the

## RACE RULES

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general public. The roads are not closed for this event and are, in fact, quite busy with tourist and local traffic.

2. I.V.s (intravenous fluids) are not permitted during the race. If a racer receives an I.V. during the race, for any reason, then that racer is disqualified and must withdraw from the race and the race course.

3. Racers are responsible for both their own and their crew's actions; crews are responsible for both their own and their racer's actions.

4. Always look and listen both ways before crossing the highways. Remember that drivers will not expect to encounter a racer or parked vehicle out on the course. Remember the event is held on public roads. Racers should not cross over the highway more than necessary; crew should cross the highway carefully to bring assistance to their racer (except on the Father Crowley climb as noted elsewhere). Time Penalties or Disqualification will be enforced with a Zero Tolerance Policy towards dangerous crossing of, or behavior on, the roadway.

5. Per National Park Service regulations, racers and crew members may not wear any headset covering the ears, or any earplugs in both ears, unless it is a necessary prosthetic device that aids the hearing-impaired.

6. All entrants and crew must study "Medical Risks in the Badwater Ultramarathon," "Dangers of Running in the Heat," and "The Dangers of Hot Weather Running".

### Leaving the Course or Withdrawing

1. Every inch of the course must be traveled by each racer. In the event of a routing error, e.g., wrong turn, the racer may be driven back to the exact original spot where he/she left the course and continue running from that location. There will be no allowance made for lost time or miles run in the wrong direction.

2. If a racer needs to leave the course via motor vehicle, his/her crew must note the exact location with a numbered stake in the ground. This numbered stake must be visible from the road in both directions. The racer must then resume the race from the same place that he/she left it. The numbered stakes will be provided to all racers at Racer Check-In. Racers may only leave or otherwise drive up or down the course via motor vehicle for medical attention, NOT simply to rest. This must be reported as soon as possible to Race Headquarters or the nearest time station. Racers found in a moving motor vehicle will be disqualified unless they are en route to or from medical care. Focus must be kept on the speedy completion of the course.

3. If a racer withdraws, he/she or his/her crew must contact Race Headquarters or a Time Station immediately. Name, bib#, reason for withdrawal, time of withdrawal, and miles completed must be stated. All racers and crew who drop are encouraged - and expected - to come to the finish line and the post-race party to greet and celebrate with their fellow racers and crews.

4. All Emergency Evacuation costs for participants or crews will be borne by that person or their heirs. The race organizers are in no way liable or responsible for emergency evacuation.

### Awards

1. All racers who begin the event will receive a Badwater 135 race t-shirt, hat, Race Magazine, and a goodie bag with other one-of-a-kind Badwater items and products from the race sponsors, as well as entry into the post-race pizza party (for the racer and up to four crew members). All racers who officially complete the event within 48 hours will receive a finisher's t-shirt and commemorative Badwater 135 buckle.

### Rule Enforcement and Penalties

1. Race rules are designed to provide a safe and fair experience for everyone involved and to help ensure our ability to produce the race again next year.

2. Major rule infractions by racers or their crew, especially those regarding "cheating," will result in immediate disqualification of the racer.

3. Other, lesser offenses will result in the following cumulative time penalties:

- A WARNING may be issued, depending on the nature of the infraction, at the discretion of the race official (A "slash" will be marked on the racer's bib number.)
- First Penalty: One Hour ("X" will be marked on the racer's bib number.)
- Second Penalty: Disqualification

4. Time penalties are imposed by the penalized runner stopping at the final Time Station in Lone Pine to serve his/her time penalty. The race and clock will continue while the penalized racer waits out his/her penalty time. A Race Official will be present to oversee this process. Any racer who is required to serve a time penalty, but does not stop to do so, will be disqualified.

5. The Race Director has the authority, at any time, to overrule any rule or invent a new rule based on extenuating, unforeseen, and/or unusual circumstances and/or to maintain the integrity and fair play necessary for the successful completion, and continuation, of the race. The Race Director has ultimate authority in regards to all rules, their interpretation, and their enforcement. There is no "appeals committee" nor an "appeals process." All entrants in the race, and their support crews, willingly acknowledge this fact, as well as all other race rules, by attending the race in any capacity.

6. In all cases and circumstances, it is the intent, and spirit, of the rules which will govern their implementation and enforcement.

### Finally

Have fun and keep smiling! Remember, you chose to be here!



