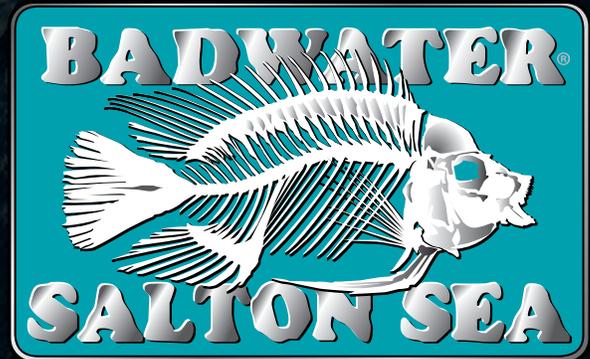


adventureCORPS®



July 2021



#BadwaterStrong
World's Toughest



Welcome to the July 2021 edition of BADWATER® Magazine! We are AdventureCORPS®, producers of ultra-endurance sports events and adventure travel across the globe, and the force behind the BADWATER® brand. This magazine celebrates the entire world-wide Badwater® / AdventureCORPS® series of races, all the Badwater Services, Gear, Drinks, and Clothing, and what we like to call the Badwater Family and the Badwater Way of Life.

Adventure is our way of life, so – after the sad and disastrous 2020 when we were not able to host any of our life-changing events – we are pleased to be fully back in action in 2021!

Well, make that almost fully: Due to pandemic travel bans still in place, international participation in our USA-based events is not where we want it and that's really unfortunate. Badwater 135 is the de facto Olympics of Ultrarunning and the 135-Mile World Championship, so we always want as many nationalities represented as possible. (The inside front cover of this magazine celebrates all sixty-one nationalities which have been represented on the Badwater 135 start line over the years.)

Our new six-day stage race across Armenia – Artsakh Ultra – will have to wait yet another year to debut in 2022, two years later than planned. But it will be incredible, the ultimate stage race with six days of world-class trail running through several millennia of incredible culture and history, and across the most dramatic and awe-inspiring landscapes.

This year, we are super excited to have brought two virtual races to life, first for the 31 days of January, and then for 16 days in April. Both Badwater 267 VR events were intense, 267-mile challenges, with the April “Elite” edition truly “the world’s toughest virtual race.” The enthusiasm for Badwater VR is off the charts, and both races will definitely return in 2022.

Now we are thrilled to host the full three-race line-up of USA-based in-person Badwater races in 2021. Known as the Badwater Ultra Cup altogether, these are the 135-mile Badwater 135 on July 19-21, the 51.4-mile Badwater Cape Fear on October 2 (instead of the usual March schedule), and then the 81-mile Badwater Salton Sea on November 7-8 (instead of the usual late April schedule.) We hope you can join us for one or more Badwater races, and – wherever you live – we hope you bring some Badwater into your everyday life!

Yours in sport and adventure,

Chris Kostman

Race Director and Chief Adventure Officer



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ADVENTURECORPS — A BRIEF HISTORY

Founded in 1984 by Chris Kostman, AdventureCORPS has made its name producing the world's toughest endurance races in dramatic, remote locations that few people would ever visit, let alone run or bike across, and offering products and services for those who live their life on the edge of what's possible. Held under the Badwater® banner, AdventureCORPS events have allowed runners and bicyclists to explore the Death Valley, Salton Sea, Cape Fear, Mojave Desert, and Nevada outback regions in the USA, as well as the Okanagan Valley of British Columbia, Mustang region of Nepal, Yunan Province of China, and now Armenia and Artsakh.

As an athlete, Chris got his start early in ultra sports: He set world ultra cycling records in high school (riding against the clock from San Francisco City Hall to Los Angeles City Hall) and completed the 3127-mile Race Across America bicycle race in less than eleven days at age 20, the youngest finisher ever. That was a springboard to competing in events as diverse as three 100-mile snowshoe running races on the Iditarod Trail across the Alaskan wilderness, the Triple Ironman in France, the 6.5-mile Skaha Lake Ultra Swim in Canada, the 10km Bridge to Bridge Swim in San Francisco, six Ironman Triathlons, an Ultraman-distance triathlon in Vermont, the 100th anniversary Boston Marathon, and many other endurance races.

Hand in hand with this athletic career and right from the beginning, Chris has been producing and directing endurance sports events through his company, AdventureCORPS. He and his team have now produced more than 150 endurance sports and adventure travel events.

Our hands-on involvement with the Death Valley region goes back to 1987 when Chris broke the record for a double-crossing of Death Valley by bicycle, and then in 1990 when AdventureCORPS took over the ultracycling race that would become known as Furnace Creek 508. From a humble field of just 25 racers that first year, Chris and AdventureCORPS grew "The 508" to 249 racers at its final edition in 2013.



2005 Furnace Creek 508 champion Kenny Souza blasts through Death Valley.

In 1999, the opportunity to take over the Badwater 135 led to taking this small race of about 25 mostly American runners from obscurity to becoming the absolute pinnacle event in the world of ultra running.

Seeing an immense desire for more and more athletes to have an authentic Badwater experience and to join "the Badwater Family" – but with a marquee event which is limited to just 100 competitors - we launched sister events Badwater Salton Sea in 2013 and Badwater Cape Fear in 2014. They quickly became must-do races

with their own individual identities and reputations, while sharing the three main hallmarks of all Badwater races:

- 1) A dramatic, gorgeous location which most people wouldn't otherwise visit.
- 2) Top level of competition with a diverse race field from all over the USA and across the globe, but with intentionally small fields to encourage both camaraderie and time alone on the race course.
- 3) The highest level of professional event production with an exacting eye for detail and a laser focus on the athletes first and foremost while working in close collaboration with local partners.



The competitors - including Chris Kostman - gather at the start line of the eight-day Mustang Trail Race in Nepal.

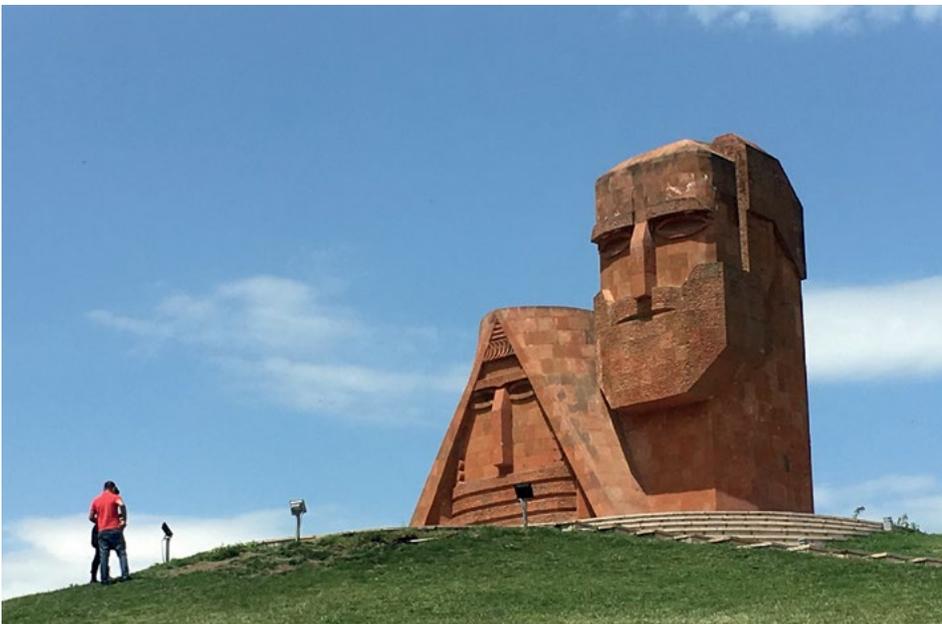
Over the years, Chris' background in archaeology and love of travel, history, languages, and "foreign" cultures led to AdventureCORPS launching international events under the Badwater banner. These included Badwater Presents Mustang Trail Race in Nepal in 2015, an eight-day trail stage race held in the little-known Mustang region of Nepal at elevations from 10,000 to 14,500 feet (3000-4500m.) Both Chris and his brother Keith even got to participate in Mustang!



Chris Kostman and his fellow race staff at the conclusion of the 2016 Mt. Gaoling Ultra.

The following year, 2016, Chris was hired by Explore China to help develop and co-race direct the inaugural Badwater Presents Mt. Gaoligong Ultra in China. Held in the Yunnan Province of southwestern China, this was a 104-mile (168km) mountain trail ultra through history and time.

We have spent the past four years developing a six-day trail stage race across Armenia, and after another reconnaissance and operations trip this fall, we look forward to bringing the Artsakh Ultra to life in 2022.



The “We Are Our Mountains” sculpture in Stepanakert, Armenia is the symbol of both Artsakh and Artsakh Ultra.

Wherever you join us for a Badwater event – including our new and exciting virtual offerings – and whenever you bring some Badwater into your daily life, AdventureCORPS is here to inspire and provide the forum for “chasing the horizon.” We will see you “out there”!



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www.adventurecorps.com

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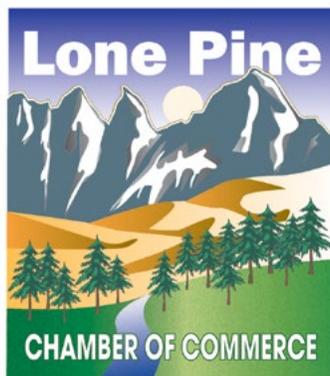
Images courtesy of Ron Jones, Ian Parker, Robert Lee, Jay Lee, Keith Kostman, and others.

All hand-drawn art within these pages courtesy Badwater athlete Rich Peers.

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



Official Badwater Sponsors



AdventureCORPS is pleased to welcome the support of Joe Nimble Footwear, Pure Vitamin Club, First Discount Brokerage / 1DB.com, and NSNG Foods as Official Sponsors of Badwater. We also thank 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, the Lone Pine Chamber of Commerce, and other generous companies and individuals who support Badwater 135 each year. Similarly we thank all of our community partners in Southport and Bald Head Island, North Carolina, as well as in Borrego Springs and Palomar Mountain, California.

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2021 BADWATER 267 VR

669 Athletes Kicked off the New Year in Badwater Style!

Last December 7, 2020 we announced the 2021 Badwater 267 VR offering adventurous athletes across the globe the chance to kick 2020 to the curb and kick off the New Year in a Badwaterly fashion!

Less than four weeks later, 669 athletes in 30 countries began this incredible 31-day, 267-mile epic challenge and Badwater event!

Badwater 267 VR competitors had the 31 days of January to virtually and sequentially traverse the routes of all three Badwater® races – the 51-mile Badwater Cape Fear, the 81-mile Badwater Salton Sea, and the 135-mile Badwater 135 – for a total of 267 miles over 31 days. These three events comprise the legendary Badwater Ultra Cup - and now Badwater 267 VR. Competitors could run at their own pace, as often or as long as they wanted, wherever they lived, anywhere on the planet!

IS IT REAL, OR VIRTUAL, OR BOTH?

Imagine running a Badwater race: Every one of our Badwater races features a challenging route with all its literal and psychological ups and down, a definite time limit, and the simultaneous competitiveness and camaraderie of the other Badwater runners! Along the way, you encourage and support one another, while pushing yourself and the other competitors to give your best possible performances. The Badwater Family is at the heart of what brings runners to our events and especially what brings them back again and again. All of that is also intrinsic to the Badwater 267 VR experience!

As competitors progressed along the route, they were taken on a virtual tour of all three Badwater race courses. Besides cool graphics and descriptions of the different highlights of each race route, there were links to videos and image galleries of the various Badwater events, inspiring stories from the wide world of Badwater, and much more to encourage everyone to keep moving forward towards their VR finish line at Whitney Portal.

With massive social media interaction through the #Badwater267VR hashtag, a Facebook event page, and a private Strava club, the excitement for Badwater 267 VR for the 31-day duration of January was absolutely off the charts.

It was such a pleasure to host the race – and for your faithful race director, Chris Kostman, to participate alongside everyone else - and we are already planning and looking forward to the return of Badwater 267 VR in January of 2022!

For full race results and participant image galleries, visit:

RunSignUp.com

Thank you and congratulations to everyone who participated!



L-R: Patty Ibarra, Han Le, Ambika Marigowda, Lindsay Fochler, and Sandra Villines live near one another in Northern California and were able to share miles and inspiration, plus meet up for a group photo with all their Badwater 267 VR gear!



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2021 BADWATER 267 VR ELITE

AdventureCORPS® - that's us! - recently hosted a new event called Badwater® 267 VR Elite on April 3-18, 2021. Unlike other Badwater races held in remote locations and generally limited to a small field of invited or specially qualified runners, Badwater 267 VR Elite was open to any and all runners and other endurance athletes from across the globe. But it was a daunting, nearly insane undertaking and only 201 had the nerve to register, with just 154 successfully finishing. Everyone agreed it's "the world's toughest virtual race."

The Badwater 267 VR Elite competitors virtually and sequentially traversed the routes of all three Badwater® races – the 51-mile Badwater Cape Fear, the 81-mile Badwater Salton Sea, and the 135-mile Badwater 135 – for a total of 267 miles or 430km. The strategy of miles per run, miles per day, number of runs per day, and such was totally up to each competitor and their schedule.

Importantly, all running had to be done outdoors and tracked with GPS and Strava. There was also a mandatory private Strava Club in which everyone could communicate, support, and encourage one another - and also keep tabs on one another. The Race Director, Chris Kostman, studied literally thousands of Strava records to certify each finisher. In the end, this Badwater race had a lower finishing rate than Badwater 135!

The full race results are online at dbase.adventurecorps.com and here are just some of the statistics and interesting details of this incredible event:

201 Entrants: 65 F (32%) and 136 M (68%); 9 Did Not Start; 38 Did Not Finish; 154 Certified Finishers.

Countries of Residence: We had competitors running their own Badwater race in 27 countries: Austria, Belize, Brazil, Canada, Czech Republic, Estonia, Finland, France, Germany, Greece, Hong Kong, India, Ireland, Isle of Man, Jordan, Kuwait, Luxembourg, Philippines, Poland, Portugal, Russia, Singapore, Spain, Sweden, Taiwan, United Kingdom, and USA (with American residents in 36 different US states and territories.)

Top Finishers:

- Women's Champion: Iris Klein, 45, of Seattle, WA (Nationality: Mongolia): 31:09:00 (6th overall) and 7:00/mile. She had a very close race with Naomi Benson of the UK who lives in Belize, stationed there with the British Army. Naomi - the women's champion of our January VR - ran 7:28/mile to finish the Elite VR in 33:12:03 (8th overall.)
- Men's Champion: Ethan Coffey, 38, of Knoxville, TN (Nationality: USA): 27:16:15 and 6:08/mile. He had a very close race with Aaron Heath, 46, of Chappaqua, NY who ran 6:24 miles to finish 28:27:44.

Youngest Finishers: Sarah Burney, 31, of El Segundo, California and Doug Brewer, 25, of Hertford Heath, UK.



"First belt buckle!! 267 miles in 14 days. Placed second to last. Only 75% of participants finished, and it was by far the hardest thing I've ever done. I made some awesome connections within the Badwater family and learned what it meant to push past my 'limits'. It was one wild crazy adventure that I'll ever never forget!" - Misty Schroeder AKA [@HoneyJewJew](https://www.instagram.com/HoneyJewJew) on Instagram.

Oldest Finishers: Monique Muhlen, 68, of Luxembourg and Jay Birmingham, 75, of Florida Both are Badwater 135 veterans.

Most Elevation Gain: Shannon Mick of Zelienople, PA with 20,738 feet / 6321m and Brian Hamilton of Portland, OR with 29,336 / 8942m

Highest Placing Badwater 135 Veterans:

- Marylou Corino of Georgetown, ON, Canada placed 15th overall and 4th female with a pace of 7:49/mile for a time of 34:46:01. She is a two-time Badwater 135 finisher, including a 33:12:46 in 2013.
- Vitor Bruno Fernandes Rodrigues of Guimaraes, Portugal. He placed 4th overall with a pace of 6:38/mile for a time of 29:29:57. He ran the 2018 Badwater 135 in 36:13:04.

Highest Number of Separate Runs to Cover the 267 Miles? Gianna Reginato of Weston, Florida logged SEVENTY-SEVEN separate runs for an average of just under 3.5 miles or 5.6km per run.

Final Finishers:

- Nate Dirvin, 39, of West Cape May, NJ (Nationality: USA) covered the distance in 76:50:50.
- Tsetsegchuluun Tovuujiil, 41, of Walnut Creek, CA (Nationality: Mongolia) covered the distance in 75:45:56.

Congrats to all the Badwater 267 VR Elite finishers!

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AdventureCORPS presents Artsakh Ultra

When the organizers of the world's toughest, most grueling, non-stop races put together a Stage Race, where athletes get to actually sleep at night, then you know something VERY interesting is afoot!!! Visit Badwater.com in October of 2021 for all the info and registration.

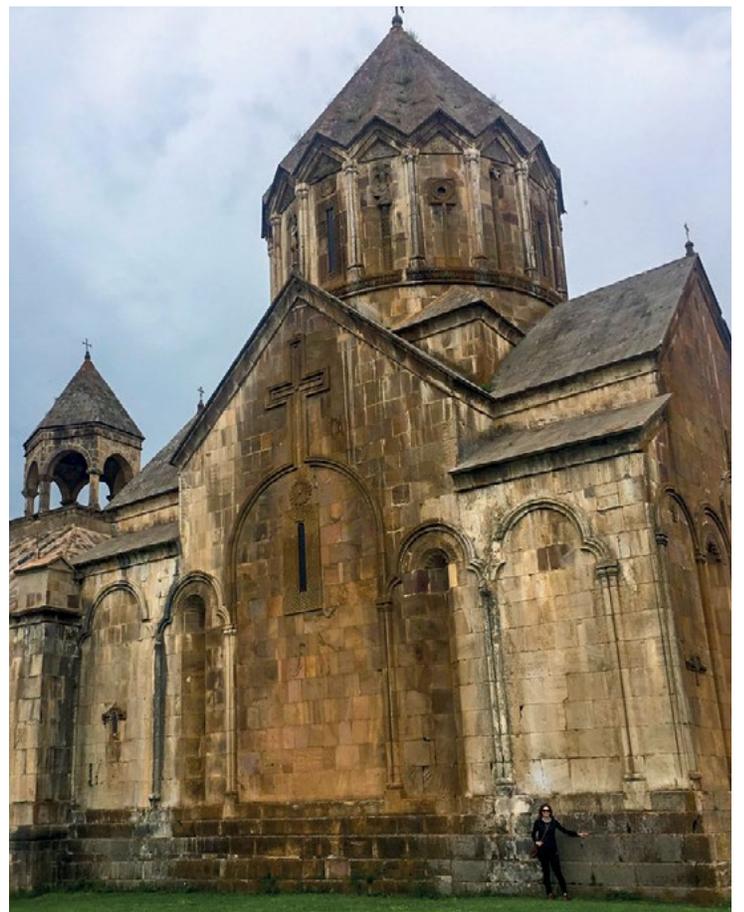
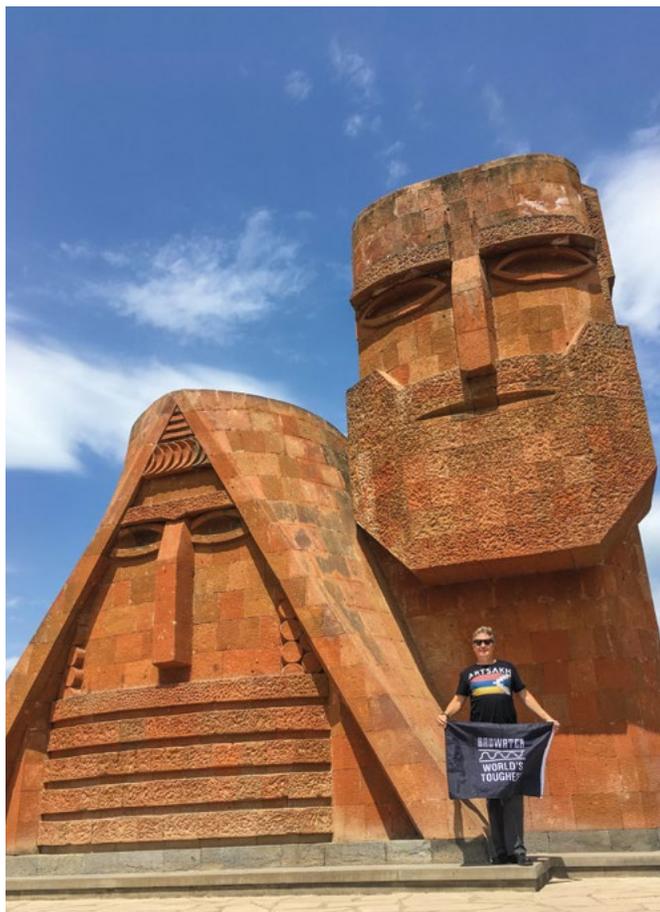
In 2022, AdventureCORPS - organizers of the world-famous Badwater® ultramarathon running races in Death Valley and across the USA - will host a six-day, point-to-point, 160-mile (260km) trail running stage race across Armenia and Artsakh. Located at the crossroads of Europe, Asia, and the Middle East. Armenia is a democratic, Christian nation and Artsakh is located just east of Armenia itself. It's an absolutely gorgeous place, covered almost entirely in pristine, green, forested mountainous with trails and pathways dating back literally thousands of years. Armenia is home to beautiful, fascinating towns and villages, ancient sites, natural wonders, Christian churches dating as far back as the 4th Century AD, the cosmopolitan capital city of Yerevan, and much more.