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## FINISHER DATA ANALYSIS: 1990-PRESENT

### FINISHER DATA ANALYSIS: BADWATER 135 ULTRAMARATHON, 1990-PRESENT

Year	Starters	Finishers	Buckle Cut-Off	Sub 60hr	Sub 48hr	Sub 40hr	Sub 34hr	New Men Record	New Women Record
2017 (PM)	95	75	48 Hours	N/A	79%	52%	16%		
2016 (PM)	97	84	48 HOURS	N/A	87%	55%	25%	21:56:32	25:53:07
2015 (PM)	97	79	48 Hours	N/A	81%	57%	20%		
<b>3 Year Avg</b>	<b>96</b>	<b>79</b>			<b>82%</b>	<b>55%</b>	<b>30%</b>		
2014 (AM)	97	83	48 Hours	N/A	86%	52%	23%		
2013 (AM)	96	81	48 Hours	N/A	84%	39%	23%		
2012 (AM)	96	89	48 Hours	N/A	93%	71%	34%		
2011 (AM)	94	81	48 Hours	N/A	86%	76%	20%		
2010 (AM)	80	73	48 Hours	91%	83%	51%	19%		26:16:12
<b>5 Year Avg</b>	<b>92.6</b>	<b>81.4</b>			<b>86%</b>	<b>58%</b>	<b>24%</b>		
2009 (AM)	86	75	48 Hours	87%	77%	47%	24%		
2008 (AM)	82	75	48 Hours	91%	83%	37%	10%		26:51:33
2007 (AM)	84	78	48 Hours	93%	77%	47%	18%	22:51:29	
2006 (AM)	85	67	48 Hours	79%	62%	24%	13%		
2005 (AM)	81	67	48 Hours	83%	56%	22%	7%	24:36:08	
<b>5 Year Avg</b>	<b>83.6</b>	<b>72.4</b>			<b>87%</b>	<b>71%</b>	<b>14%</b>		
2004 (AM)	72	57	48 Hours	79%	58%	28%	8%		
2003 (AM)	73	46	48 Hours	63%	42%	14%	5%		
2002 (AM)	78	58	48 Hours	74%	47%	12%	4%		27:56:47
2001 (AM)	71	55	48 Hours	77%	46%	14%	7%		
2000 (AM)	69	49	48 Hours	71%	41%	16%	12%	25:09:05	29:48:27
<b>5 Year Avg</b>	<b>72.6</b>	<b>53</b>			<b>73%</b>	<b>47%</b>	<b>7%</b>		
1999 (AM)	42	33	48 Hours	78%	60%	26%	12%	27:49:00	36:58:00
1998 (AM)	29	20	48 Hours	69%	41%	17%	10%	28:09:00	
1997 (AM)	27	20	48 Hours	74%	44%	26%	3%	29:10:00	37:01:00
1996 (AM)	23	14	45 Hours	61%	35%	1%	4%	33:01:00	41:13:00
1995 (PM)	24	16	45 Hours	67%	38%	13%	0%		
<b>5 Year Avg</b>	<b>29</b>	<b>20.6</b>			<b>70%</b>	<b>44%</b>	<b>17%</b>		
1994 (PM)	25	16	45 Hours	64%	32%	1%	4%		
1993 (PM)	12	10	60 Hours	83%	50%	25%	17%		
1992 (PM)	14	13	60 Hours	92%	29%	14%	14%		
1991 (PM)	14	14	60 Hours	100%	71%	36%	14%		
1990 (PM)	21	17	70 Hours	81%	29%	29%	14%		
<b>5 Year Avg</b>	<b>17.2</b>	<b>14</b>			<b>84%</b>	<b>42%</b>	<b>13%</b>		

### AGE GROUP AND \*\*OVERALL COURSE RECORDS

Age Group	Men	Time	Women	Time
10-19	Nickademus Hollon, 19, USA, 2009	33:21:29	N/A	N/A
20-29	Pete Kostelnick, 28, USA, 2016**	21:56:32	Jen Lee Segger, 28, Canada, 2008	32:31:57
30-39	Oswaldo Lopez, 39, Mexico, 2011	23:41:40	Alyson Venti (Allen), 34, USA, 2016**	25:53:07
40-49	Valmir Nunes, 43, Brazil, 2007	22:51:29	Nikki Wynd, 43, Australia, 2015	27:23:27
50-59	Charlie Engle, 50, USA, 2013	26:15:35	Irina Reutovich, 50, Russia, 2000	29:48:27
60-69	David Jones, 60, USA, 2012	30:33:19	Pamela Chapman-Markle, 61, USA, 2017	35:48:31
70-79	Arthur Webb, 70, USA, 2012	33:45:40	N/A	N/A
Youngest Ever	Nickademus Hollon, 19, USA, 2009	33:21:29	Breanna Cornell, 22, USA, 2014	44:58:21
Oldest Ever	Jack Denness, 75, UK, 2010	59:13:02	Sigrid Eichner, 64, Germany, 2005	52:45:46
Oldest Ever (Sub-48 Hrs.)	Arthur Webb, 70, USA, 2012	33:45:40	Dixie A. Madsen, 63, USA, 2000	47:04:00

**HISTORICAL DATA ABOUT THE BADWATER 135, 1987 - 2017**

**Total Number of Entrants, including 2018:** 1882

\* 1496 and 386 Females (80% / 20%)

**Total Number of Unique Entrants, including 2018:** 966

\* 760 Males and 206 Females (79% / 21%)

**Total Unique Finishers, through 2017 (any time limit):** 814

\* 631 Males and 183 Females (78% / 22%)

\* Time limits have been 70 hours, 60 hours, then 48 hours

**Total Unique Finishers, through 2017 (48 hours or less):** 692

\* 535 Males and 157 Females (77% / 23%)

**Total Unique Finishers, through 2017 (36 hours or less):** 225

\* 185 Males and 40 Females (82% / 18%)

**Comparison: Total Number of Mt. Everest Summits, as of 2016:**

7,646 summits by 4,469 people

**NUMBERS OF OFFICIAL FINISHES, THROUGH 2017**

**1-Time Finishers:** 539 (421 Males and 118 Females; 78% / 22%)

**2-Time Finishers:** 151 (113 Males and 38 Females; 75% / 25%)

**3-Time Finishers:** 50 (42 Males and 8 Females; 84% / 16%)

**4-Time Finishers:** 29 (19 Males and 10 Females; 65% / 35%)

**5-Time Finishers:** 12 (9 Males and 3 Females; 75% / 25%)

**6-Time Finishers:** 6 (4 Males and 2 Females; 66% / 34%)

**7-Time Finishers:** 10 (Shannon Farar-Griefer, Monica Scholz, Cheryl Zwarkowski, Ed Ettinghausen, Harvey Lewis, Oswaldo Lopez, Mark Matayzic, Frank McKinney, Mark Olson, Anthony Portera)

**8-Time Finishers:** 3 (Eberhard Frixe, Ian Parker, Keith Straw)

**9-Time Finishers:** 2 (Chris Frost and David Jones)

**10-Time Finishers:** 3 (Lisa Smith-Batchen, Dean Karnazes, Ray Sanchez)

**11-Time Finishers:** 2 (Pam Reed and Danny Westergaard)

**12-Time Finishers:** 2 (Jack Denness and Dan Marinsik)

**13-Time Finishers:** 1 (Scott Weber)

**14-Time Finishers:** 2 (John Radich and Arthur Webb)

**20-Time Finishers:** 1 (Marshall Ulrich)

**UNIQUE FINISHERS' NATIONALITY**

Chile..... 1	Japan ..... 10	Slovenia..... 1
China ..... 2	Jordan ..... 2	South Africa ..... 3
Colombia..... 1	Kazakhstan..... 1	South Korea ..... 1
Czech Republic ..... 2	Latvia ..... 1	Spain ..... 5
Denmark..... 4	Luxembourg..... 2	Sweden ..... 3
El Salvador..... 1	Malaysia ..... 1	Switzerland ..... 6
France..... 32	Mexico ..... 9	United Kingdom..... 45
Germany..... 46	Netherlands ..... 1	United States ..... 483
Greece ..... 2	New Zealand ..... 5	
Guatemala ..... 3	Philippines..... 4	<b>Total Non-USA ... 336</b>
Hungary..... 5	Poland ..... 4	<b>Total ..... 819</b>
India ..... 4	Portugal ..... 3	
Iran ..... 3	Romania ..... 1	
Ireland ..... 4	Russia ..... 3	
Israel..... 1	Serbia ..... 2	
Italy ..... 14	Singapore ..... 3	



*2017 Badwater 135 champion Wataru Iino passes through Keeler. Photo by Alexis Berg.*



Wataru Ino, 37, a Japanese national who lives in Chennai, India (in part, to live and train in a very hot climate) won the 2017 Badwater 135 as a rookie entrant with a time of 24:56:19.



Sandra Villines, 44, of San Jose, CA was the women's champion of the 2017 Badwater 135 with a time of 34:34:43. This was Sandra's second appearance in the world's toughest foot race, and second finish. She is also a four-time Badwater Salton Sea finisher and four-time Badwater Cape Fear finisher. Sandra then shattered (by two weeks!) the woman's trans-America running record in the fall of 2017, running from SF to NYC in 54 days, 16 hours, 24 minutes!