In 2022, we plan to host no more than 50 runners representing at least ten different countries in the inaugural Artsakh Ultra. The race will be organized in a point-to-point "stage race" format, in which runners will run 25 to 35 miles (40 to 56km) each day. Each day's stage will be timed separately, and overall results will be calculated by adding all six days' times together.

While the route will be incredibly beautiful and challenging, the race itself will also be a culturally immersive experience. Each day's route will pass through one or more villages, while the overnights will be in or near villages and cities. Some nights runners will camp, while others will be in guest houses or hotels. Runners will eat the local, super healthy, incredibly fresh food. They will enjoy Armenian music, dance, and culture. Along the way, the runners will visit - sometimes "off the clock" - 1000-year-old Armenian churches, monasteries, and archaeological sites. And while each competitor will run as part of an international field of runners, they will be embraced, surrounded, and supported by the people of Armenia and their incredible food, music, language, and culture.

To keep the focus on the running, the scenery, and the culture, luggage transport will be provided each day and all breakfast and dinner meals will be provided. (Runners will provide and carry their own energy food while running.) Water will be provided along the route at both natural springs and checkpoints set up to track and support the runners.

adventureCORPS®



The Official Charities of AdventureCORPS include the Challenged Athletes Foundation, Major Taylor Association, Death Valley Natural History Association, and Bald Head Island Conservancy. A primary goal and purpose of our events is to raise funds for, and awareness of, these wonderful and important organizations.



Since 2002, the original Official Charity of AdventureCORPS has been the **Challenged Athletes Foundation**. One of the goals of our events is to raise funds for, and awareness of, this wonderful organization.

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 \$112 million and more than 26,000 funding requests from challenged athletes in all 50 states and over 40 countries supporting 103 different sports have been satisfied. CAF's outreach efforts reach another 200,000 individuals each year. Whether it's a \$2,500 grant for a handcycle, helping underwrite a carbon fiber running prosthetic foot not covered by insurance, or making the introduction to a mentor who has triumphed over a similar challenge, CAF provides those with the desire to live active, athletic lifestyles every opportunity to compete in sports and physical activities.

Eighty cents of every dollar raised by CAF provides funding and programs that get challenged athletes into the game. (CAF has a Four-Star rating by Charity Navigator.)

Since 2002, AdventureCORPS has raised over \$776,000 for CAF, and AdventureCORPS athletes have raised equally impressive sums!

Website: 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 annually 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

Environment

AdventureCORPS events happen not in a human-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 3000 companies that donate at least 1% of their sales to a network of thousands of vetted environmental nonprofit partners in over 60 countries. 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 hundreds of millions of dollars in positive environmental change (for example, \$24 million in just 2018).

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 helped protect 73 million acres and 3.575 river miles, remove or halt 35 dams, purchase 17 climbing areas, and designate five marines reserves.

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 more than \$24 million to grassroots conservation groups throughout North America.

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 a Life Member and began recognizing DVNHA as an Official Charity of AdventureCORPS in 2009. 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 Death Valley 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.)

Welcome to Badwater Cape Fear!

The BADWATER® ultra running experience returns to the (B)east Coast when the seventh Badwater Cape Fear race takes place on Bald Head Island, North Carolina on October 2, 2021 (We will return to our usual March schedule next year, with a race date of March 19, 2022.)

With 50km and 51-mile race options, Badwater® Cape Fear features a twelve-mile warm-up on the car-free, one-lane-wide roads and maritime forest trails of Bald Head Island, followed by either 19.5 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 Cape Fear River 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!

Bald Head Island and nearby Southport, NC (featured in the film "Safe Haven") are ideal vacation get-away spots for the entire family, located less than one hour from Wilmington, NC and its major airport with American, United, and Delta service. (Flying into Myrtle Beach, SC is another convenient option.) Due to the remarkable beauty and quaint southern charm of this area, as well as this impeccable, authentic BADWATER race experience, many Badwater Cape Fear participants are now making this race an annual pilgrimage!

What's more, Bald Head Island and Fort Fisher Recreation Area both welcome this unique event with open arms every year and are excited to have us return. Honestly, I have never met friendlier or more helpful people than the North Carolinians. This is a dream venue for this event promoter!

The folks at Bald Head Island Conservancy – Chris Shank, Melissa Blackmon, and Pam Smith in particular – have been ongoing sources of insights and wisdom and it has been an absolute pleasure to learn about, and support, the outstanding and important work that the Conservancy is doing on the island and beyond. We also thank the North Carolina Division of Coastal Management for allowing our runners to experience the heavily protected lands they oversee.

Village Manager Chris McCall, the Village Council, and all the staff at the Village of Bald Head Island are extremely supportive of the race, along with VBHI Public Safety Director Alan May and his team who are out in force to help us host a safe and successful race. Big thanks also to Park Superintendent Jeffrey T. Owen and his staff at Fort Fisher State Recreation Area for all they do. Likewise for the Friends of Pleasure Island State Parks with whom we began a wonderful relationship in 2017!



Smiling Face, Buckles, and Final Cape Fear Finishers in 2019.



L-R: Rock stars Robert Lee, Julie Lee, Luke Way, Stacey Shand, and Chris Shank after the 2019 race.

Local business owners are always very supportive: Claude Pope and his team at Maritime Market cater the pre-race social mixer, finish line food, and post-race breakfast. Our many friends across Bald Head Island and in Southport are also very helpful.

Our superstar race day volunteers include Poul Lindgaard, Eleanor Erickson, Scott Kollins, Keith Weitz, Robert and Julie Lee, Emily Ryan, Rachel Bonistalli, Pamela Hogue, Stacey Shand, Luke Way, Amy Costa, Megan Steinebach, Courtney Spratt, and many others: I thank all of them for making this race incredibly memorable and a great experience for everyone!!

Yours in sport,

Chris Kostman

Chief Adventure Officer and Race Director

Historical Data, Badwater Cape Fear, 2014-2019:

Total Number of Participants: 833 (263F / 570M)

Total Number of Unique Entrants: 619

Total Number of Unique Finishers: 607

Nationalities Represented:

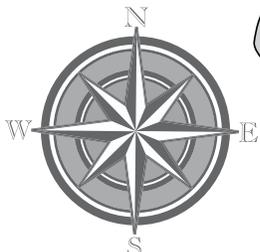
Armenia: 1	Mexico: 3
Australia: 1	Philippines: 10
Canada: 13	Portugal: 1
Cayman Islands: 1	Singapore: 1
Colombia: 3	Turkey: 1
Germany: 2	United Kingdom: 9
India: 2	USA: 783
Japan: 1	Venezuela: 1

American States Represented: 38

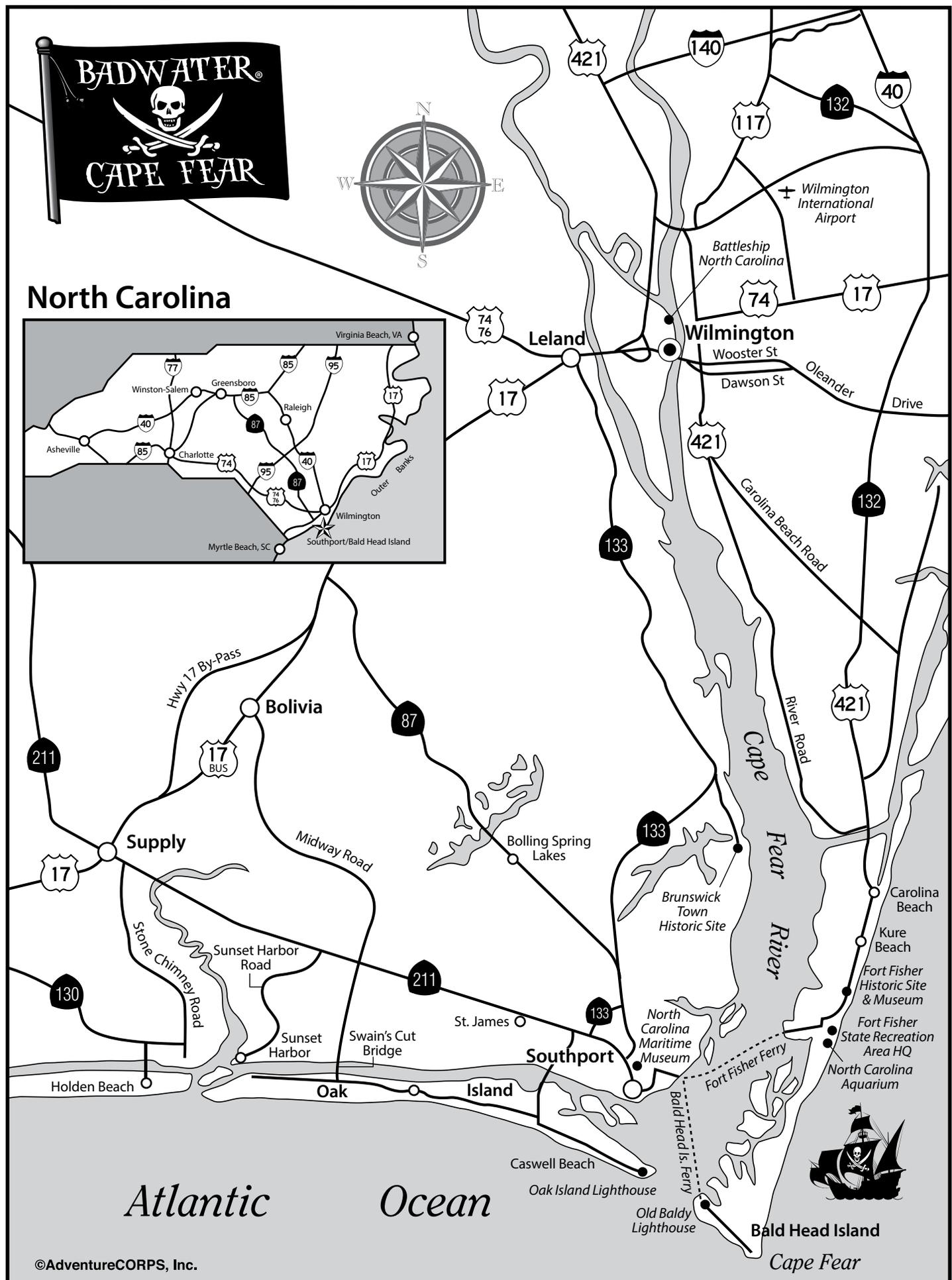
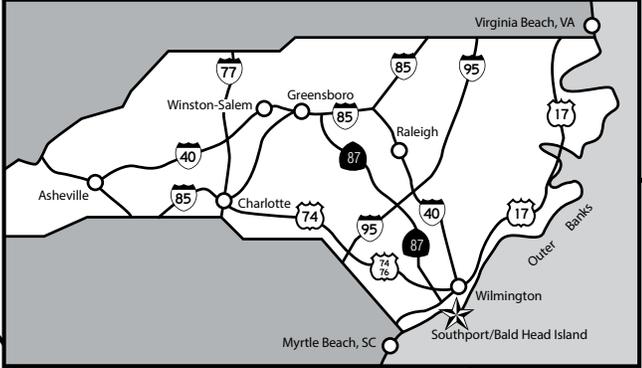
Hats Off to our four Six-Time Finishers!

- Bob Becker, Fort Lauderdale, FL, age 68-73
- Timothy Henderson, Sayville, NY, age 44-49
- Keith Straw, Malvern, PA, age 59-64
- Gerald Tabios, Elmhurst, NY, age 44-49





North Carolina



Atlantic Ocean

Bald Head Island
Cape Fear

2021 Badwater Cape Fear Schedule of Events

Friday, October 1

0900: No Host Coffee / Breakfast Meet-Up at Maritime Market. Come meet, or reconnect, with fellow Badwater family members while enjoying good drinks and food! There's no better way to start the day!

All Day Suggestions: Enjoy a program hosted by or at the Bald Head Island Conservancy! (Info at BHIC.org) Climb to the top of Old Baldy Lighthouse! (The race will start at its foot and the view from up top is not to be missed! Info at OldBaldy.org)

1500-1800: Racer Check-In at Bald Head Island Conservancy. Location: 700 Federal Road (far eastern end of the island).

ALSO 1500-1800pm: Social Mixer for runners, staff, volunteers, family, and friends - also at Bald Head Island Conservancy. Beer, non-alcoholic drinks, and snacks will be served. Held concurrent with Racer Check-In.

1800 onwards: We recommend dinner at Jules Salty Grub (formerly Mojo's) or Delphina, both on the marina.

1855: Sunset.

Saturday, October 2

0223: High Tide

0600 (recommended) or 1900 (risky): Runners not staying on Bald Head Island must depart via ferry from Deep Water Marina in Southport. (Ferries depart hourly from SPT to BHI on the hour from 600am to 1100pm on Saturdays.)

0620: Sandpiper Coffee at Bald Head Marina opens extra early just for the runners and race fans coming over on the 600am ferry! Stop in for java and treats!

0642: Morning Twilight (First light in sky)

0715: Late Check-In at the start line for runners who did not come over on Friday to do so.

0707: Sunrise

0725: 700am ferry from Southport arrives; it is a ten-minute walk from the ferry to the race start line at the lighthouse. Hurry!

0745: Race starts at Old Baldy Lighthouse

0915: First runners pass the 12-mile mark at BHIC.

0955: Low Tide

1155 (app.): First runners return to BHIC at 50km mark

1430 (app.): First 51.4-mile finishers

1446: High Tide

1545: Mandatory Cut-Off for 51.4-mile finishers to depart BHIC at mile 32 for their second loop to and from Fort Fisher

1645: Mandatory Cut-Off for Officially Finishing the 50km Race (9 hour time limit)

1854: Sunset

1919: Evening Twilight (Last light in sky)

2145: 51.4-mile Race Course Closes at BHIC (14 hour time limit)

2229: Low Tide

2330: Final ferry departure from Bald Head Island. (Ferries depart hourly from BHI to SPT on the half hour from 630am to 1130pm on Saturdays.)

Sunday, October 3

0830-1000: Breakfast Buffet at Maritime Market, mid-island: Breakfast is complimentary for all registered racers and volunteers, and available for a nominal charge to all family and friends. EVERYONE, PLEASE ATTEND!

Other Sunday Suggestions: Enjoy a program at the Bald Head Island Conservancy! Lay on the beach, go swimming, paddling, or kite surfing, cruise the island on a beach cruiser, shop at the Conservancy's "Turtle Central" store, relax!

BHI CONSERVANCY PROGRAMS

Our friends at the BHIC offer interesting programs for children, grown-ups, and even ultra runners every day, so visit BHIC.org for the schedule and to register!



MARITIME MARKET

Location: 8 Maritime Way. Mid-island, near North Bald Head Wynd / Federal Road and Muscadine Wynd.

Main Number: 910-457-7450. Orders to-go, including pizza, family meals and platters: press 2, or dial direct: 910-269-2850. Online at maritimemarketbhi.com

Market Hours:

8am - 6pm, Monday - Thursday

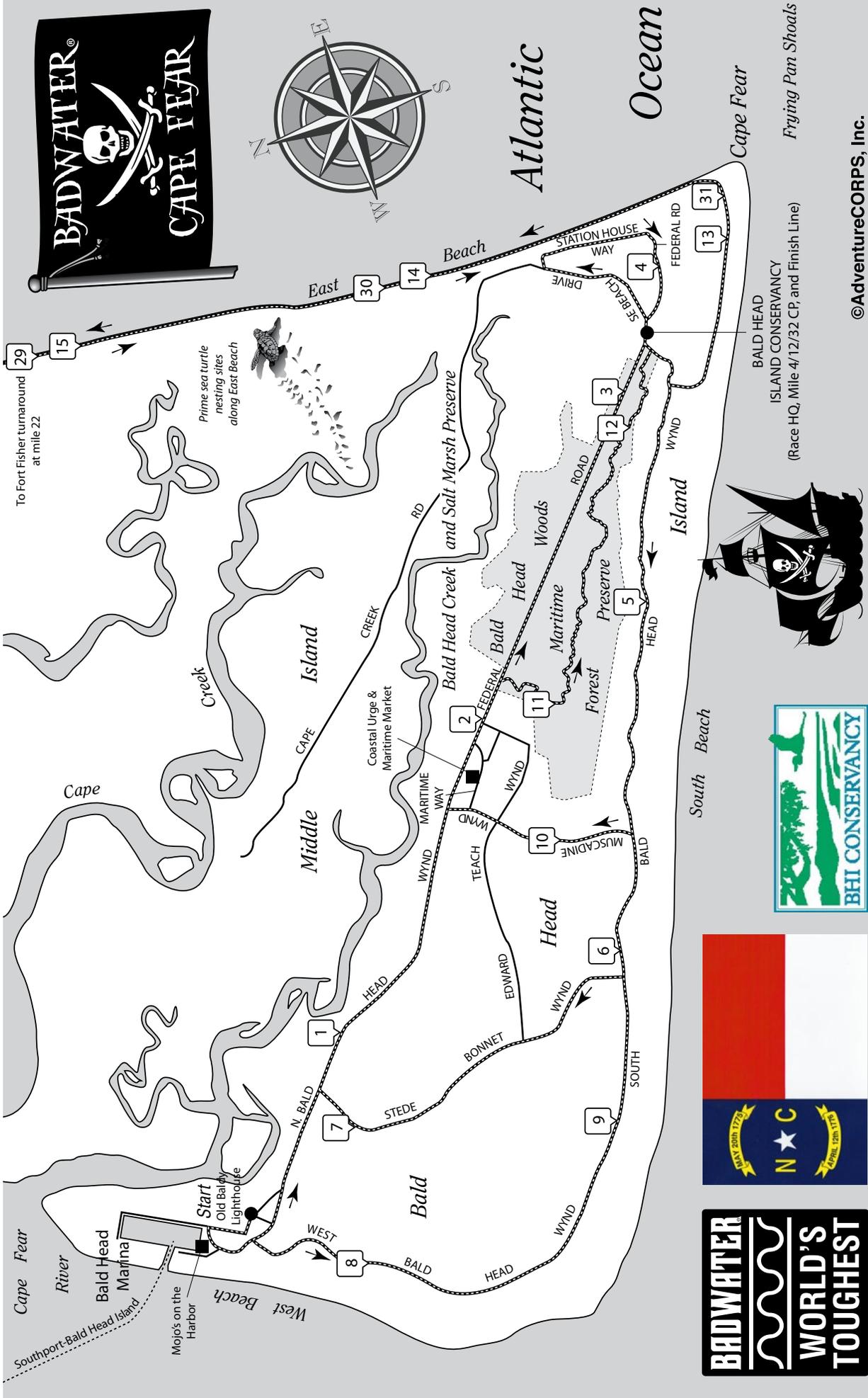
8am - 7pm, Friday - Saturday

8am - 4pm, Sunday

Cafe Breakfast: 8am - 11am

Cafe Lunch: 11:30am - 2pm Monday - Saturday

11:30 am - 1:00 pm Sunday



To Fort Fisher turnaround at mile 22

Prime sea turtle nesting sites along East Beach



BALD HEAD ISLAND CONSERVANCY (Race HQ, Mile 4/12/32 CP, and Finish Line)

Frying Pan Shoals

©AdventureCORPS, Inc.