Shannon Farar-Griener, 56, of Calabasas, California was the final female finisher of the 2017 Badwater 135 with a time of 46:10:46. This was Shannon's ninth appearance at the world's toughest foot race and her seventh finish.



Juan Craveri, 48, of Buenos Aires, Argentina, was the final male finisher of the 2017 Badwater 135 with a time of 45:28:31. This was Juan's third appearance at the world's toughest foot race, and second finish.



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## 2018 ROSTER QUICK-REFERENCE

<b>Bib</b>	<b>Wave</b>	<b>First</b>	<b>Last</b>	<b>Bib</b>	<b>Wave</b>	<b>First</b>	<b>Last</b>
1	2300	Pete	Kostelnick	51	2000	Kimberlie	Budzik
2	2300	Oswaldo	Lopez	52	2300	Patsy	Ramirez-Arroyo
3	2300	Mosi	Smith	53	2000	Jessica	Hardy
4	2300	Chavet	Breslin	54	2130	Samuel	Kilpatrick
5	2130	David	Jones	55	2130	Luigi	Dessy
6	2300	Yassine	Diboun	56	2300	Mark	Matyazic
7	2000	Tess	Leono	57	2000	David	Coats
8	2130	Kerri	Kanuga	58	2300	Don	Reichelt
9	2300	Grant	Maughan	59	2130	Will	Glover
10	2130	Pamela	Chapman-Markle	60	2000	Mandy	Miller
11	2000	Jacqueline	Brown	61	2130	Martin	Gruebele
12	2300	Jared	Fetterolf	62	2130	Gilberto	Toigo
13	2300	Andrew	Glaze	63	2000	Mark	Olson
14	2130	Katy	Anderson	64	2130	Alex	Scherz
15	2000	Shannon	Farar-Griefer	65	2300	Bob	Hearn
16	2130	Edwin	Ettinghausen	66	2000	Hendra	Wijaya
17	2000	Ashley	Lindsey	67	2300	Steven	Carr
18	2300	Pam	Smith	68	2130	David	Green
19	2000	Melanie	Owen	69	2130	Steve	Gordon
20	2300	Nick	LaBoffe	70	2000	Olov	Berg
21	2000	Marshall	Ulrich	71	2000	Jodi	Weiss
22	2130	Michelle	West	72	2300	Jason	West
23	2300	Eric	Hunziker	73	2300	Ronnie	Delzer
24	2130	Ryan	Montgomery	74	2000	Deborah	King
25	2300	Amy	Costa	75	2130	Jason	LeDoyen
26	2300	Nyikolaj	Roskovics	76	2300	Brenda	Guajardo
27	2000	Leslie	Carboni	77	2300	Sally	McRae
28	2300	Michael	Jimenez	78	2130	Simone	Leo
29	2000	Kayla	Delk	79	2300	Alison	Miller
30	2000	Kevin	Delk	80	2300	Michael	Peragine
31	2000	David	Carder	81	2000	Gerald	Tabios
32	2000	Jennifer	Nissen	82	2000	Sunil	Sharma
33	2000	Gabriela	Poapst	83	2300	Michele	Graglia
34	2000	Richard Chas	Kabanuck	84	2130	Danny	Westergaard
35	2300	Harvey	Lewis	85	2300	Patrick	Hrabos
36	2300	Joshua	Holmes	86	2300	Zandy	Mangold
37	2300	Dan	McHugh	87	2300	Sergey	Ionov
38	2130	Eric	Spencer	88	2130	Pedro	Cianfaranni
39	2300	Zach	Gingerich	89	2130	Will	Thomas
40	2300	Marylou	Corino	90	2300	Artur	Kujawinski
41	2300	Ray	Sanchez	91	2130	Bradford	Lombardi
42	2000	Georgia	Mitsiou	92	2000	Grzegorz	Gucwa
43	2000	Matt	Barker	93	2300	Chris	Moroch
44	2000	Telma Ghazarian	Altoon	94	2130	Jose	Samaniego Montero
45	2130	Angel	Vega	95	2300	Brian	Hill
46	2130	John	Corey	96	2130	Andy	Lohn
47	2130	Christy	Johnston	97	2130	Julius	Iannitti
48	2000	Frank	McKinney	98	2130	Russ	Reinbolt
49	2000	Karla	Kent	99	2130	Tom	Atwell
50	2000	Cheryl	Zwarkowski	100	2300	Micah	Morgan

# 2018 OFFICIAL RACE ROSTER

## 8:00PM START

Bib	First Name	Last Name	City	State	Country	Nationality	M/F	Age	Race Vet?
44	Telma Ghazarian	Altoon	Porter Ranch	CA	USA	Armenia	Female	43	Rookie
43	Matt	Barker	Palm Desert	CA	USA	USA	Male	43	Rookie
70	Olov	Berg	Stockholm	SE	Sweden	Sweden	Male	47	Rookie
11	Jacqueline	Brown	Saint Albans Bay	VT	USA	USA	Female	56	Veteran
51	Kimberlie	Budzik	Friendswood	TX	USA	USA	Female	58	Veteran
27	Leslie	Carboni	Sacramento	CA	USA	USA	Female	44	Rookie
31	David	Carder	Cumming	GA	USA	USA	Male	55	Rookie
57	David	Coats	Houston	TX	USA	USA	Male	57	Veteran
29	Kayla	Delk	Greeneville	TN	USA	USA	Female	31	Veteran
30	Kevin	Delk	Greeneville	TN	USA	USA	Male	35	Veteran
15	Shannon	Farar-Griever	Calabasas	CA	USA	USA	Female	57	Veteran
92	Grzegorz	Gucwa	Fredrikstad	Ostfold	Norway	Poland	Male	44	Rookie
53	Jessica	Hardy	Dana Point	CA	USA	USA	Female	35	Rookie
34	Richard Chas	Kabanuck	Clovis	NM	USA	USA	Male	34	Rookie
49	Karla	Kent	Las Vegas	NV	USA	Czech Republic	Female	55	Veteran
74	Deborah	King	Edinburgh		United Kingdom	United Kingdom	Female	44	Rookie
7	Tess	Leono	Mandaluyong City	Metro Manila	Philippines	Philippines	Female	50	Veteran
17	Ashley	Lindsey	Capitola	CA	USA	USA	Female	36	Veteran
48	Frank	McKinney	Delray Beach	FL	USA	USA	Male	55	Veteran
60	Mandy	Miller	Steamboat Springs	Colorado	USA	USA	Female	56	Veteran
42	Georgia	Mitsiou	Kozani	Western Macedonia	Greece	Greece	Female	42	Rookie
32	Jennifer	Nissen	Roanoke	TX	USA	USA	Female	32	Rookie
63	Mark	Olson	Covina	CA	USA	USA	Male	71	Veteran
19	Melanie	Owen	Cincinnati	OH	USA	USA	Female	48	Rookie
33	Gabriela	Poapst	San Jose	CA	USA	Mexico	Female	47	Rookie
82	Sunil	Sharma	Panchkula	Haryana	India	India	Male	36	Rookie
81	Gerald	Tabios	Elmhurst	NY	USA	Philippines	Male	48	Veteran
21	Marshall	Ulrich	Evergreen	CO	USA	USA	Male	67	Veteran
71	Jodi	Weiss	Washington	DC	USA	USA	Female	48	Veteran
66	Hendra	Wijaya	Bogor	West Java	Indonesia	Indonesia	Male	51	Rookie
50	Cheryl	Zwarkowski	Victorville	CA	USA	USA	Female	60	Veteran