<i>Distance (mi.)</i>	<i>Landmarks</i>	<i>2nd Lap Distance</i>
0.0	Start at Old Baldy Lighthouse <i>Cross over creek bridge, then head east across island</i>	
3.2	CP1: Pass Race HQ at Bald Head Island Conservancy <i>Loop around east end of island via Station House Way</i>	
4.1	CP2: Pass Race HQ at Bald Head Island Conservancy Head west on South Bald Head Wynd	
6.1	Right / north on Stede Bonnet Wynd	
7.2	Left / west on North Bald Head Wynd	
7.6	Left / south on West Head Wynd	
8.6	Becomes South Bald Head Island Wynd (east)	
9.8	Left / north on Muscadine Wynd	
10.3	Right / east on North Bald Head Wynd / Federal Road	
10.8	Right / south onto North Carolina Coastal Reserve trail	
10.9	Stay left at Loop Trail sign	
11.0	Stay left onto Middle Trail	
11.6	Hard right onto East Trail	
12.15	Turn left at the end of trail onto road	
12.17	Turn right at stop sign	
12.21	CP3: U-turn at Race HQ at Bald Head Island Conservancy	(31.8) CP7
12.25	Head west, briefly, on South Bald Head Wynd	(31.84)
12.45	Turn left onto South Beach at Beach Access	(32.04)
12.55	Turn left / east onto South Beach	(32.14)
13.15	Turn left / north at Cape Fear onto East Beach	(32.74)
14.05	Pass final / northernmost BHI staircase / house	(33.64)
14.65	Bald Head State Natural Area sign in dunes	(34.24)
17.85	CP4: Enter Fort Fisher State Rec area beach fishing zone <i>NOTE: 4x4 vehicles possible (generally parked) and fishing lines on route</i>	(37.44) CP8
18.85	"Crossover 4" sign	(38.44)
19.8	"Crossover 3" sign	(39.39)
21.25	"No Vehicles Beyond This Point" sign	(40.84)
21.95	Turn left / west to Fort Fisher Ranger HQ wooden pathway	(41.54)
22.0	CP5: U-Turn at Fort Fisher Ranger HQ	(41.59) CP9
22.75	Enter Fort Fisher State Rec area beach fishing zone <i>NOTE: 4x4 vehicles possible (generally parked) and fishing lines</i>	(42.34)
24.25	"Crossover 3" sign	(43.84)
25.15	"Crossover 4" sign	(44.74)
26.18	CP6: End Fort Fisher State Rec area beach fishing zone	(45.77) CP10
30.0	Pass first / northernmost BHI staircase / house	(49.59)
30.4	Pass beach access, life preserver, 911 phone	(49.99)
30.9	Pass life preserver signpost at Cape Fear	(50.49)
31.55	Exit beach at Beach Access 35	(51.14)
31.65	Turn right onto South Bald Head Wynd	(51.24)
31.8	CP7: U-turn at Race HQ at Bald Head Island Conservancy <i>Repeat miles 12.21 to mile 31.8 as above, for a total of 51.4 miles (Second lap mileages are listed above in parentheses in the far right column.)</i>	(51.39) FINISH

BADWATER CAPE FEAR COURSE RECORDS

First	Last	M/F	State	Year	Distance	Age	Age Grp	Record Time
Ryan	Lange	M	New Jersey	2017	51.4mi	19	10+	9:45:00
Michael	Borst	M	Wisconsin	2015	51.4mi	21	20+	6:29:00
Daniel	Waldschmidt	M	South Carolina	2018	51.4mi	39	30+	7:05:00
Eric	Hunziker	M	Ohio	2018	51.4mi	48	40+	6:39:00
Mark	Matyazic	M	California	2016	51.4mi	51	50+	7:36:00
Keith	Straw	M	Pennsylvania	2016	51.4mi	60	60+	8:21:00
Bob	Becker	M	Florida	2018	51.4mi	72	70+	12:32:00
Leigh	Jackson	F	North Carolina	2017	51.4mi	29	20+	7:50:24
Anne	Wheatley	F	North Carolina	2019	51.4mi	34	30+	7:09:00
Suzi	Swinehart	F	Indiana	2018	51.4mi	45	40+	7:47:00
Patsy	Ramirez-Arroyo	F	Puerto Rico	2018	51.4mi	52	50+	8:22:00
Pamela	Chapman-Markle	F	Texas	2018	51.4mi	62	60+	9:49:00
Thad	Johnson	M	North Carolina	2017	50km	17	10+	5:21:00
Jacob	Featherstone	M	North Carolina	2019	50km	26	20+	4:49:00
Nathan	Wick	M	Dist. of Columbia	2016	50km	30	30+	4:16:00
Mark	McGeough	M	North Carolina	2018	50km	48	40+	4:23:00
Brett	Sobieraski	M	New York	2017	50km	53	50+	4:54:00
Mark	Mueller	M	Pennsylvania	2019	50km	60	60+	6:06:00
Bob	Becker	M	Florida	2016	50km	70	70+	6:58:00
Whitney	Conklin	F	North Carolina	2017	50km	28	20+	6:16:00
Addie	Green	F	Florida	2015	50km	35	30+	4:54:00
Suzanne	Tulsey	F	North Carolina	2019	50km	44	40+	4:33:00
Yoshiko	Jo	F	Pennsylvania	2018	50km	53	50+	5:40:00
Sonya	Bruffey	F	North Carolina	2018	50km	62	60+	6:48:00



Bald Head Lighthouse, known as Old Baldy, is the oldest lighthouse still standing in North Carolina. It was built to help guide ships past the dangerous shoals at the mouth of the Cape Fear river. Old Baldy was completed by 1817 for just under \$16,000 using bricks salvaged from the previous Bald Head lighthouse. A stone plaque above the entrance identifies the builder as Daniel S. Way, and the foundry for the lantern room, that was also salvaged from the old tower, as R. Cochran. Old Baldy was originally equipped with an array of 15 lamps and reflectors, and as technology improved, it later housed a Fresnel lens. It was decommissioned in 1958, but stands as a day beacon and symbol of Bald Head Island. The lighthouse has been restored and is open to the public; come climb its stairs to the top! Since 2014, Old Baldy has stood watch over the Badwater Cape Fear start line. Learn more at OldBaldy.org





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

2021 Badwater Cape Fear General Race Rules

1. The clock, and the race, start at 745am for all entrants.
2. There are only two divisions: men's and women's, and two distances: 50km and 51mi.
3. The clock does not stop for any reason until the race course officially closes after 14 hours.
4. Entrants must wear the assigned race number on the front of the body, visible at all times.
5. All runners are strongly encouraged to carry a cell phone at all times.
6. All runners should keep in mind that the race route is largely remote and aid is provided at just three locations along the route; carrying water and food at all times is strongly encouraged.
7. All running while on pavement must always be single file, on the far left side of the road. Be careful of, and courteous towards, golf carts, shuttles, bicycles, and other vehicles and pedestrians.
8. Please make your presence known at the three checkpoints located along the route, each time you pass them.
9. Runners must progress under their own power without drafting, helping, pushing, supporting, or any other type of physical assistance. Racers may only be accompanied by fellow racers. (No pacers are allowed and no outside assistance of any nature – other than the three official checkpoints – may be received except at the Bald Head Island Conservancy checkpoint, except in an emergency.)
10. Remember, at all times and in all situations, safety is the most important issue. This means safety for racers, volunteers, staff, and the general public. The roads and beaches are not closed for this event.
11. Please do not litter, mar, or pollute the landscape or environment.
12. Please must display courtesy, good taste, decorum, and sportsmanship at all times.
13. In all cases and circumstances, it is the intent, and spirit, of the rules which will govern their implementation and enforcement.
14. The range of possible penalties for breaking or disregarding rules include time penalties, disqualification, public shunning, loss of friends, humiliation, and/or being forced to swim back to Southport.
15. 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 willingly acknowledge this fact, as well as all other race rules, by attending the race in any capacity.

Time Limits

1. The time limit for the 50km race is nine hours.

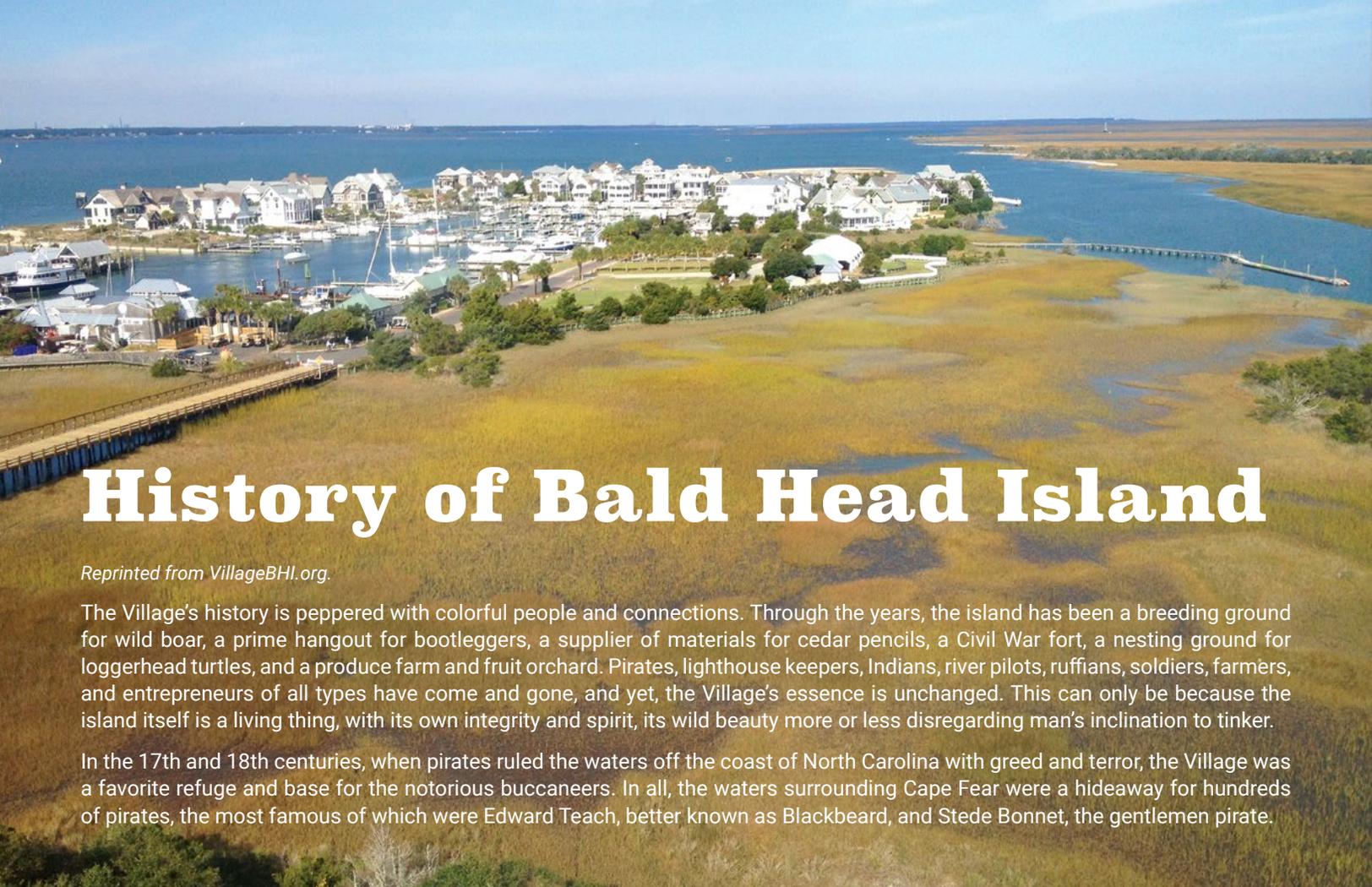
2. The time limit for the 51mi race is fourteen hours, with a mandatory intermediate cut-off of eight hours at mile 32 at BHIC. 51mi racers who arrive at mile 32 in more than eight hours (and in less than nine hours), will be recategorized as 50km racers and ranked accordingly.
3. Racers may change distances during the event, switching from 50km to 51mi, or vice-versa, so long as time cut-offs and limits are respected.

Leaving the Course or Withdrawing

1. Short cutting is not allowed. Likewise, there will be no allowance made for lost time or miles run in the wrong direction.
2. Do not "go missing." If you must withdraw from the race, please let us know.
3. All Emergency Evacuation costs for participants will be borne by that person or their heirs. The race organizers are in no way liable or responsible for emergency evacuation.

Legal and Bureaucratic Issues

1. If the event is canceled due to pandemic, hurricane, community disaster, or other force majeure, neither refunds nor credits will be given.
2. Although we anticipate using the same route each year, the final, exact route is subject to approval from various government agencies and is always subject to change due to various factors beyond our control.
3. All racers and must sign the Accident Waiver and Release of Liability / Release of Name and Likeness.
4. If you have any pertinent Medical History to report, such as drug allergies, diabetes, heart conditions, or other pertinent medical conditions, please fill out the optional Medical History Form, print it, and bring it with you to check-in. Basically, state anything that a medical professional should know if something were to happen to you and you were unable to speak for yourself. If you have nothing to report, you don't need to submit the form. The forms will be kept confidential and will be shredded after the event.
5. All racers must attend Racer Check-In (attending Racer Check-In on Friday is much preferred, but racers may check-in for the race instead at the start line on race morning.)
6. 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.



History of Bald Head Island

Reprinted from VillageBHI.org.

The Village's history is peppered with colorful people and connections. Through the years, the island has been a breeding ground for wild boar, a prime hangout for bootleggers, a supplier of materials for cedar pencils, a Civil War fort, a nesting ground for loggerhead turtles, and a produce farm and fruit orchard. Pirates, lighthouse keepers, Indians, river pilots, ruffians, soldiers, farmers, and entrepreneurs of all types have come and gone, and yet, the Village's essence is unchanged. This can only be because the island itself is a living thing, with its own integrity and spirit, its wild beauty more or less disregarding man's inclination to tinker.

In the 17th and 18th centuries, when pirates ruled the waters off the coast of North Carolina with greed and terror, the Village was a favorite refuge and base for the notorious buccaneers. In all, the waters surrounding Cape Fear were a hideaway for hundreds of pirates, the most famous of which were Edward Teach, better known as Blackbeard, and Stede Bonnet, the gentlemen pirate.

Bonnet, the so-called "Gentlemen Pirate" from Barbados, was an educated retired military officer who turned to piracy in 1717 as a second career in order to escape what one historian tactfully referred to as "the discomforts he found in a married state." During his short stint as a pirate, Bonnet terrorized the Carolina and Virginia coasts aboard his sailing sloop *Revenge* with 10 guns and 70 men. For a brief time, Bonnet even linked up with Blackbeard, a pirate who never carried the title "gentlemen." In 1718 Blackbeard was cornered and killed aboard his sloop, *Adventure*, by two warships sent by the governor of Virginia. Just three weeks later, Bonnet was captured at Bonnet's Creek in Southport by Colonel William Rhett of South Carolina and hanged near Charlestown. Their deaths marked a dramatic end to the Golden Age of Piracy in North Carolina.

Long before pirates ever discovered the Village's nooks and crannies, Native Americans hunted Bald Head Island and fished its surrounding waters in the spring and summer while maintaining permanent settlements on the mainland. The island was, in effect, a seasonal retreat for the Native Americans when supplies of corn or grain began running low.

Early river pilots were responsible for giving the Village its unique and descriptive name. Eager to offer their navigational services to

ships approaching the entrance to the Cape Fear River, they took up watch on a high dune headland on the southwest point on the island. According to local lore, the headland was worn bare of vegetation, making it stand out in contrast to the forest behind it. This "bald" headland served as a reference point for ships entering the river, and the name Bald Head Island has endured.

The year 1817 saw the construction of the island's most revered landmark and symbol, Old Baldy Lighthouse. Still the island's only "high rise," Old Baldy lighthouse was the second of three lighthouses built on Bald Head Island, and is the only one remaining. In 1903, the lighthouse was decommissioned when the Cape Fear Light was erected on the eastern end of the island, but it still serves as a prominent day marker for mariners. Due to restoration efforts by the Old Baldy Foundation and the generosity of hundreds of contributors, visitors to North Carolina's oldest lighthouse can climb up her 108 steps for a spectacular panoramic view of Bald Head Island.

The foundation of the Cape Fear Light can still be seen at the end of Federal Road across from three lightkeeper's cottages known as Captain Charlie's Station, after Captain Charles Norton Swan, a lighthouse keeper who lived with his family on Bald Head Island from

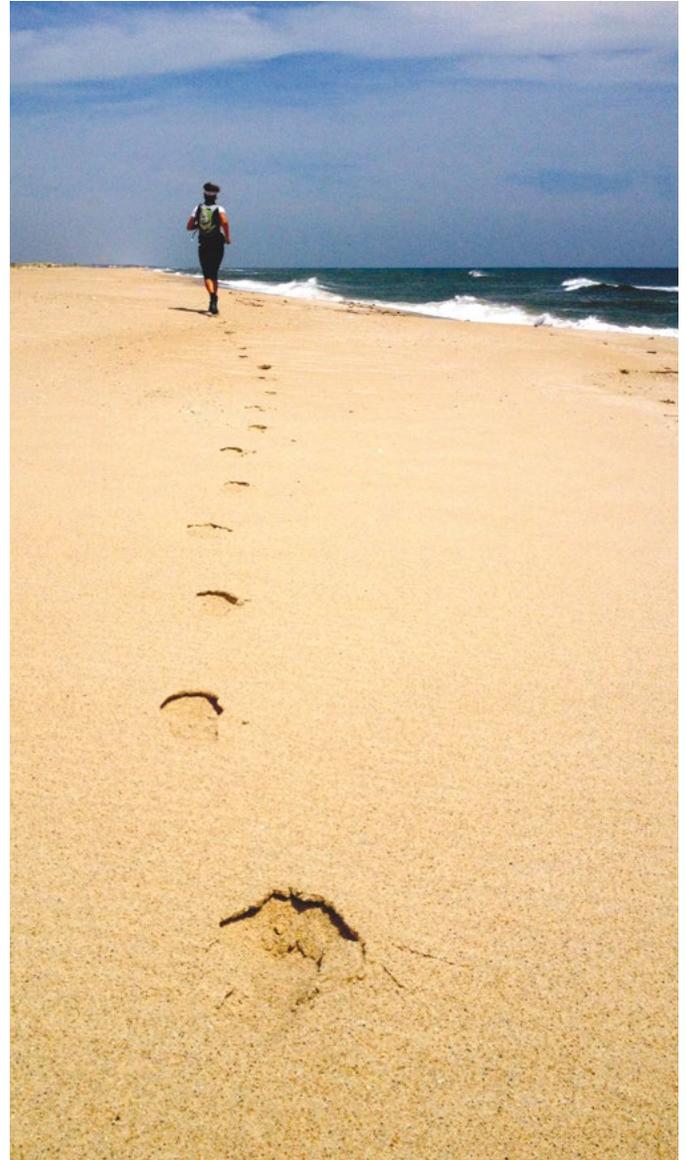
1903 until 1933. Captain Charlie's Station is listed in the National Register of Historic Places, and still commands a sweeping view of the dunes and sea at the island's southeastern point.

In addition to lightkeepers, in the late 19th and early 20th centuries the island was home to members of the U.S. Lifesaving Service, the predecessor to the modern day Coast Guard. Several buildings on the southeastern shore of the island overlooking Frying Pan Shoals served as equipment storage and housing for the servicemen. The only remaining Lifesaving Station structure is a boathouse that was moved from the beachfront to back among the dunes where it is now a private residence.

Another symbol of the past presence of lightkeepers and lifesaving servicemen on the island is the Old Boat House on Bald Head Creek, built in 1903 to store supplies and boats. A dramatic change in the shape of the creek channel over the last ninety years makes it appear to have moved several hundred yards.

The most notable feature on the 1864 Blackford map (established by B.L. Blackford) was Fort Holmes, located on the Bald Head promontory at the southwest corner of the island. Most of what we know regarding the fort can be gathered from a detailed sketch of its layout prepared in 1865. In addition, several firsthand accounts prepared by officers at Fort Holmes are extant. The fort had been hurriedly erected in 1863 and 1864 as part of a defense system for the lower Cape Fear. The string of forts from Bald Head to Wilmington kept the river, the "lifeline of the Confederacy," open for blockade runners. Given the presence of two navigable entrances, that at Bald Head and a second above Smith Island at New Inlet, the river was ideal for such traffic.

The sketch of Fort Holmes prepared by Federal occupation forces in 1865 indicates that the earthen breastworks extended the width of the island from the lighthouse to the southwest tip at Bald Head. A road to the opposite end of the island ran through the upper part



of the fort. The earthen works, it was noted, were reinforced with palmetto and oak logs. Four batteries extended along the east side of the fort. The fifth and largest, Battery Holmes, with bombproof magazines, was at the island's southwesternmost point. A flagstaff was positioned on the Bald Head promontory. Quarters and storehouses were located in several spots inside the fort.

Despite subtle shifts in sand and sea, Bald Head Island remains much as it was centuries ago. It still serves as a natural sanctuary for educators and students interested in coastal ecology, a home for a special breed of permanent residents that share a kinship of spirit with the hardy, independent lightkeepers and servicemen of days long past, and a refuge for vacationers seeking privacy and rejuvenation in a beautiful, relaxed setting.



Barrier Island Conservation • Preservation • Education

The Bald Head Island Conservancy is a non-profit organization that was founded in 1983. The Conservancy's mission is barrier island conservation, preservation and education. It is located in a unique area within the Smith Island Complex which includes Bald Head, Middle, and Bluff Islands, all of which are bounded by the Cape Fear River and the Atlantic Ocean.

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.

As a subsidiary corporation and partner of the Conservancy, The Smith Island Land Trust complements these efforts by preserving significant properties in perpetuity, ensuring that land within the island complex will be forever protected in its natural state.

As a 501 (C-3) nonprofit membership organization, we are able to continue this work through the generosity and commitment of our

many members, island visitors and other supporters. Please know that your support of our work is greatly appreciated!

Explore the natural wonder of Bald Head Island...

The Smith Island Complex is comprised of Middle, Bluff, and Bald Head Island. Spanning ten miles of beach and dunes, 10,000 acres of salt marsh, 4,000 acres of barrier island 'upland,' and 193 acres of Bald Head Woods maritime forest preserve, Bald Head Island is an exceptional location to conduct research and educational activities.

Hailed as one of the last remaining barrier islands in North Carolina where one can walk uninterrupted through salt marsh, maritime forest, dunes and beach habitats, Bald Head Island is **the** place for your next class or research trip. The Bald Head Island Conservancy is here to facilitate your discovery of Cape Fear.

Barrier Island Study Center – a LEED Gold Certified building that contains a wet laboratory, dry laboratory, multimedia theater, and research library. Environmentally friendly features include Cape Fear river wood, recycled floor tiles, skylights, recycled lint insulation, energy efficient lighting, zone specific HVAC system, SIPS walls, 7,000 gallon rainwater cistern, and recycled metal for support structures. The multimedia theater seats 40 and facilitates presentations, DVDs, and interactive meetings. The dry laboratory seats 10 and it outfitted with a complete glassware set, buret, basic measurement tools, and gas hookup. The wet laboratory seats 40 and contains microscopes, dissection scopes, autoclave, fume hood, touch tank exhibit with live invertebrates, and two walls of 10 gallon saltwater research aquaria. The research library contains 6 study carrels.

2020 SEA TURTLES

Bald Head Island, North Carolina

53 UNIQUE INDIVIDUAL MOMS

64% OF THOSE WERE NEW MOTHERS TO BHI

HIGHEST NESTERS 5 NESTS EACH

five moms | PERSEPHONE | TOMORROW
KKS219 | BILLIE | CARETTA

503

MOST EGGS
THOMASINA

331

MOST HATCHLINGS
THE LOVELY MRS. BITES

MOST FALSE CRAWLS 5
+ ACTIVITIES 10

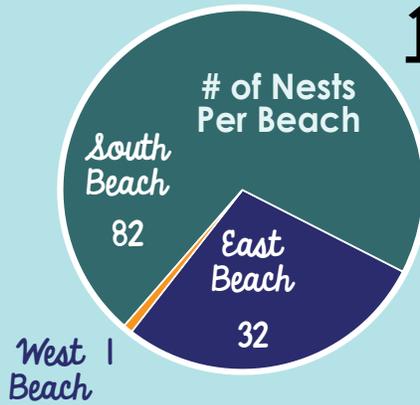
CARETTA

HIGHEST HATCH + EMERGE SUCCESS 98%

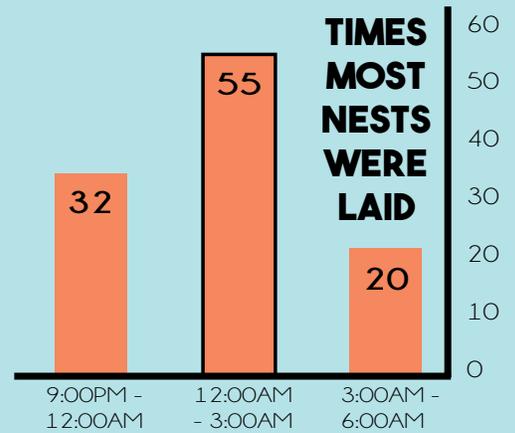
KKS 321

3

New Legacy Turtles
THE LOVELY MRS. BITES
TOMORROW
CLAIRE



125 FALSE CRAWLS
115 NESTS



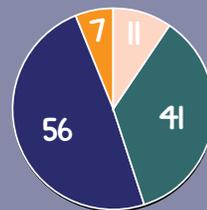
66%
HATCHING SUCCESS RATE

APPROXIMATELY **4,925** hatchlings WENT TO SEA FROM BHI

53 OF NESTS WERE RELOCATED TOO CLOSE TO HIGH TIDE

NESTS LOST

- 5 : PREDATION
- 50 : HURRICANE ISAIAS



NESTS LAID PER MONTH

May | 11 July | 56
June | 41 August | 7



BHIC.ORG

100%

OF NESTS WERE ADOPTED THROUGH ADOPT-A-PROGRAM

6

LEGACY SEA TURTLES NESTED
BILLIE CARETTA GIGI PERSEPHONE
SUMNER THOMASINA

Fort Fisher State Recreation Area, Kure Beach, NC



Reprinted from NCparks.gov

Prior to European settlement, the Cape Fear Native Americans, of the Siouan language group, lived in and around the lower Cape Fear peninsula; farming, fishing and hunting. Artifacts of the native culture, including pottery fragments, arrowheads and mounds of oyster shells, or midden piles, have been found in this area.

Early attempts at colonization in the area were unsuccessful, mainly due to conflicts with the Cape Fear Native Americans. Pirating, common in the area during colonial times, also contributed to the struggles of early settlers. About 1730, further upstream along the Cape Fear River from Fort Fisher, the port of Wilmington was settled. Wilmington became a bustling port, particularly important for its exports of naval stores - tar, pitch and turpentine products derived from the resin of the longleaf pine.

During the Civil War, Fort Fisher, built in 1861, served to protect the valuable port of Wilmington from Union forces. By late 1864, it was the last southern port open to trade. In this same year the first of two Union attacks on Fort Fisher took place. The fort held strong during the first battle and Union forces withdrew, but the Confederacy was not so lucky the second time.

In early 1865, a fleet of 56 ships bombarded the fort prior to a land assault by a force of more than 3,300 infantry. After a six-hour battle, Fort Fisher was captured and the Confederate supply line was broken. It was the largest land-sea battle fought in any war up to that time. The outcome contributed significantly to the outcome of the Civil War. Approximately three months after the fall of Fort Fisher, the Civil War came to an end.

In the late 19th century, a long rock jetty called "The Rocks" was built west of Fort Fisher to aid navigation by stopping shoaling in the Cape Fear River. Completed in 1881, The Rocks closed the former New Inlet, once used by Confederate blockade-runners to avoid the U.S. Navy, and created a lagoon, now called "The Basin". Today, The Rocks and The Basin are part of the Zeke's Island component of the North Carolina National Estuarine Research Reserve, and 1160-acre area of outstanding estuarine and ocean resources with extensive marshes and tidal flats.

The southern tip of New Hanover County became an island (now known as Pleasure Island) in 1929 when the U.S. Army Corps of Engineers dredged Snow's Cut (named for Major William A. Snow, Chief Engineer for the Wilmington District). This cut is a canal that connects the Cape Fear River to Masonboro Sound and is now part of the Intracoastal Waterway.

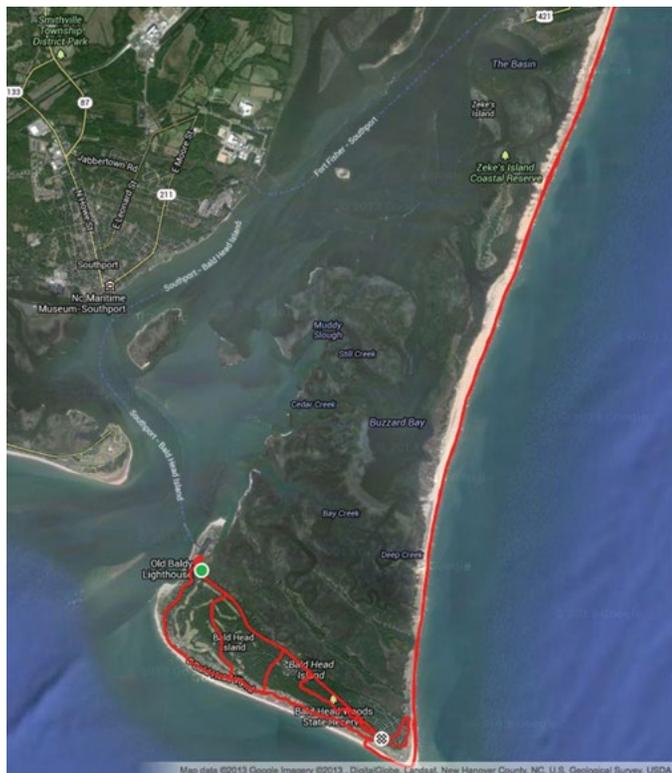
World War II caused huge economic and social changes in the Wilmington area as industrial development and shipyards boomed. Civilian workers and military personnel poured into the area during the war years, causing Wilmington's population to quadruple.

In late 1940, construction began on Camp Davis, located about 30 miles north of Wilmington. The base used five remote training sites along North Carolina's southern coast, and Fort Fisher became the primary firing range. The range stayed open until 1944, training many military personnel and aiding the war effort. A bunker still remains along the Basin Trail from the World War II base.

From 1955 to 1972, Robert E. Harrill, who became known as the Fort Fisher Hermit, lived in the World War II bunker. He became a celebrity and philosopher of sorts, becoming known to the thousands of visitors who came to Fort Fisher during those years. Harrill relied on nature for much of his food, eating oysters, clams and fish as well as what he would grow. Over time, as his popularity and reputation grew, he also benefited from donations left by his many visitors.

Fort Fisher State Recreation Area was established as a unit of the North Carolina State Park system in 1986 when 287 acres were transferred from the Historic Site to the Division of Parks and Recreation. Today, Fort Fisher offers beach access, educational programming and many other amenities to hundreds of thousands of park visitors annually.

For more information, visit NCParks.gov and Facebook.com/FPISP



Located just down the road from the FFSRA Park Headquarters in Kure Beach, NC (the northernmost point of the Badwater Cape Fear race route) is the **North Carolina Aquarium at Fort Fisher** and it is absolutely worth a visit! Visitors journey along "The Waters of the Cape Fear" – from freshwater streams and swamps, to coastline habitats, reefs and the open ocean. It is an outstanding destination for visitors of all ages.

The North Carolina Aquarium at Fort Fisher is located on US 421 approximately 15 miles south of Wilmington, just beyond Kure Beach. From Southport, take the Southport - Fort Fisher Ferry. For ferry schedule, call 910-457-6942 or toll free at 1-800-BYFERRY.

Open 9 a.m. to 5 p.m. daily (closed Thanksgiving Day and Christmas Day).

For more information, visit www.ncaquariums.com



FFSRA Park HQ, and also the northernmost checkpoint of the BWCF Race Route!



Fishing is a popular activity within the northern end of the race route. Watch for fishing lines!

Founded in 1984 by yours truly, AdventureCORPS® has made its name producing the world's toughest endurance races in dramatic, remote locations that few people would ever visit, let alone run or bike across. Held under the Badwater® banner, these events have allowed runners and bicyclists to explore Death Valley, Cape Fear, the Salton Sea, the Mojave Desert, and the Nevada outback in the USA, as well as the Okanagan Valley of British Columbia, Mustang region of Nepal, Yunan Province of China, and now Armenia and Artsakh.

With "chasing the horizon" as our credo, we are extremely pleased to host the eighth Badwater Salton Sea on November 7-8, 2021. (We anticipate returning to our usual schedule next year, with a race date of May 1-2, 2022.)

A truly epic event in an otherworldly location, Badwater Salton Sea pits up to 115 of the world's toughest athletes, competing together on teams of either two or three, against one another, the route, and the elements. With its epic route and a team ultra running format unique to this race, it is the one of the most demanding and extreme running races on the planet.

The start line is the shoreline of the Salton Sea at Salton City, located at 234' (71m) below sea level in Imperial County. Runners traverse Anza-Borrego Desert State Park for the first 49 miles – including an 8-mile, 3500 foot single-track trail ascent - before stopping to pose with Rancheti, the Yeti of Ranchita, at mile 50. After another grueling ascent, the race finishes atop Palomar Mountain, San Diego County's almost tallest peak at 5500' (1676m) and the home of the world-famous Palomar Observatory. The race course covers two major mountain ranges for a total of 9,000' (2743m) of cumulative vertical ascent over its 81-mile (131km) distance.

We thank and salute the County of Imperial, County of San Diego, California Department of Transportation, and Anza-Borrego Desert State Park, whose staff - and permits - oversee this event. We thank all the AdventureCORPS staff for their hard work in hosting a smooth and successful race. We thank everyone involved with the event for their sense of adventure and unassailable commitment to sportsmanship, fair play, and esprit de corps.

We wish everyone - racers, crews, staff, sponsors, media, and fans - a safe and successful race this year. May this truly be a life-changing experience for everyone. Welcome, or welcome back, to the Badwater Family!

Yours in sport,

Chris Kostman

Race Director and Chief Adventure Officer



Chris with some of the 2019 finishers.



Historical Data, Badwater Salton Sea, 2013-2019:

Total Number of Participants: 516 (166F / 350M)

Total Number of Unique Entrants: 371

Total Number of Unique Finishers: 325

Nationalities Represented:

Armenia: 2	Mexico: 8
Australia: 5	Netherlands: 1
Belarus: 1	Peru: 1
Bolivia: 1	Philippines: 4
Brazil: 3	Poland: 2
Canada: 15	Serbia: 1
Cayman Islands: 1	Singapore: 1
Colombia: 1	Slovakia: 1
Czech Republic: 2	South Korea: 1
Denmark: 3	Sweden: 2
Germany: 7	Switzerland: 3
India: 1	United Kingdom: 10
Italy: 1	USA: 424
Japan: 14	

American States Represented: 39

Hats Off to our Six-Time Finisher!

- Emily Ryan, Washington, DC, age 39-44



2021 Badwater Salton Sea Schedule of Events

Friday, November 5

1900: Meet for dinner (no host) at the Borrego Springs Resort (across the driveway from the hotel lobby at The Arches.) The “cool kids” get to town on Friday in order to socialize and kick off things in style! ;-)

Saturday, November 6

0700-0830: Optional: Road and trail run around Borrego Springs past many of the incredible metal sculptures which dot the landscape and are known as Galleta Meadows. Depart on foot from Borrego Springs Resort lobby at 700am. (Approximately six miles with several stops for photos.)

1015: Optional: Meet at Hotel Lobby to carpool to Salton City to visit the start line area and first 35 miles of the Badwater Salton Sea race route. (All are responsible for their own transportation. Please carpool.)

1500-1600: Runner Check-In and Photos (Anza Room adjacent to Borrego Springs Resort lobby)

1600-1700: Pre-Race Meeting (Anza Room adjacent to Borrego Springs Resort lobby)

Overnight: Clocks shift back one hour!

Sunday, November 7

0500 Runners/Crews must depart Borrego Springs to the start line.

0543 Civil Twilight (first light in the sky)

0600 Absolute deadline to arrive at the start line at: 905 Sea Port Ave, Salton City, CA 92274

0609 Sunrise

0630 RACE START

1530 Time Cut-Off at Mile 35.23 (Borrego Springs): RUNNERS BEYOND THIS TIME CUT-OFF MUST WITHDRAW FROM THE RACE.

1630 “Nighttime” - as defined by us - begins: follow nighttime protocols.