## 9:30PM START

Bib	First Name	Last Name	City	State	Country	Nationality	M/F	Age	Race Vet?
14	Katy	Anderson	Bondi Beach	New South Wales	Australia	Australia	Female	41	Rookie
99	Tom	Atwell	San Diego	CA	USA	USA	Male	51	Rookie
10	Pamela	Chapman-Markle	San Leon	TX	USA	USA	Female	62	Veteran
88	Pedro	Cianfaranni	Sao Paulo	Sao Paulo	Brazil	Brazil	Male	50	Rookie
46	John	Corey	Cincinnati	OH	USA	USA	Male	50	Veteran
55	Luigi	Dessy	Ponce	PR	USA	USA	Male	40	Veteran
16	Edwin	Ettinghausen	Murrieta	CA	USA	USA	Male	55	Veteran
59	Will	Glover	Stuart	FL	USA	USA	Male	47	Veteran
69	Steve	Gordon	Chevington	Suffolk	United Kingdom	United Kingdom	Male	49	Rookie
68	David	Green	Jacksonville Beach	FL	USA	USA	Male	54	Veteran
61	Martin	Gruebele	Champaign	IL	USA	USA	Male	54	Rookie
97	Julius	Iannitti	Castellaneta	Puglia	Italy	Italy	Male	47	Rookie
47	Christy	Johnston	Destin	FL	USA	USA	Female	49	Veteran
5	David	Jones	Murfreesboro	TN	USA	USA	Male	66	Veteran
8	Kerri	Kanuga	George Town	Grand Cayman	Cayman Islands	Cayman Islands	Female	48	Veteran
54	Samuel	Kilpatrick	London	Greater London	United Kingdom	Ireland	Male	60	Veteran
75	Jason	LeDoyen	Cary	NC	USA	USA	Male	47	Veteran
78	Simone	Leo	Cinisello Balsamo		Italy	Italy	Male	39	Rookie
96	Andy	Lohn	Dayton	MN	USA	USA	Male	45	Rookie
91	Bradford	Lombardi	Jensen Beach	FL	USA	USA	Male	49	Veteran
24	Ryan	Montgomery	Provo	UT	USA	USA	Male	24	Rookie
98	Russ	Reinbolt	La Jolla	CA	USA	USA	Male	53	Veteran
94	Jose	Samaniego Montero	Sant Vicenc de Montalt	Barcelona	Spain	Spain	Male	33	Rookie
64	Alex	Scherz	Oberwil	Baselland	Switzerland	Switzerland	Male	45	Veteran
38	Eric	Spencer	Coconut Grove	FL	USA	USA	Male	39	Veteran
89	Will	Thomas	Sequim	WA	USA	USA	Male	40	Rookie

# RACE ROSTER

## 9:30PM START (Cont.)

Bib	First Name	Last Name	City	State	Country	Nationality	M/F	Age	Race Vet?
62	Gilberto	Toigo	Porto Alegre	Rio Grande do Sul	Brazil	Brazil	Male	55	Rookie
45	Angel	Vega	Gilbert	AZ	USA	USA	Male	45	Rookie
22	Michelle	West	Costa Mesa	CA	USA	USA	Female	46	Veteran
84	Danny	Westergaard	Palos Verdes Estates	CA	USA	USA	Male	59	Veteran

## 11:00PM START

Bib	First Name	Last Name	City	State	Country	Nationality	M/F	Age	Race Vet?
4	Chavet	Breslin	Denver	CO	USA	USA	Female	36	Veteran
67	Steven	Carr	Huntsville	AL	USA	USA	Male	51	Rookie
40	Marylou	Corino	Georgetown	ON	Canada	Canada	Female	40	Veteran
25	Amy	Costa	Ponte Vedra Beach	FL	USA	USA	Female	53	Veteran
73	Ronnie	Delzer	The Woodlands	TX	USA	USA	Male	37	Rookie
6	Yassine	Diboun	Portland	Oregon	USA	USA	Male	39	Rookie
12	Jared	Fetterolf	Dallas	TX	USA	USA	Male	29	Veteran
39	Zach	Gingerich	Newberg	OR	USA	USA	Male	39	Veteran
13	Andrew	Glaze	Redlands	CA	USA	USA	Male	40	Rookie
83	Michele	Graglia	Los Angeles	CA	USA	Italy	Male	34	Veteran
76	Brenda	Guajardo	Austin	TX	USA	USA	Female	41	Veteran
65	Bob	Hearn	Portola Valley	CA	USA	USA	Male	52	Rookie
95	Brian	Hill	Ft Worth	TX	USA	USA	Male	44	Rookie
36	Joshua	Holmes	Los Angeles	CA	USA	USA	Male	40	Veteran
85	Patrick	Hrabos	Sarasota	FL	USA	USA	Male	32	Rookie
23	Eric	Hunziker	Cincinnati	OH	USA	USA	Male	49	Rookie
87	Sergey	Ionov	London	London	United Kingdom	Russia	Male	30	Rookie
28	Michael	Jimenez	Soledad	CA	USA	USA	Male	44	Veteran
1	Pete	Kostelnick	Hannibal	MO	USA	USA	Male	30	Veteran
90	Artur	Kujawinski	Poznan	Wielkopolska	Poland	Poland	Male	42	Rookie
20	Nick	LaBoffe	Cincinnati	OH	USA	USA	Male	37	Veteran
35	Harvey	Lewis	Cincinnati	OH	USA	USA	Male	42	Veteran
2	Oswaldo	Lopez	Maderas	CA	USA	Mexico	Male	46	Veteran
86	Zandy	Mangold	Brooklyn	NY	USA	USA	Male	44	Rookie
56	Mark	Matyazic	Irvine	CA	USA	USA	Male	53	Veteran
9	Grant	Maughan	Dudley	New South Wales	Australia	Australia	Male	54	Veteran
37	Dan	McHugh	Key Largo	FL	USA	USA	Male	47	Veteran
77	Sally	McRae	Huntington Beach	CA	USA	USA	Female	39	Rookie
79	Alison	Miller	Fort Worth	TX	USA	USA	Female	39	Rookie
100	Micah	Morgan	Vestavia	AL	USA	USA	Female	35	Rookie
93	Chris	Moroch	Statesville	NC	USA	USA	Male	39	Rookie
80	Michael	Peragine	Port Saint Lucie	FL	USA	USA	Male	37	Rookie
52	Patsy	Ramirez-Arroyo	Guaynabo	PR	USA	USA	Female	52	Rookie
58	Don	Reichelt	Littleton	CO	USA	USA	Male	32	Rookie
26	Nyikolaj	Roskovics	Erd	Pest	Hungary	Hungary	Male	48	Rookie
41	Ray	Sanchez	Sacramento	CA	USA	USA	Male	51	Veteran
3	Mosi	Smith	Grants Pass	OR	USA	USA	Male	36	Veteran
18	Pam	Smith	Salem	OR	USA	USA	Female	43	Rookie
72	Jason	West	Brisbane	Queensland	Australia	Australia	Male	46	Rookie