1648 Sunset

1714 Civil Twilight (no light left in the sky)

1730 Time Cut-Off at Mile 40.6 (Lower Trailhead): RUNNERS BEYOND THIS TIME CUT-OFF MUST WITHDRAW FROM THE RACE.

Monday, November 8

0544 Civil Twilight (first light in the sky)

0610 Sunrise

1030 RACE COURSE CLOSSES (28 Hour Limit)

Course Records

Team	Names	Category	Year	Grp	Elapsed
The Septemberists	Pete Kostelnick & Jon Kuehler	2x Men	20+	2017	14:04:20
J-Ray	Jared Fetterolf & Ray Sanchez	2x Men	30+	2016	14:56:00
Too Legit To Quit	Dan McHugh & Walker Higgins	2x Men	40+	2018	15:36:00
Prickly Pair	Rober Buruss & Keith Straw	2x Men	50+	2016	23:58:00
That Married Couple	Kayla Delk & Kevin Delk	2 Mixed	30+	2018	19:53:00
Los Aventureros	Nelva Valladares & Mark Matyazic	2 Mixed	40+	2016	16:02:00
DingoBlonde	Amy Costa & Mark Matyazic	2 Mixed	50+	2016	17:33:00
Wingman Foundation	Monique Jacques & Brittany McCullough	2 Women	30+	2016	18:55:00
Sweat It Out	Molly Troy & Cheryl Tulkoff	2 Women	40+	2016	19:27:00
Island Girls	Pamela Chapman-Markle and Kerri Kanuga	2 Women	50+	2019	20:14:30
Disney McFarland USA	Carlos Cabanillas, Diego Diaz, and Oswaldo Velasquez	3 Men	30+	2015	15:09:42
Electrolyte Love	Walker Higgins, Jacob Jackson, and Dan McHugh	3 Men	40+	2019	15:05:00
Yinzers	Keith Straw, Jeff Gleason, and Bill Thompson	3 Men	50+	2014	19:39:00
Youth & Inexperience	Mike Arnspiger, Bob Becker, and Keith Straw	3 Men	60+	2015	25:30:53
Legend of the Dragon's Toothbrush	Jean Aponte, Rhea Loney, and Kevin Spruell	3 Mixed	30+	2019	19:35:45
Texas Relentless Roadrunners	Brian Hill, Alison Miller, and Brian Miller	3 Mixed	40+	2017	18:23:40
Stray Dogs	Jill Anderson, Bob Haugh, and Marshall Ulrich	3 Mixed	50+	2013	23:40:25
The Dharma Bums	Boni Collins, Jodi Samuels, Jodi Weiss	3x Women	40+	2015	22:37:40

Salton Sea



In 1901, the California Development Company, seeking to realize the Imperial Valley's potential for unlimited agricultural productivity, dug irrigation canals from the Colorado River. Heavy silt loads, however, inhibited the flow and new residents of the valley became worried. This prompted the engineers to create a cut in the western bank of the Colorado to allow more water to reach the valley. Unfortunately, heavy flood waters broke through the engineered canal and nearly all the river's flow rushed into the valley. By the time the breach was closed, the present-day Salton Sea was formed.

One of the attractions of the Sea is the abundance of life, manifested in the hundreds of species of birds that reside in, or visit, this important wetland habitat, and the fish that inhabit the waters. That is why some scientists have called the Salton Sea "California's crown jewel of avian biodiversity" and perhaps was the most productive fishery in the world.

This abundance of wildlife is particularly critical given the decline of wetlands. Over 90 percent of the wetlands of California have been lost. As California's wetlands decline, the importance of the Sea as a habitat for inland wetland species increases. The Sea's habitats support up to 40 percent of the entire US population of the threatened Yuma clapper rail, 80 to 90 percent of the American white pelican, and 90 percent of the eared grebe.

Besides the opportunity for bird watching and for fishing, the Salton Sea and its immediate vicinity offer recreational opportunities including boating, camping, off-roading, hiking, hunting, use of personal watercraft and photography. One of the attractions, the Salton Sea State Recreation Area, has 1,400 campsites in five campgrounds, hundreds of picnic sites, trails, playgrounds, boat ramps and a visitors' center.

Salton Sea Statistics

The Salton Sea, located in the southeastern corner of California, is actually a lake which occupies a desert basin known as the Salton Sink. This body of water covers a surface area of 376 square miles, making it larger than Lake Tahoe and Mono Lake. In fact, the Salton Sea is the largest lake in California. The Sea's current elevation is about 227 feet below mean sea level, its maximum depth reaches 51 feet and its total volume is about 7.5 million acre-feet.

Excerpted from <http://saltonsea.ca.gov>: The Salton Sea Authority.

Photo by Chris Kostman near the race start line.



Anza-Borrego Desert State Park



Anza-Borrego Desert State Park is the largest state park in California, featuring 500 miles of dirt roads, 12 wilderness areas, and many miles of hiking trails provide visitors with an unparalleled opportunity to experience the wonders of the California Desert. The park is named for Spanish explorer Juan Bautista de Anza and the Spanish word *borrego*, or bighorn sheep. The park features washes, wildflowers, palm groves, cacti and sweeping vistas. Visitors may also have the chance to see roadrunners, golden eagles, kit foxes, mule deer and bighorn sheep as well as iguanas, chuckwallas and the red diamond rattlesnake.

The Park is located on the eastern side of San Diego County, with portions extending east into Imperial County and north into Riverside County. It is about a two-hour drive from San Diego, Riverside, and Palm Springs.

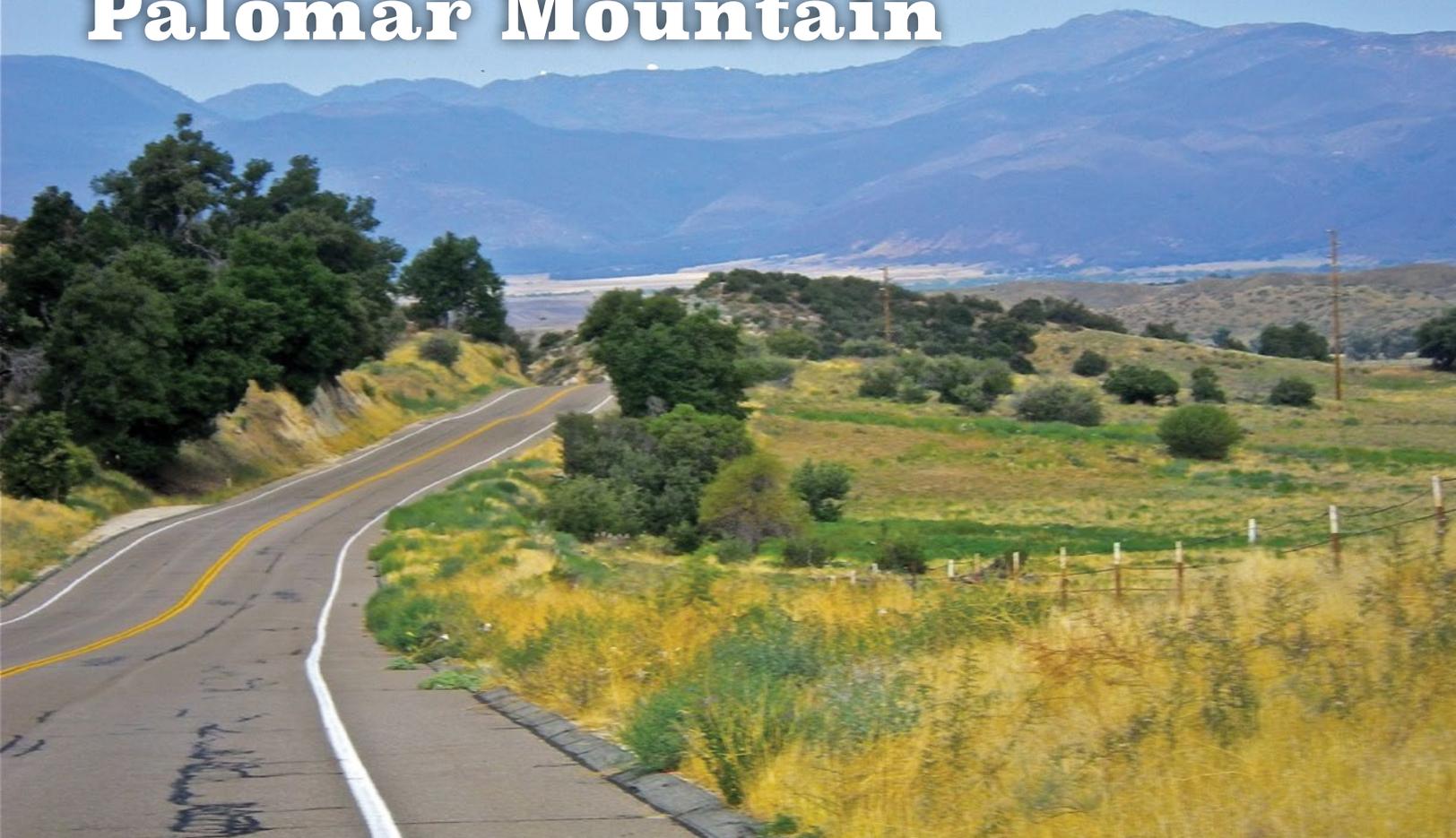
Most visitors approach from the east via Highways S22, S2, or 78. Visitors from San Diego via Highways 79 and 78 have the added pleasure of driving through the mountainous Cuyamaca Rancho State Park—quite a different experience from Anza-Borrego. The highways from the east climb to 2,400 feet or so and then descend about 2,000 feet to the valley. Where the highway breaks out of the high-country vegetation, it reveals the great bowl of the Anza-Borrego desert. The valley spreads below, and there are mountains all around. The highest are to the north—the Santa Rosa Mountains. The mountains are a wilderness, with no paved roads in or out or through. They have the only all-year-flowing watercourse in the park. They are the home of the peninsular bighorn sheep, often called desert bighorn.

There are more wonders in this desert than anyone could see in a lifetime, including wildflowers, which usually start blooming in force in late February or early March. Varieties of cactus bloom at all elevations but at different times, and for wildflower buffs they are the real prize. They tend to be “specimen” blossoms in colors ranging from red to yellow, and green. Other plants, such as the red chuparosa and the yellow brittlebush, show themselves as a mass of tiny flowers covering the surface of a shrub, or even a field of shrubs, or, in a good year, a broad expanse of pink sand verbena.

Excerpted from www.parks.ca.gov/?page_id=638

Photo by Ian Parker.

Palomar Mountain



Palomar Mountain is a mountain in the Peninsular Ranges in northern San Diego County. It is famous as the location of the Palomar Observatory and Hale Telescope, and known for the Palomar Mountain State Park.

The Luiseno Indian name for Palomar Mountain was "Paauw" and High Point was called "Wikyo."

The Spanish name "Palomar," in English meaning "pigeon roost," comes from the Spanish colonial era in Alta California when Palomar Mountain was known as the home of Band-tailed Pigeons.

During the 1890s, the human population was sufficient to support three public schools, and it was a popular summer resort for Southern California, with three hotels in operation part of the time, and a tent city in Doane Valley each summer.

Palomar Mountain is most famous as being home since 1936 to the Palomar Observatory, and the giant Hale Telescope. The 200-inch telescope was the world's largest and most important telescope from 1949 until 1992. The observatory currently consists of three large telescopes.

Palomar Mountain is the location of Palomar Mountain State Park,

a California State Park. There are campgrounds for vacationers, and there was a campground for local school children until the San Diego Unified School District was forced to close it due to state budget cuts. The park averages 70,000 visitors annually. The campgrounds in the park were temporarily closed on October 2, 2011, due to state budget cuts, and the park was among 70 California State Parks threatened by budget cuts in fiscal years 2011-2012 and 2012-2013, but the park and the campgrounds remain open.

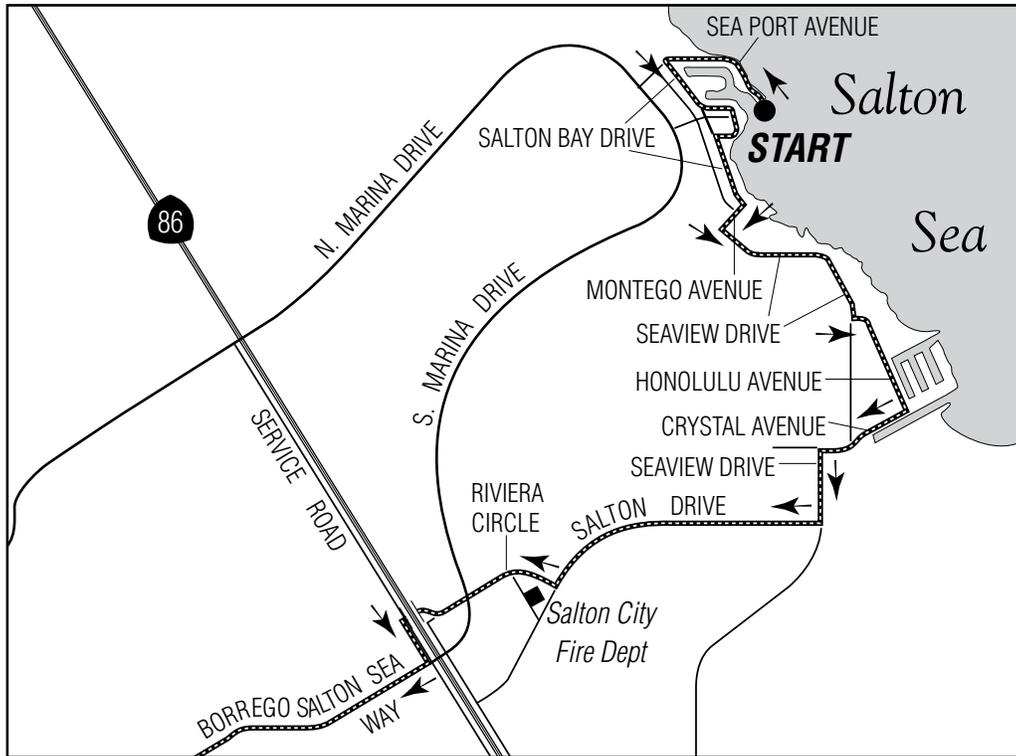
Palomar Mountain, especially in the state park area, is densely wooded with abundant oak and conifer tree species (pine, cedar, fir). Ferns are abundant everywhere in the shady forest. The forest is supported by annual precipitation totals in excess of 30 inches.

High Point in the Palomar Mountain range is one of the highest peaks in San Diego County, at 6,140 feet (1,871 m), surpassed by Cuyamaca Peak (at 6,512 feet (1,985 m)) and Hot Springs Mountain (the county's highest point, at 6,533 feet (1,991 m)).

Excerpted from http://en.wikipedia.org/wiki/Palomar_Mountain

Photo by Chris Kostman. That white dot on the ridge line, a bit left of center, is the Observatory.

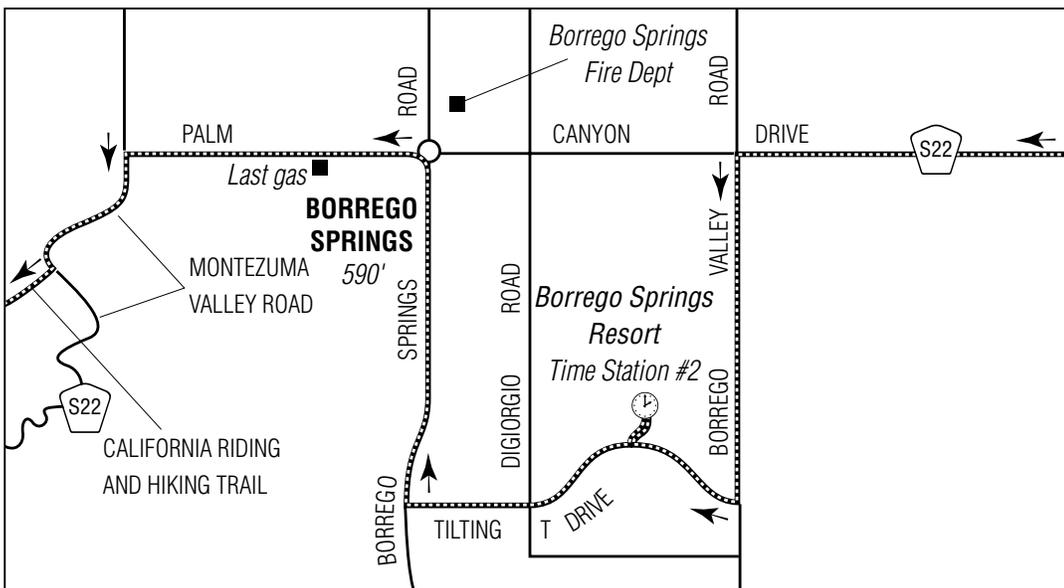
2021 BADWATER SALTON SEA OFFICIAL RACE ROUTE



Distance (mi.)	Landmarks / Notes	Elevation
0	Salton Sea Start Line at 905 Sea Port Ave, Salton City, CA 92274	-234 ft.
0.65	Left Salton Bay Dr.	
Note:	Support Crews, drive directly to Mile 6.93, NOT on the runners' route. Runners must self-support until 6.93.	
0.93	Left Flamingo Ave.	
1.1	Cross Yacht Club Dr.	
1.22	Road bears right	
1.34	Left Salton Bay Dr.	
1.7	Right Montego Ave.	
1.87	Left Sea View Dr.	
2.46	Stay right on Salton Bay Dr.	
2.83	Left Honolulu Ave.	
3.4	Right Crystal Ave. (T-int)	
3.9	Left Sea View Dr. (SS, T-in)	
4.27	Right Salton Dr. (SS)	
5.8	Right Riviera Circle	
6.34	Cross South Marina Dr. (SS)	
6.5	Veer right towards wash (off-road)	
6.65	Cross under CA 86 via dirt road	
6.7	Left Service Rd. just on other side of highway CA 86	- 120 ft.
6.93	Right Borrego Springs Seaway / S22 at huge gas station / mini mart	
Note:	Crews drive directly to here from start. Last Gas & Supplies until Borrego Springs.	
10.4	Cross Bantsch Trail (first climb)	

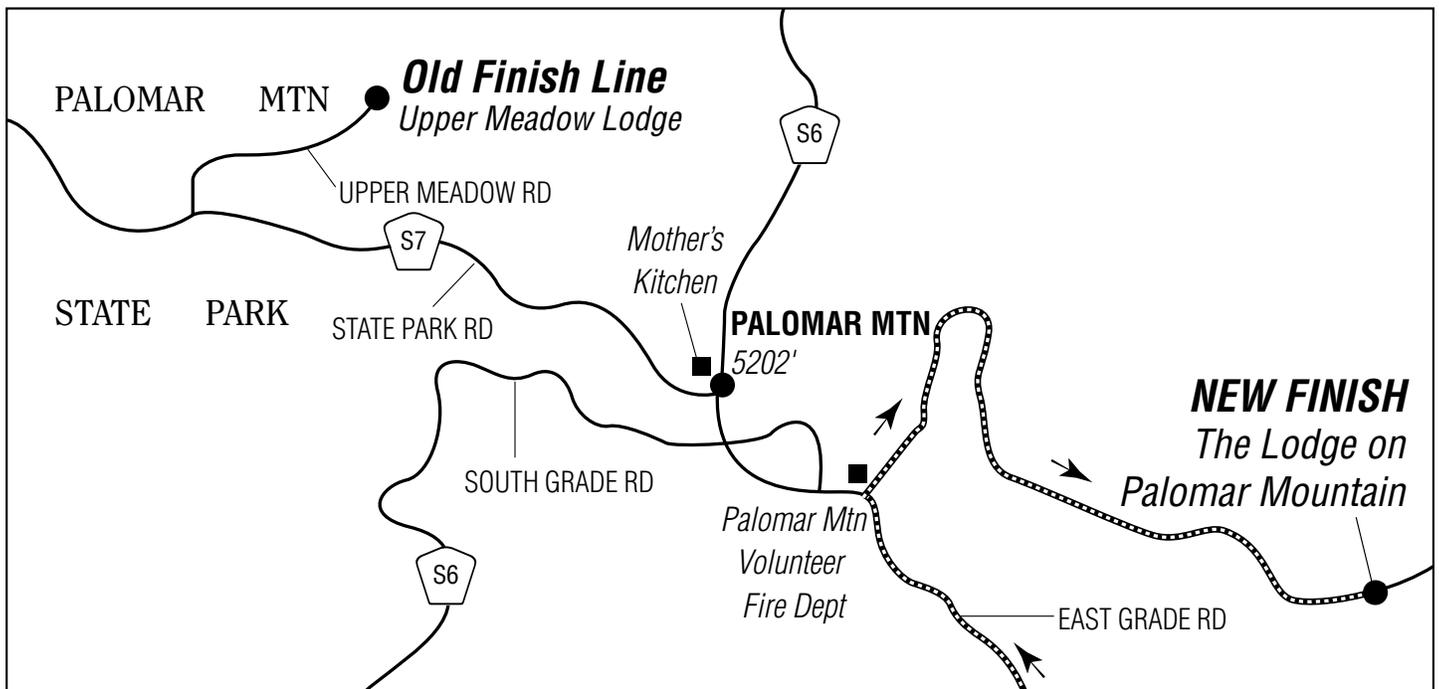
2021 BADWATER SALTON SEA OFFICIAL RACE ROUTE

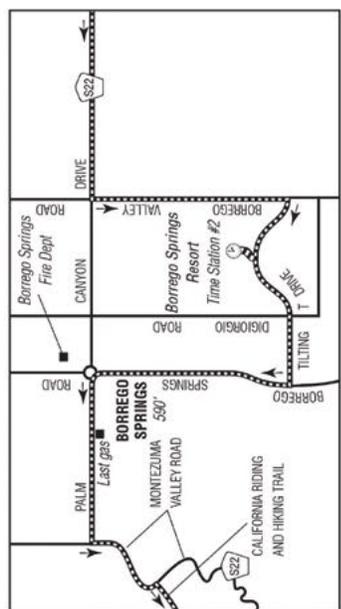
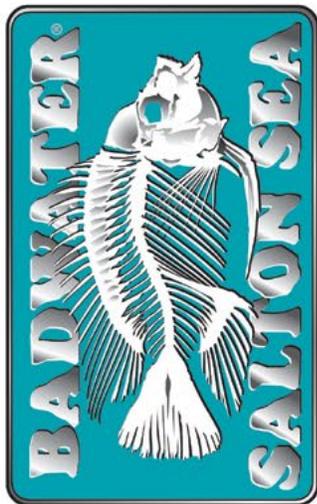
Distance (ml.)	Landmarks / Notes	Elevation
14.4	Checkpoint #1: USN Microwave Tower (enter San Diego County)	510 ft.
17.1	Big Scenic Overlook on Right	
19.3	Mile Marker 34	
23.15	Big walled pullout on left	
25.3	Anza-Borrego State Park sign (facing opposite)	
26.3	Mile Marker 27	
27.5	Pass Henderson Canyon Rd.	640 ft.
28.3	Mile Marker 25	
29.15	Mile Marker 24	
30	Road bear right, becomes Palm Canyon Dr.	570 ft.
31.35	Borrego Valley Airport & restaurant on right	520 ft.
32.75	Left Borrego Valley Rd. (SS)	520 ft.
34.46	Right Tilting T Dr.	
35.07	Right into Borrego Springs Resort	
35.23	Checkpoint #2: at resort lobby (U-turn here)	560 ft.
Note:	Runners must pass here by 1530!	
35.4	Right Tilting T Dr. (SS)	
36.6	Right Borrego Springs Rd. (SS)	
38.3	Left at Christmas Circle (runners may cut the corner)	590 ft.
38.6	Pass The Mall: Café, Outfitters in back	
38.8	Last Chance for GAS!	
39.75	Left Montezuma Valley Road / S22	750 ft.
40.55	Checkpoint #3: Right into dirt parking lot at Hellhole Canyon Trail	
40.6	Enter California Right and Hiking Trail (has 3800 ft. total gain)	880 ft
Note:	Runners must start trail by 1730!	
45.5	Pass east end of Culp Valley Fire Rd (connects to Montezuma Valley Rd)	3565 ft.
48.5	Rejoin paved Montezuma Valley Road: turn right to go uphill	3745 ft.
48.8	Summit of Montezuma Valley Road	4225 ft.
Note:	Support Crews, park and wait in this vicinity while waiting for your runners to finish the trail section.)	



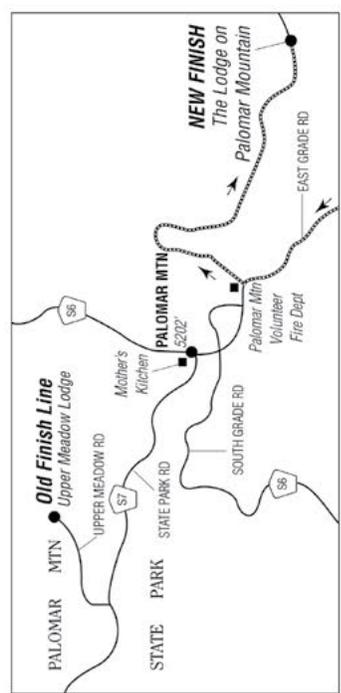
2021 BADWATER SALTON SEA OFFICIAL RACE ROUTE

Distance (mi.)	Landmarks / Notes	Elevation
50.2	Checkpoint #4: Montezuma Valley Store in Ranchita on Right by "Rancheti"	4100 ft.
50.35	Fire Station	
55.25	Right S2 (T-int; yield)	3500 ft.
59.9	Left SR 79 (SS, T-int)	3000 ft.
61.6	Mataguay Scout Ranch on left	2870 ft.
62.2	100km Mark! Huge gravel pullout on right	
63.35	CA DOT "Lake Henshaw" HQ on right	
64.2	Right on SR 76	2820 ft.
67	Viewpoint / Call Box / Large pullout on right	
68	Checkpoint #5: Lake Henshaw Resort on left / Store / Fire Station	2760 ft.
Note:	Please Telephone Finish Line as Runners Pass Here!	
68.75	Right S7 / East Grade Road	2720 ft.
70.55	Mile Marker 1.8	
72.8	Mile Marker 4.0: View of the Pacific!	
76.8	Mile Marker 8.0	
79.9	Turn right at Fire Station on Crestline Rd.	5260 ft.
Note:	This turn is just after Mile Marker 11.	
81	Finish on left at The Lodge on Palomar Mountain at 22228 Crestline Road Palomar Mountain, CA 92060	5665 ft.

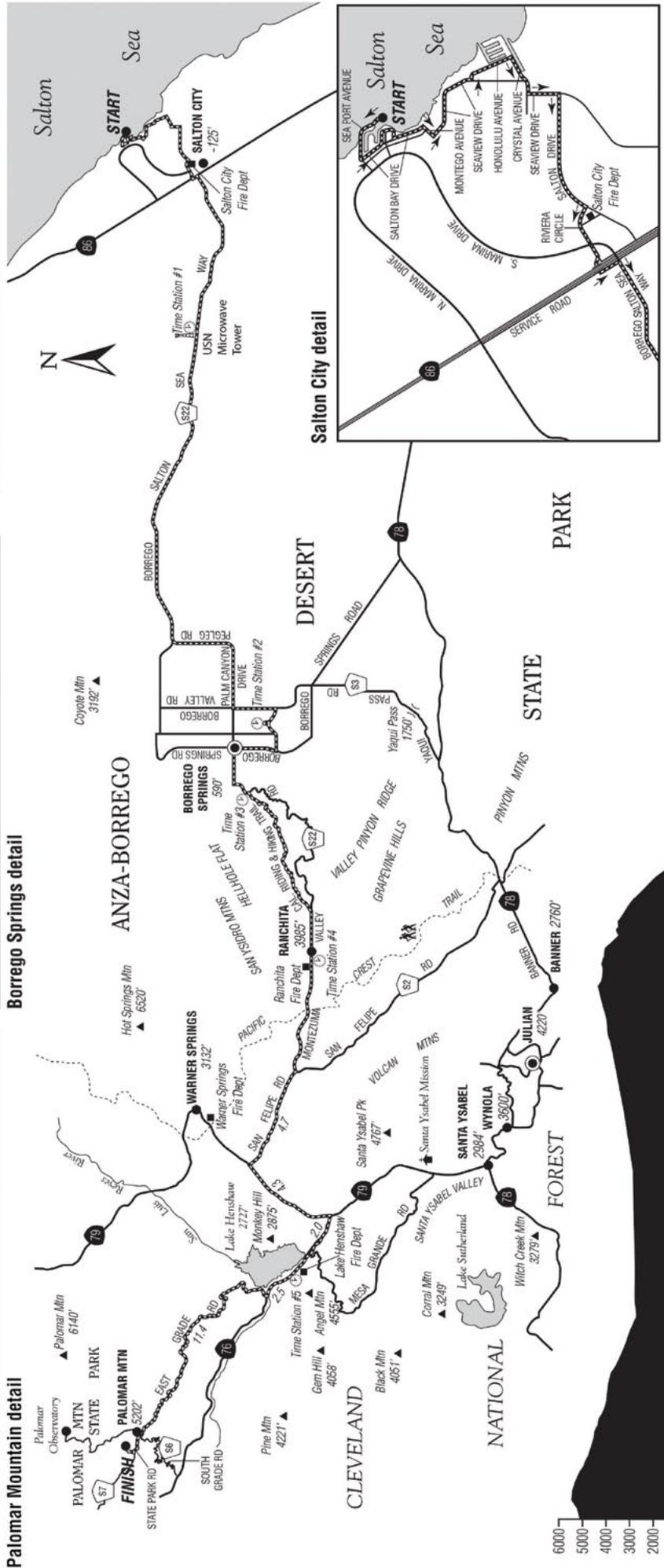




Borrego Springs detail



Palomar Mountain detail



Salton City detail



2021 Badwater Salton Sea General Race Rules

NOTE: This Fall schedule in 2021, after Daylight Savings Times ends, means the days will be short and also an expanded list of mandatory gear will be required on the trail section for ALL runners! Everybody - runners AND crew - should plan for cold and wet weather (and hopefully some heat, too)!

1. All runners must check in at the start line, ready to race, at 0545 and the race will begin at 0630 on race day. (This requires departing Borrego Springs no later than 500am.)
2. There are only two divisions: Duo or Trio, which are then subdivided into men's team, women's team, and mixed team sub-categories.
3. The race bib must be worn and visible at all times during the race. It can be placed anywhere obvious: hat, hydration pack, number belt, chest or back of shirt, etc.
4. There are mandatory intermediate cut-offs along the route. Specifically, all teams must have continued beyond the Borrego Springs Resort at mile 35.23 within nine hours of starting the race, while all teams must have continued onto the trail section which begins at mile 40.6 within eleven hours of starting the race. Teams / runners which exceed these deadlines will be declared DNF and MUST discontinue running and participation in the race.
5. For the trail section of the race, which starts at mile 40.6, every runner must carry a rain jacket (not just a windbreaker), beanie, gloves, an emergency blanket, whistle, reflective gear, front and rear blinky lights, head lamp or flashlight and a second set of new batteries for their light (or two separate lights / headlamps with new batteries), as well as cell phone, AMPLE hydration for six hours (1.5L or more), AMPLE nutrition for six hours, and other supplies. Reflective gear and blinky lights (in on position) must be worn at all times on the trail section, regardless of time of day. NOTE: The fastest teams cover the trail section in about 2.5 hours, while the slowest teams have taken as much as SIX HOURS to complete the trail section.
6. The clock does not stop for any reason until the race course officially closes after 28 hours. All racers must leave the course by the 28th hour (or sooner, if cut-offs are missed, as outlined above).
7. Running must always be single file and outside the white "fog line" on the edge of the roadway. Running should be off the left side of the road, facing traffic. Running well away from the pavement may be done on either side of the road, depending on which side is safest and has the best line of sight. The intent of the rules and the event's concept is that all running is done outside the white "fog line" and therefore never in any traffic lane (except during the first 6.9 miles through Salton City, where all running is along local roads.)

8. There is no "I" in "TEAM": All members of each team must remain together while running (within 25 meters) at all times. If members of a team become more than 25 meters apart, the lead runner, or runners, who allowed the gap to grow to more than 25 meters will be disqualified immediately. This applies for the entire 81 miles of the race course, especially on the trail section where teams should make an even bigger effort to stay well within the 25 meter limit. (Teams are expected to run together, single-file, essentially at all times. The 25 meter limit is only intended to allow privacy during nature calls, not to allow the runners on a team to spread out.)

9. Teams must make their presence known at all Time Stations located along the route; they must arrive at all Time Stations together and may only depart each Time Station together, unless one runner is dropping out of the race at that location. Team arrival times at Time Stations will be recorded and made public.

10. All members of each team must run the entire distance and cross the finish line together to be considered Official Finishers and be ranked in the results. Teams which do not complete the course intact (i.e. one or two team members drops out along the way) will not be ranked, but the remaining team members are encouraged to complete the race under all applicable race rules and will be listed as Official Finishers (but not ranked). Finisher buckles will be awarded only to runners who complete the full 81-mile route within the guidelines of the race, but only intact teams will be ranked as Official Finishers.

11. Teams may not change division (for example, from Trio to Duo) any later than the day prior to the race. If a Trio has one runner drop out during the race, that team will NOT be re-categorized as a Duo.

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

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 AdventureCORPS, Inc. In particular, t-shirts (such as for crew members) may not state "Badwater" nor feature any version of the race logo. (Remember, all runners receive a free Badwater Salton Sea t-shirt, as do two crew members per team.)
2. All racers must follow and complete the entire application and entry process, filling out all forms and paying all necessary fees.
3. All racers and all crew members must sign and fully complete the Accident Waiver and Release of Liability / Release of Name and Likeness. All racers must sign and fully complete the San

Diego County Waiver and Release of Liability. Each team must also bring the properly completed Check-In Form to Runner Check-In.

4. 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.

5. All racers and all support team members must attend Racer Check-In and the Pre-Race Meeting.

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

7. During Racer Check-In, all entrants must display ONE satisfactory reflective vest and TWO blinking red lights PER RUNNER and PER CREW MEMBER. These must be worn and utilized by the runners and crew at all times while outside of vehicles during nighttime periods of the race. Runners without satisfactory quality, or quantity, nighttime safety equipment will not be allowed to compete. (Hi-visibility clothing is highly recommended for both runners and crew members at all times, including during the day.)

8. All applicants must be a minimum of 18 years in age when submitting an application to race.

9. 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 - AND THEREFORE HIS OR HER TEAM - 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 Salton Sea finisher who fails a drug test within 36 months after competing in any edition of BADWATER Salton Sea will be retroactively disqualified from any and all previous BADWATER Salton Sea races, removed from all BADWATER Salton Sea race results, as well as banned for life from any AdventureCORPS events.

10. No commercial photographer / videographer may accompany or cover any racer or the race itself without the specific written permission of AdventureCORPS, Inc. Additionally, multiple government agencies may also require payment of a filming fee and signature of a filming agreement.

Support Crew and Assistance

1. Each team must be accompanied by a support crew comprised of no more than one four-wheeled motor vehicle and a minimum of

two crew members - both of whom are legally licensed to drive and at least one of whom can speak English - at all times. Each team must have its own dedicated personal support crew and vehicle; crew and support vehicles may not be shared, except informally in the spirit of the event, i.e., support crews may lend assistance to other teams, racers, or crews. "Unofficial crews or crew vehicles" and "family cheering squads" are not allowed at the race.

2. Runners must progress under their own power without drafting, helping, pushing, supporting, or any other type of physical assistance, EXCEPT from their teammates. (Teammates may help one another in any reasonable manner, including pushing, pulling, towing, and the like.)

3. 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.

4. Runners may not be accompanied by a crew member at any time while making forward progress on the race course, EXCEPT during brief moments when supplies are being handed off. Crew members that are handing off supplies, or otherwise providing aid to the runners, must be off the roadway at all times (i.e. outside the white line on the shoulder). Crew members may not run in front of race entrants at any time. Crew members may not accompany runners during the trail section of the race (mile 40.6 to mile 48.5.)

5. After mile 6.9 (leaving Salton City), runners must NEVER run abreast with other runners: All running must be single-file.

6. 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.

7. 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.

Support Vehicles

1. The California Motor Vehicle Code, and all local, county, and/or State Park 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; manufacturers specifications include those features.) Small Cars, Minivans, and SUVs are recommended. Oversize SUVs, vans, and trucks, or other

types of oversize vehicles are strongly discouraged. Motorhomes, RVs, "SportsMobiles," Sprinter Vans, and all types of Hummers are specifically not allowed.

3. All race vehicles must have highly visible signage on the back of the vehicle stating "CAUTION RUNNERS ON ROAD," as provided by the race organizers at Runner Check-In. (Teams may provide their own signage for this purpose, but its suitability will be inspected.)

4. All support vehicles must have their Team Name easily and clearly visible on all four sides. The lettering must be at least 10" (26cm) tall. A high-visibility "paint pen" may be used to mark the team name in the lower section of the windows on all four sides of the vehicle, so long as it does not obstruct the view through any of the windows. (The race organizers will have several paint pens available for this purpose.) Alternatively, or additionally, teams may choose to have custom signage made to identify their vehicle.

5. Except as noted above, the view through vehicle windows may not be blocked or obstructed with any signage, paint, or the like. If a team's support vehicle is found with blocked windows during the race, that team will be forced to stop and wait while the vehicle's windows are unblocked and signage properly mounted.

6. Vehicles must "leapfrog" the runner at all times. Generally speaking, each "leapfrog" should be approximately THREE MILES in length during daylight, and ONE MILE or more in length during nighttime. Racers may never 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 while the vehicle is in motion.

7. All support vehicles must have their headlights on while driving, 24 hours a day. From 700pm to 700am (our definition of nighttime), at all times while stopped or parked off the road, support vehicles must have their headlights turned off and emergency flashers turned on.

8. Vehicles must be parked completely off the road surface whenever they are stopped - with all four tires right of the white line, preferably at least 8 feet beyond the white line. 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, except in VERY LARGE pullouts at which the vehicle will be at least 15 feet from the edge of the roadway.

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 general public must always be respected. The roads are not closed for this event and may be, 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. His or her teammates may continue as an unranked team.

3. From 700pm to 700am (our definition of nighttime), while out of doors on the race course, all racers and all crewmembers must wear reflective material facing in all four directions, as well as blinking red lights facing front and rear. Racers and crewmembers are encouraged to wear high-visibility clothing during the day as well. We highly recommend the products from NathanSports.com and XXYZZX.com.

4. Racers are responsible for their own actions, their teammates' actions, and their crew's actions; crews are responsible for both their own actions and their racers' actions.

5. 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 we are on public roads with no road closures or traffic monitoring. Racers should not cross over the highway more than necessary; crew should cross the highway carefully to bring assistance to their racer.

6. All entrants and crew must study "Medical Risks in Badwater Salton," "Dangers of Running in the Heat," and "The Dangers of Hot Weather Running" as published at www.badwater.com

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 or team needs to leave the course, his/her crew must note the exact location with some sort of marker left on the ground, as well as resetting their odometer to mark the distance to the location. The racer and his or her team must then resume the race from the same place that he/she left it. Racers may only leave the course for appropriate reasons such as rest or medical attention. Focus must be kept on the speedy completion of the course.

3. If a racer or team withdraws, he/she or his/her crew must contact Race Headquarters or a Time Station immediately. Team Name, 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 brunch 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 Salton Sea race t-shirt and hat, BADWATER Magazine, as well as entry into the post-race brunch (for all racers and crew members).

2. All runners who complete the full 81-mile route within the guidelines of the race will receive the finisher's buckle and be recognized as Official Finishers, but only intact teams will be ranked.

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," safety, and poor sportsmanship will result in immediate disqualification of the racer, or racers.