2017

FURNACE CREEK VISITOR CENTER



The **BADWATER® ULTRA CUP** comprises *Badwater Cape Fear* in March, *Badwater Salton Sea* in late April, and *Badwater 135* in July. Those runners who complete all three full-distance events in the same calendar year will be featured on the Badwater website and their virtues will be extolled throughout the Internet and in future editions of **BADWATER Magazine**.

## 2018 BADWATER ULTRA CUP CURRENT STANDINGS



**Leslie Carboni**

Combined Time: 36:09:00



**Marylou Corino**

Combined Time: 30:36:00



**Kayla Delk**

Combined Time: 29:22:00



**Ashley Lindsey**

Combined Time: 36:30:00



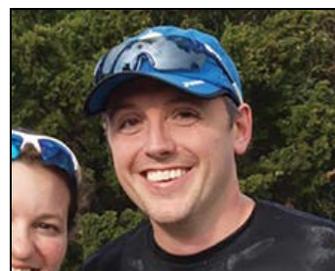
**Tom Atwell**

Combined Time: 34:44:00



**Matt Barker**

Combined Time: 36:59:00



**Kevin Delk**

Combined Time: 29:22:00



**Luigi Dessy**

Combined Time: 36:44:00



**Andrew Glaze**

Combined Time: 23:35:00



**Joshua Holmes**

Combined Time: 30:28:00



**Dan McHugh**

Combined Time: 23:19:00



**Ray Sanchez**

Combined Time: 23:57:00



**Gerald Tabios**

Combined Time: 34:48:00



**Angel Vega**

Combined Time: 36:05:00

First	Last	City	State	Country	Nationality	Age	M/F	Cape Fear	Salton Sea	135	Combined
<b>2014</b>											
Lorie	Alexander	Calgary	AB	Canada	Canada	55	F	11:08:00	22:31:03	36:32:37	70:11:40
Jeff	Gleason	Wexford	PA	USA	USA	56	M	9:49:00	19:39:00	36:21:55	65:49:55
Phil	Nimmo	Mansfield	TX	USA	USA	50	M	11:37:00	22:31:03	36:23:41	70:31:44
Anthony	Portera	White Plains	NY	USA	USA	43	M	12:03:00	24:44:00	37:09:21	73:56:21
Eric	Spencer	Miami Beach	FL	USA	USA	35	M	10:07:00	25:24:00	36:45:49	72:16:49
Keith	Straw	Malvern	PA	USA	UK	58	M	9:57:00	19:39:00	42:21:30	71:57:30
Bill	Thompson	Moon Township	PA	USA	USA	48	M	9:49:00	19:39:00	43:16:16	71:44:16
<b>2015</b>											
Jill	Andersen	Reno	NV	USA	USA	38	F	10:00:00	24:53:54	34:04:14	68:58:08
Jodi	Weiss	Highland Beach	FL	USA	USA	45	F	10:27:01	22:37:40	43:37:51	76:42:32
Emily	Ryan	Washington	DC	USA	USA	40	F	10:48:00	23:45:25	45:26:46	80:00:11
Norma	Bastidas	Delta	BC	Canada	Canada	47	F	11:14:01	23:57:30	45:44:15	80:55:46
Phil	Nimmo	Mansfield	TX	USA	USA	51	M	10:15:02	21:18:20	36:20:15	67:53:37
Russ	Reinbolt	La Jolla	CA	USA	USA	50	M	8:20:00	23:31:00	37:26:08	69:17:08
Dale	Cougot	Garland	TX	USA	USA	49	M	9:57:00	22:48:28	39:23:47	72:09:15
Keith	Straw	Malvern	PA	USA	USA	60	M	8:47:02	25:30:53	40:14:10	74:32:05