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

- First Penalty: One Hour
- Second Penalty: Disqualification

4. Time penalties are imposed at the finish line by adjusting finishing times.

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

1. Have fun and keep smiling!



"Headed out to where the pavement turns to sand": Nobumi and Rina Iwamoto of Japan (club MY STAR 44) leave Borrego Springs behind.



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.

Welcome to the 2021 Badwater® 135 Ultramarathon, the 135-Mile World Championship globally known as the world's toughest foot race!

This year's race celebrates the 44th 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. We have run in their footsteps ever since.

The official head-to-head race began ten years after Arnold's pioneer trek, in 1987, with all four entrants finishing: Jeannie Ennis and Tom Crawford of the USA, and Eleanor Adams and Kenneth Crutchlow of the UK. The race has been held annually since then without serious incident and we are extremely proud of our safety record and the high esteem in which this race is held both locally and across the globe. We are equally proud that this event has become the de facto "Olympics of Ultra Running" with its incredible international appeal and participation. (The inside front cover of this magazine celebrates all sixty-one nationalities which have been represented on the Badwater 135 start line over the years!)

Due to the not-yet-over pandemic and associated international travel bans, we will not have as many nations represented as usual, but thankfully we have at least a dozen multi-cultural Americans who carry the flag for their home countries, and a handful of other foreigners who will be able to join us. Along with Native American entrant Arnold Begay of the Navajo Nation, we should have as many as nineteen flags flying proudly at this year's race!

This year marks 22 years of AdventureCORPS producing this historic and legendary race. Yours truly took the event over after the 1999 edition. (I had been invited to compete in 1991 - when I was 24 years old - but I ended up accepting a race directing job in British Columbia that summer instead. I have been organizing ultra-endurance events for as long as I have been competing in them - since 1984.)

It's been a privilege and an honor - and an epic challenge far surpassing anything I could have ever imagined - to organize and direct this race for the past 22 years. I humbly thank everyone, most especially the absolutely incredible race staff who make the magic happen each year. I bow deeply to the entire Badwater 135 race staff.

We also thank our colleagues at the National Park Service, U.S. Forest Service, Inyo County, Department of Transportation, and California Highway Patrol - for their important and crucial roles in hosting this race and helping to ensure that it runs smoothly, safely, and fairly.

Long live Badwater 135 and may we all forever remain #BadwaterStrong!

Yours in sport,

Chris Kostman

Race Director and Chief Adventure Officer

2021 Badwater 135 Schedule of Events

SUNDAY, JULY 11

0900-1030: Online Pre-Race Meeting: ALL racers, ALL crew chiefs, and ALL crew members must attend / view the Online Pre-Race Meeting. It will be archived for later viewing for those who cannot watch it live. A special code will be given out to prove it was watched.

SUNDAY, JULY 18

1300-1800pm: Racer Check-In and Registration / Retail of Badwater Gear: Held in the Wildrose Hall (formerly the Date Grove Diner) at The Oasis in Furnace Creek (next to golf course.) Each Racer and their designated Crew Chief must attend; all crew are welcome and encouraged to attend.

1830: Group Photo of All Racers at the Thermometer in front of the Visitors Center: 2021 Runners Only: please be ready to pose for the photo at 630pm!

MONDAY, JULY 19

Morning Rest & Relaxation; Vehicle Prep; Buy Ice and Supplies: Other options: Enjoy the pool – fed by Furnace Creek – at The Oasis, or go visit Badwater Basin to take photos next to the sign. Get your preparations done, but relax and rest while you can!

1200-1330: Retail of Badwater Gear: Held in the Wildrose Hall (formerly the Date Grove Diner) at The Oasis in Furnace Creek (next to golf course.)

1230-1330: Optional Races Rules Review / Questions & Answers / Discussion of Best Crewing Practices / Retail of Badwater Gear: Since the pre-race meeting is held online, we also host an in-person meeting to review race rules and best crewing practices, as well as a Q&A session. Anyone may attend. If you want or need to know more this race, how to crew, or anything else, please attend! Held in the Wildrose Hall (formerly the Date Grove Diner) at The Oasis in Furnace Creek (next to golf course.)

1330-1400: Media Check-In and Briefing: All journalists / media / photographers must attend. Held in the Wildrose Hall (formerly the Date Grove Diner) at The Oasis in Furnace Creek (next to golf course.)

1400-1500: Private Staff Meeting: Held in the Wildrose Hall (formerly the Date Grove Diner) at The Oasis in Furnace Creek (next to golf course.)

2000: 1st Wave Starts at Badwater Basin: ALL Wave 1 racers must check in at 730pm.

2130: 2nd Wave Starts at Badwater Basin: ALL Wave 2 racers must check in no later than 900pm.

2300: 3rd Wave Starts at Badwater Basin: ALL Wave 3 runners must check in and weigh in no later than 1030pm.

TUESDAY, JULY 20

0300: Furnace Creek General Store Closes. By special arrangement, the General Store at Furnace Creek will remain open on the first night of the race until 300am. Stop there to load up on plenty of ice, food, snacks, and drinks.

0400: Stovepipe Wells General Store and Gas Station Opens. By special arrangement, the General Store and Gas Station in Stovepipe Wells will open at 400am during the first night (first morning) of the race. They have food, snacks, drinks, ice, and much more. Please support them, and stock up heavily!

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

2000: Second Time Cut-Off. Deadline for ALL RACERS, regardless of starting wave, to pass Mile 72 (Panamint Springs Resort.) Panamint Springs Resort has restaurant food, snacks, drinks, ice, and much more. Please support them, and stock up heavily!

WEDNESDAY, JULY 21

0500: Third Time Cut-Off. Deadline for ALL RACERS, regardless of starting wave, to pass Mile 90 (Darwin Time Station.)

Afternoon: Fourth Time Cut-Off: ALL RACERS should pass Mile 122 (Lone Pine Time Station) within 42 hours of their own elapsed time, depending on starting wave.

1800: ALL racers are encouraged to complete the race by 600pm on Wednesday in order to attend the post-race get-together in Lone Pine. That equals a 46-hour completion for the 800pm wave runners, 44.5 hours for 930pm wave starters, and a 43-hour completion for 1100pm wave starters. However, all racers have 48 hours to complete the course, based upon starting wave time.

1900-2100: 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).

NOTE: After the Post-Race Get-Together, many runners and support crew members continue their socializing and celebrating at Jake's Saloon at 119 North Main Street in downtown Lone Pine (near Lone Star Bistro)!

2000 / 2130 / 2300: Course Closes for 1st Wave Racers at 800pm, at 930pm for 2nd Wave Racers, and then at 1100pm for 3rd Wave Racers.

SUNRISE / SUNSET (July 19, using Ridgecrest for reference): Moonset: 0131 | Morning Civil Twilight: 0520 | Sunrise: 0549 | Moonrise: 1555 | Sunset: 2004 | Evening Civil Twilight: 2033 | Note: July 23 is the full moon.

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



THE DANGERS OF RUNNING IN THE HEAT

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

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.

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

Changing any of these factors can either increase or decrease the heat index from those shown in the table. Be aware that heat index values of over 100 significantly increase your risk of heat-related illness.

Relative Humidity	Air Temperature (Degree 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.



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"> • Get to a cooler, air conditioned place • Drink water if fully conscious • Take a cool shower or use cold compresses 			<p>CALL 9-1-1</p> <ul style="list-style-type: none"> • Take immediate action to cool the person until help arrives 	

@NWSSacramento weather.gov/Sacramento @SacramentoOES SacramentoReady.org

2021 Badwater 135 COVID-19 Mitigation Plan

Although California has “re-opened its economy,” neither the state nor the country is not out of the woods yet with the pandemic. Also, we need to be good visitors to the Inyo County region. Please use common sense, courtesy, and best practices to do our part to keep everyone safe.

We are making the following small adjustments to the 2021 Badwater 135 and we ask that all runners, support crew, and staff respect these guidelines and modifications at all times!

Before Coming to Death Valley

- All runners, crew, and staff are encouraged to put extra effort into staying COVID-free in the weeks leading up to the race, and to wear a facial covering at all times while in airplanes, airports, and traveling.
- In the two weeks leading up to the event, all runners, crew, and staff who test positive for COVID-19, live with someone who is positive, or exhibit symptoms of COVID-19 must refrain from attending the event.
- Everyone who attends the race in any capacity is encouraged to be fully vaccinated and/or have a very recent negative COVID-19 test result.

Masks

Please be cognizant of any mask-wearing requirements which any business in California may impose, and follow their signage and guidance. Additionally, California requires all non-vaccinated persons to wear a mask while indoors in public settings such as hotels, restaurants, gas stations, stores, and public events.

Pre-Race Meeting

- This will be held via Facebook Live on July 11, 2021 instead of in person. Viewing is mandatory for all runners and crew. The special code given out during the meeting will be required at Racer Check-In.

Racer Check-In

- This will take place for five hours instead of three to minimize crowding. Please wear a mask while in line.

Start Line

- At the race starts, Support Crew may NOT go down to the Badwater Basin boardwalk. Crew must stay at the parking lot level, near the vehicles. If you want to get photos with runner + support crew, do so on another day or well before 1930 on race day.

Post-Race Pizza Party in Lone Pine

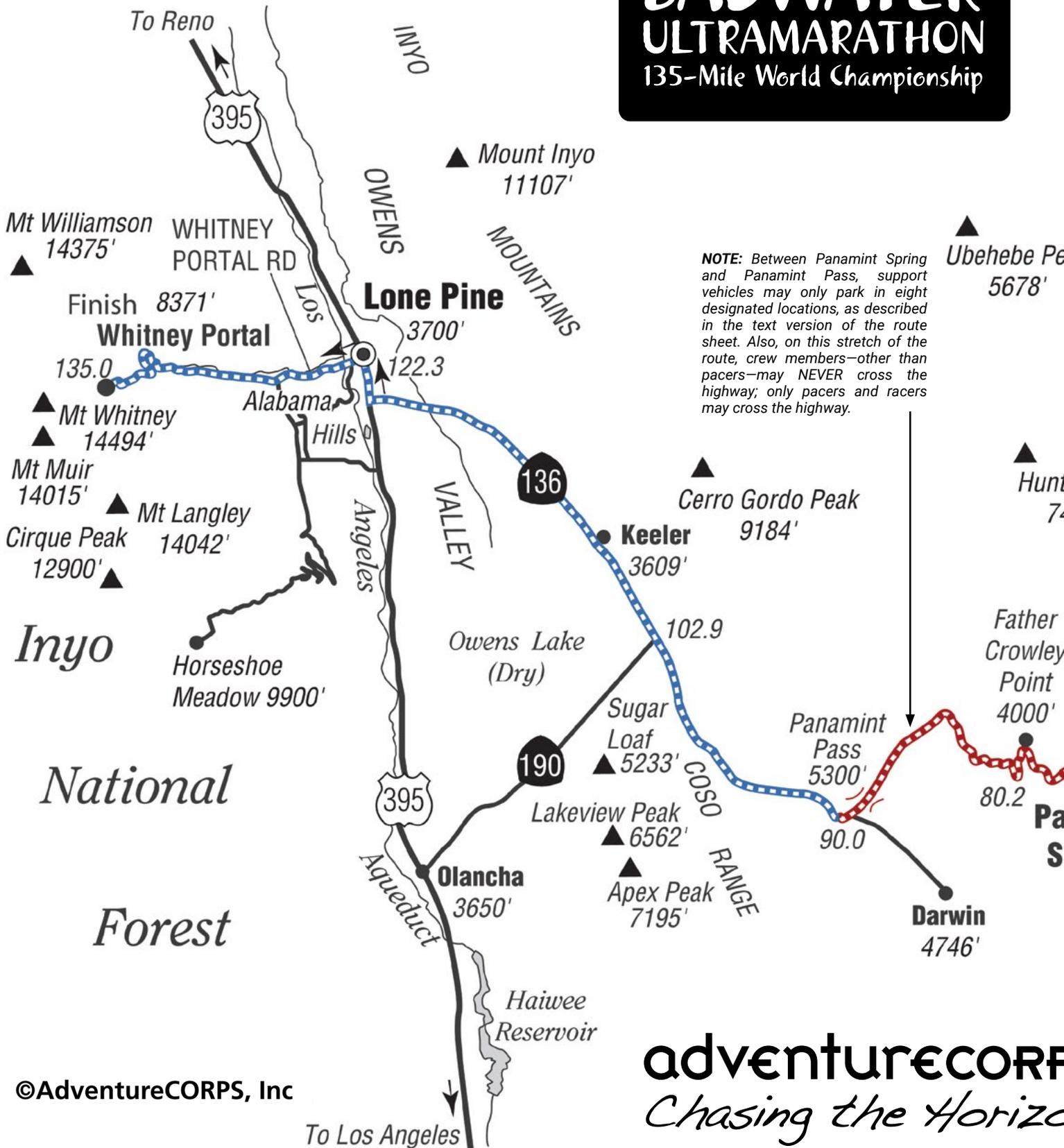
- Please wear a mask while in line for food.

General Health, Hygiene, and Attestations

- Runners and Support Crews must prioritize personal hygiene and hand-washing (or use of hand gel) at all times during the race and race activities. Hand gel or hand-washing supplies must be brought by each runner’s support team and used frequently.
- The location of restrooms along the route will be provided to all participants (in the magazine, P57.)
- Attending the race in any capacity is understood to be a self-attestation that you are currently not sick with COVID-19, nor displaying symptoms, and will wear a mask indoors in public settings if not fully vaccinated.

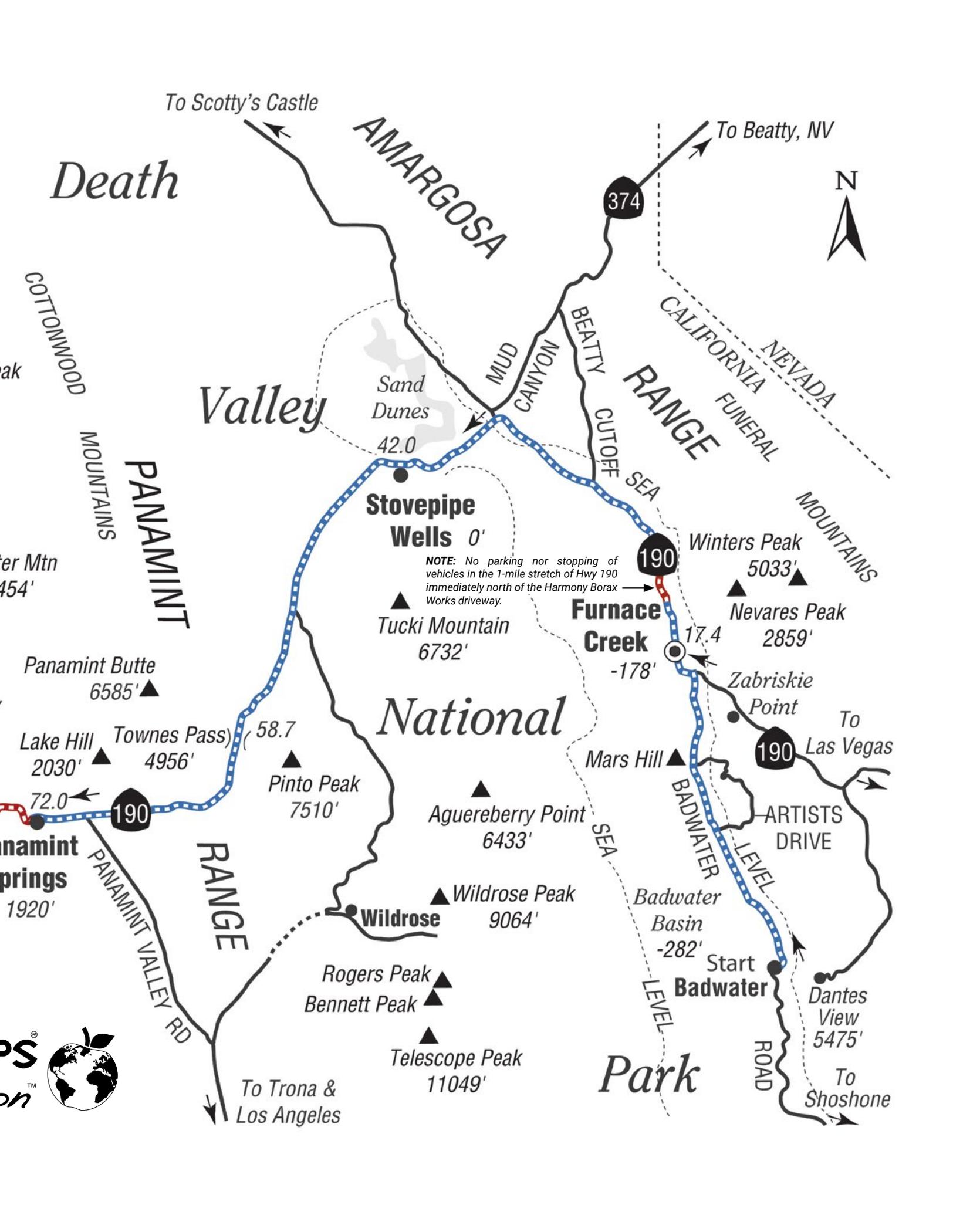


BADWATER[®] ULTRAMARATHON 135-Mile World Championship



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adventureCORPS
Chasing the Horizon



2021 Badwater 135 Official Race Route

LANDMARK	Dist. (MI)	Ele. (FT)	MARKER
<i>NOTE: TL = Traffic Light; SS = Stop Sign; T-Int = T-Intersection; Jct. = Junction</i>			
Badwater Basin: Head north	0	-282	
<i>Crews will be held for 10 minutes after each wave begins, then released in small batches.</i>			
Former location of Telescope Peak Sign on L.	1.8	-200	
Wide Shoulder on Right	3.1		
<i>Natural Bridge turnoff on R (PACERS MAY JOIN AGE 65+ RUNNERS HERE)</i>	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. (45 MPH) (TOILET)	14.5	-165	
Jct. Hwy 190 & Badwater Rd. (SS): Go Left onto 190 north (Cell Service Begins)	16.5	0	
<i>Watch Speed Limit! (Don't be like that Aussie team in 2015!)</i>			
Timbisha Shoshone Reservation on L.	17.2	-140	
The Oasis (Furnace Creek Ranch) on L.: General Store open until 300am (TOILET)	17.5	-165	
<i>Park in lots, not along roadway, throughout Furnace Creek!</i>			
Furnace Creek Fuel on L. (Time Station #1 located here.). (TOILET)	17.6		
<i>Dumpsters available to dump garbage and recycling at Gas Station.</i>			
Park Service Visitor's Center on L. (Please use running path on left of roadway)	17.7	-165	
Furnace Creek Campground on L.	17.8	-170	
Harmony Borax Works on L.: <i>Park here and let runner go ahead</i> (45 MPH)	18.2	-170	
NO STOPPING, SLOWING, or PARKING NEXT 1 MILE! Drive to beyond curves!	19.1	-100	
<i>Parking allowed beyond curvy section, where safe.</i>	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	
MINIMAL PARKING NEXT 6 MILES! SOFT SHOULDERS. Do not get stuck in sand.			
Devil's Cornfield sign on R.	36.3	-80	MM 91.5
Small Parking Area on R. (Space for 2-3 cars only)	37.1		
Camera Sign pullout on R. (Space for 4-5 cars only)	37.5		
Sand Dunes Parking Lot on R. (35 MPH) (TOILET)	40.2	0	
Approaching Stovepipe Wells (Cell Service Begins)	41	0	
Stovepipe Wells Village Welcome sign: Gas / Food / Store opens at 400am!	42	0	
Time Station #2 & Medical HQ on L. by hotel courtyard & flag. (TOILET)	42.2		
<i>(PACERS MAY JOIN RUNNERS OF ANY AGE HERE.)</i>			
<i>It's a long climb, and a long way, to Panamint Springs, 30 miles away! Be ready!</i>			
<i>It is CRITICAL to stock up on water, ice, and snacks, plus real food for the crew!</i>			
<i>Also, take advantage of the low gas prices while you are here!</i>			
Mosaic Canyon turnoff on L.	42.4	5	
1000' Elevation sign on R. (65 MPH)	46.8	1000	
Short downhill (Cell Service ends along the ascent of Towne Pass)	47.2		
DIP Sign on R. (Do NOT park in dips as you will be invisible!)	48.5		
2000' Elevation sign: All racers must pass this location before 1000am	50.7	2000	MM 77.5
Wildrose Station parking lot on R. (TOILET)	51.2	2450	
<i>Please park neatly and use designated spaces. Don't park "haphazardly."</i>			