Bob	Becker	Ft. Lauderdale	FL	USA	USA	70	M	11:20:00	25:30:53	41:30:21	78:21:14
<b>2016</b>											
Amy	Costa	Jacksonville	FL	USA	USA	51	F	10:00:00	17:33:00	32:47:57	60:20:57
Sandra	Villines	San Jose	CA	USA	USA	43	F	10:01:00	20:47:00	36:35:37	67:23:37
Gina	Fioroni	Lakewood	CO	USA	USA	39	F	9:28:00	22:21:00	38:22:36	70:11:36
Kayla	Delk	Greenville	TN	USA	USA	29	F	10:54:00	25:08:00	45:32:01	81:34:01
Cheryl	Zwarkowski	Victorville	CA	USA	USA	58	F	10:12:00	25:44:00	46:36:43	82:32:43
Grant	Maughan	Dudley	NWS	Australia	Australia	52	M	8:23:00	17:33:00	26:44:36	52:40:36
Jared	Fetterolf	Dallas	TX	USA	USA	27	M	7:14:00	14:56:00	30:39:39	52:49:39
Mark	Matyazic	Irvine	CA	USA	USA	51	M	7:36:00	16:02:00	29:40:42	53:18:42
Luigi	Dessy	Ponce	PN	USA	USA	38	M	8:24:00	18:50:00	32:38:01	59:52:01
William	Gane	Chicago	IL	USA	UK	40	M	10:12:00	21:18:00	35:22:34	66:52:34
Phil	Nimmo	Mansfield	TX	USA	USA	52	M	9:48:00	18:20:00	38:46:48	66:54:48
David	Coats	Houston	TX	USA	USA	55	M	11:45:00	21:31:00	37:23:34	70:39:34
Keith	Straw	Malvern	PA	USA	UK	61	M	8:21:00	23:58:00	38:44:59	71:03:59
Carl	Hineline	Plano	TX	USA	USA	41	M	8:57:00	22:21:00	41:12:14	72:30:14
Dale	Cougot	Garland	TX	USA	USA	50	M	9:48:00	27:27:00	40:36:11	77:51:11
Kevin	Delk	Greenville	TN	USA	USA	33	M	10:54:00	25:08:00	45:32:01	81:34:01
<b>2017</b>											
Sandra	Villines	San Jose	CA	USA	USA	44	F	9:06:00	19:05:10	34:34:43	62:45:53
Pamela	Chapman-Markle	San Leon	TX	USA	USA	61	F	10:14:02	22:07:36	35:48:31	68:10:09
Andrea	Kooiman	Mission Viejo	CA	USA	USA	42	F	9:25:53	22:28:52	38:13:34	70:08:19
Kayla	Delk	Greenville	TN	USA	USA	30	F	9:51:20	25:04:00	40:26:12	75:21:32
Catra	Corbett	Fremont	CA	USA	USA	52	F	11:37:49	23:42:21	42:39:57	78:00:07
Antonette	Prather	Garner	NC	USA	USA	48	F	11:22:05	25:36:52	44:30:10	81:29:07
Mark	Matyazic	Irvine	CA	USA	USA	52	M	8:55:16	17:06:50	31:23:56	57:26:02
Ray	Sanchez	Sacramento	CA	USA	USA	50	M	7:58:15	22:00:12	30:23:20	60:21:47
Camilo	Martinez	New York	NY	USA	Colombia	36	M	8:27:45	18:57:19	33:32:59	60:58:03
Jared	Fetterolf	Dallas	TX	USA	USA	28	M	7:44:01	19:18:03	33:56:32	60:58:36
Russ	Reinbolt	La Jolla	CA	USA	USA	52	M	8:53:29	21:27:23	35:52:24	66:13:16
Luigi	Dessy	Ponce	PR	USA	USA	39	M	9:14:30	18:57:19	38:09:54	66:21:43
Joshua	Holmes	Los Angeles	CA	USA	USA	39	M	8:09:00	22:28:52	35:50:31	66:28:23
Kevin	Delk	Greenville	TN	USA	USA	34	M	9:51:20	25:04:00	40:26:12	75:21:32

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