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 parking 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). (TOILET)	72.7	1970	
Time Station #3 on L. at resort hotel, NOT at 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 at the Resort			
WARNING: Parking only allowed in designated locations for next 12.2 miles: follow odometer 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	
Parking Allowed on R. in gravel pullout with yellow left arrow (1.8 from PSR)	74.5		MM 53.5
Parking Allowed on R. in small gravel pullout on right (3.4 from PSR)	76.1		
3000' Elevation sign on L. (end parking allowed zone)	76.2	3000	
Parking Allowed on R. in large gravel shoulder on right (4.7 from PSR)	77.4		
Parking Allowed in large gravel pullout on L. before left curve (5.3 from PSR)	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) Parking Allowed in lot (7.9 from PSR)	80.6	4000	
Please no sleeping on the ground in parking spaces! (TOILET)			
Parking Allowed in elevated gravel pullout via small drive on R. (8.7 from PSR)	81.4		
Parking Allowed in wide gravel pullout on R. (35 MPH) (10.5 from PSR)	83.2		MM 44.8
Summit (no sign) Parking Allowed in large gravel pullout on R. (12.2 from PSR)	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! (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	

LANDMARK	Dist. (MI)	Ele. (FT)	MARKER
Jct. Hwy 136 & Hwy 190: Go straight / north onto Hwy 136 "Lone Pine 19mi"	103.4	3935	
SOFT SHOULDERS NEXT EIGHT MILES: BE CAREFUL! DO NOT GET STUCK!			
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	
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	
Runners may run on right side of road into and through Lone Pine: stay well away from traffic lane.			
WARNING: SPEED LIMITS DROP TO 25mph as you pass through town!			
Comfort Inn on R. (45 MPH)	121.1		
Chevron / Lee's Frontier Deli / Mini Mart (Great sandwiches!) on L. (TOILET)	121.3		
Best Western on R. (35 MPH)	122		
Lone Pine City Limits sign on R. (25 MPH)	122.3		
McDonald's on L. (TOILET)	122.6	3610	
Dow Villa on R.: Time Station #5 & Medical HQ (TOILET)	122.7	3610	
All racers must pass within 42 hours of their individual wave start!			
All racers with time penalties must "check in" and serve penalty time here before continuing.			
Portal Road (the only traffic light in Lone Pine): Go left	122.8	3610	
Tuttle Creek turnoff on L.	123.3	3770	
WARNING: Park and Drive Properly! NO slow driving; NO stopping in roadway!			
Los Angeles Aqueduct	123.4	3855	
Lone Pine Creek	124.5	4200	
Movie Flat Road on R.	125.5	4590	
WARNING: Park and Drive Properly! NO slow driving; NO stopping in roadway!			
Lone Pine Creek	125.7	4800	
Horseshoe Meadow turnoff on L.	125.9	5000	
Cuffe Ranch turnoff on R.	127.1	5100	
WARNING: Park and Drive Properly! NO slow driving; NO stopping in roadway!			
Whitney Vista Drive on L	127.4		
Olivas Ranch Road on L.	128.4	5300	
"Entering Active Bear Area"	129.2		
WARNING: Park and Drive Properly! NO slow driving; NO stopping in roadway!			
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	
Time Station #6 in Large gravel pullout on R.	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	
WARNING: Park and Drive Properly! NO slow driving; NO stopping in roadway!			
Meysan Lakes trailhead on L.	133.9	8035	
Family Campground on L.: Support vehicles should drive ahead to park!	134	8100	
Overflow Parking Lot on L.	134.6	8200	
Finish Line of the World's Toughest Foot Race: Congratulations!	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.

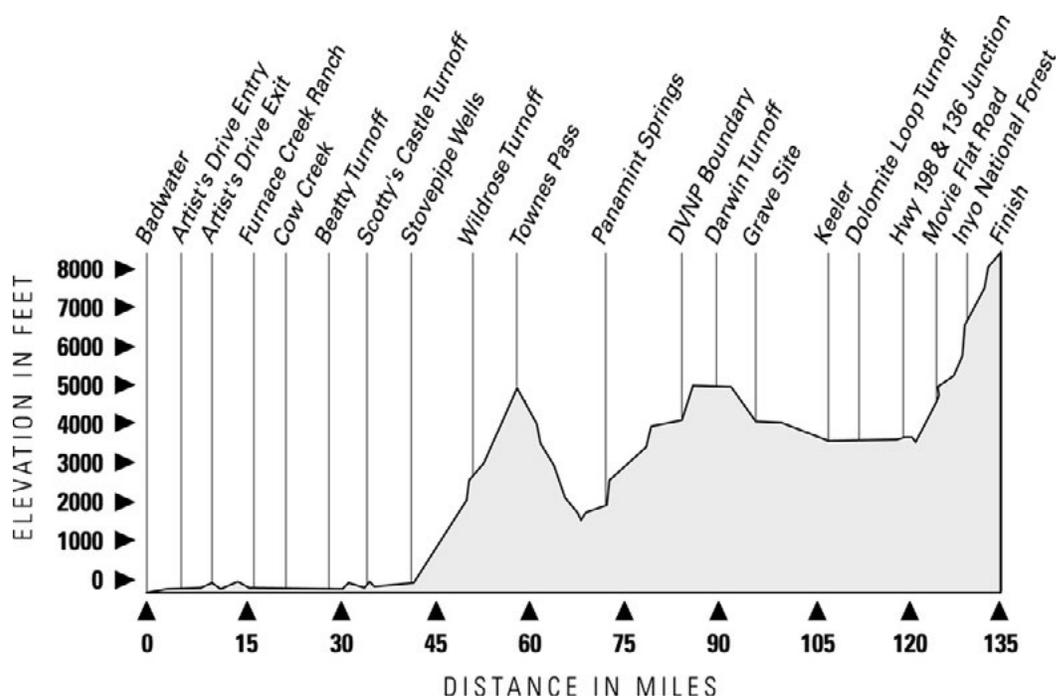
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SAMPLE TIME SPLITS FROM ACTUAL BADWATER 135 FINISHERS

Do you want to see how you are doing compared to previous finishers of the race? Here are several actual time splits from the past few years for your reference. This data is useful before the race for planning and visualizing, but also during it, to make sure your current pace is reasonable or feasible. The splits are grouped into 34, 40, 44, and 46 hour finishing times so you have a few samples for each finishing time. Use these to help stay on track for YOUR finish!

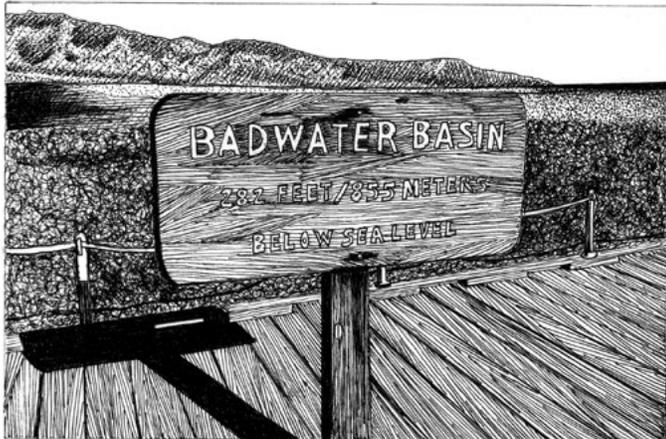
Sample Splits								
FC / 17	SPW / 42	PSR 72	Darw 90	LP 122	P Rd. 131	Whitney 135	Who	When?
2:55	7:22	14:55	20:34	29:06:00	32:49:00	33:57:14	Ray Sanchez	2015
2:23	6:39	12:41	17:01	29:34:00	32:46:00	34:00:10	Michele Graglia	2016
3:19	8:30	17:01	23:09	30:38:00	32:58:00	34:04:14	Jill Anderson	2015
2:36	6:40	13:40	18:57	29:01:00	32:47:00	34:10:50	Ed Ettinghausen	2016
3:31	8:19	15:38	22:11	33:54:00	38:31:00	39:59:59	Jason Romero	2015
3:17	8:21	15:22	20:42	34:56:00	38:42:00	40:14:10	Keith Straw	2015
2:46	8:08	16:58	24:04:00	34:59:00	38:50:00	40:36:11	Dale Cougot	2016
3:34	9:50	20:04	27:43:00	38:58:00	42:10:00	43:37:51	Jodi Weiss	2015
2:49	7:42	16:19	26:09:00	38:30:00	42:18:00	44:05:40	Joao Dami	2016
3:24	9:17	19:55	28:33:00	38:54:00	42:40:00	44:15:53	Derek Dowell	2016
3:32	9:22	18:40	27:48:00	38:44:00	42:52:00	44:17:16	Michelle Payne	2017
3:42	9:58	21:47	30:16:00	40:39:00	44:13:00	46:01:29	Tess Leono	2016
3:26	8:58	19:22	27:37:00	40:16:00	44:21:00	46:11:42	Eric Gelder	2015
3:53	10:41	22:33	31:57:00	42:22:00	45:12:00	46:36:43	Cheryl Zwarkowski	2016

My Splits							
FC / 17	SPW / 42	PSR 72	Darw 90	LP 122	P Rd. 131	Whitney 135	Date



Course Description

**Badwater Basin, Death Valley (280ft / 85m below sea level),
Mile Zero (Start Line)**

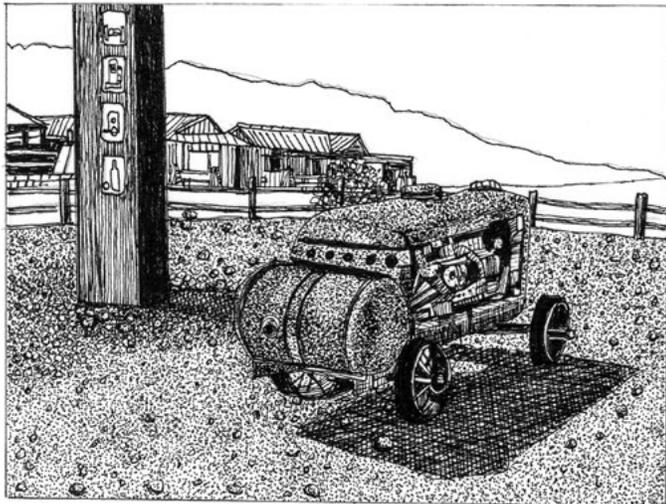


The race begins here adjacent to a pool of saltwater located at the lowest place in North America. There are toilets, but no other services.

**Furnace Creek Ranch (170' / 51m below sea level),
17.5mi / 28.2km (Time Station #1)**

The first oasis in our journey. Two hotels, gas station, general store, restaurants, camping, and ice are available. Stock up here on ice, water, food, supplies, and gas both before the race and when you pass through during the race!

Stovepipe Wells (Sea Level), 42.2mi / 68km (Time Station #2)



A general store, gas station, restaurant and motel. Location of the race's Medical HQ for most of first 15 hours of the race. It is critical that you stock up on ice, water, food, supplies, and gas when you pass through here during the race!

Towne Pass (4956' / 1511m), 58.7mi / 94.5km

From Stovepipe Wells, it's 17-mile long ascent with 5000' of elevation gain to the highest point of the race course. From the summit, it's a 10-mile long descent with 3000' feet of elevation loss into the Panamint Valley. On both sides, 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' / 610m),
72.7mi / 117km (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' / 1219m), 80.65mi / 130km

The bathrooms and parking lot that designate this viewpoint are not the top of this ascent, though you may hope so. The road continues to rise to 5000' / 1524m over rolling hills, then eventually descends into the Owen's Valley.

Darwin Turn-Off (5050' / 1540m), 90.6mi / 146km (Time Station #4)

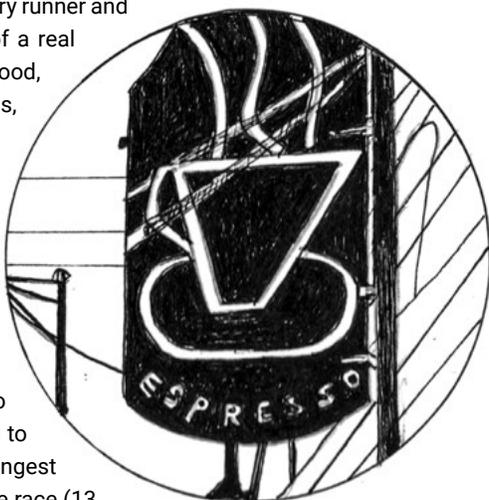
There are no services here, but just a few miles to the south of our route is the small inhabited ghost town of Darwin, the website for which touts "NO broadcast TV; NO AM/FM radio, NO cell signal; NO stores; NO restaurants." The Darwin time station is where the race usually starts to get serious for all entrants. Look for Mile Marker 28 about nine miles ahead to indicate your 100-mile mark! The generally flat or slightly downhill stretch ahead can be tedious and demoralizing; Mt. Whitney is visible ahead and never seems to get closer!

Keeler (3610' / 1100m), 108.1mi / 174km

This is a small mining town with no facilities which abuts the Owens Dry Lake Bed on 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 high in the mountains.

Lone Pine (3610' / 11km), 122.7mi / 197.5km (Time Station #5)

Lone Pine offers the weary runner and crew all the amenities of a real town: café fare, fast food, pizza, restaurants, motels, gas stations, a grocery store, and much more, not to mention our Race Headquarters at the Dow Villa. Restock here for the climb to Whitney Portal as there no services after Lone Pine. Turn left onto the Whitney Portal Road to begin the final leg, the longest and steepest climb of the race (13 miles or 21km with 5000 feet or 1524m of elevation gain). Temperatures will steadily decrease during the ascent (though depending on time of day). As you ascend Mt. Whitney, be sure your support vehicle is always parked completely off of the road and that you do not block traffic, not even for a moment.



Mt. Whitney Trailhead, (8360' / 2548m), 135mi / 217km



Congratulations! You have finished The World's Toughest Foot Race! A small burger shack / 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!).

Portal Road / Base of the Switchbacks (6890' / 2100m), 131.1mi / 211km (Time Station #6)

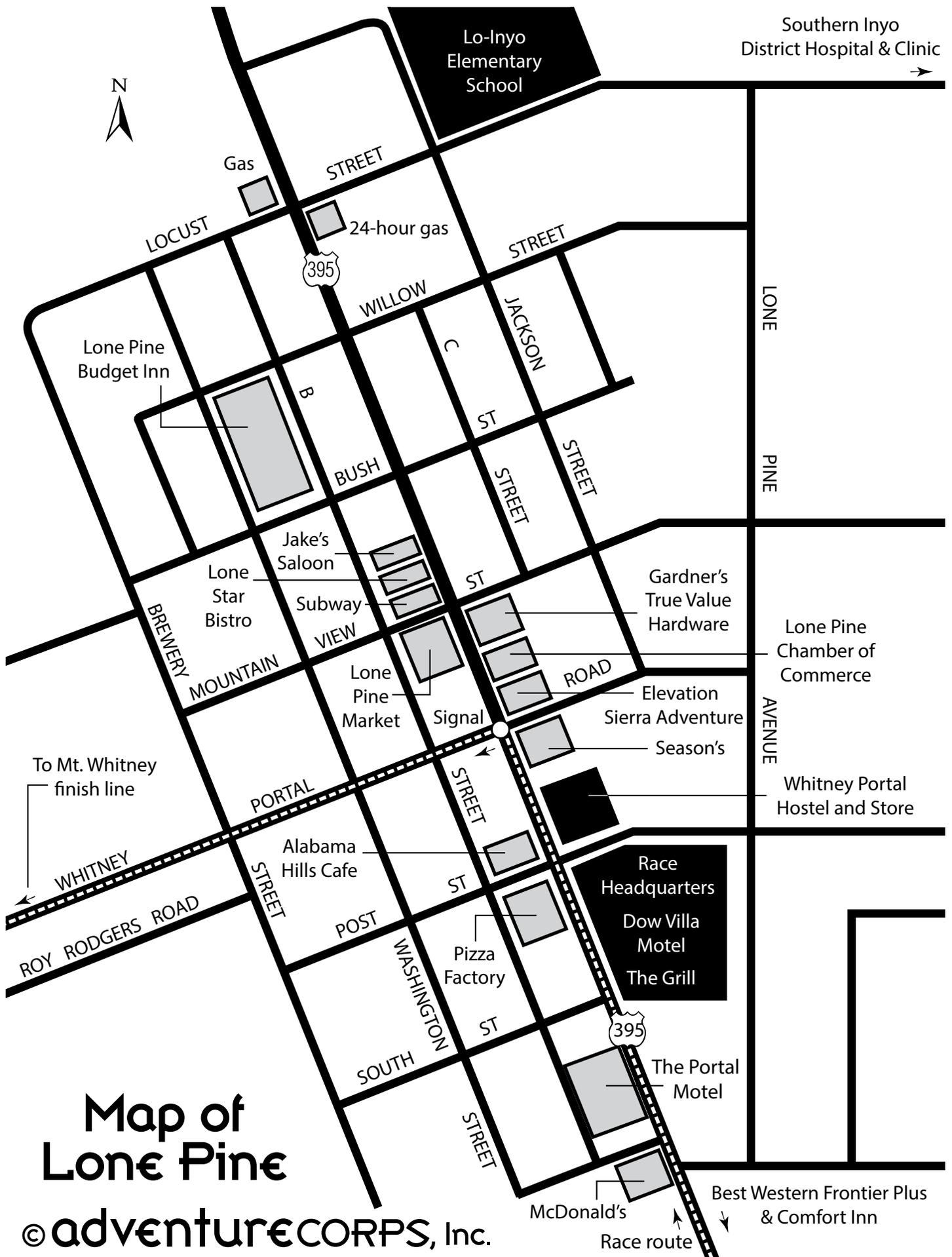
After the turn from Hwy 395 in Lone Pine, it's 8.4 miles or 13.5km to Time Station #6, located at the start of the switchbacks. Be prepared with extra layers of clothing and rain gear the final few miles; at night it can approach freezing temperature. Drive and park very carefully!



For more of Badwater athlete Rich Peer's art, follow his Instagram [@RichPeersArt](#)

TOILET LOCATIONS ALONG THE ROUTE

- 14.5 Golden Canyon (top end of parking lot; right side of road)
NO WASHING FACILITY
- 17.6 Furnace Creek Gas Station (left side of road)
- 40.2 Sand Dunes Parking lot (right side of road)
NO WASHING FACILITY
- 42.2 Stovepipe Wells Gas Station (right side of road, and at the hotel on the left)
- 51.2 Wildrose Station (parking lot on Towne Pass; right side of road) NO WASHING FACILITY
- 72.7 Panamint Springs Resort (left side of road)
- 80.6 Father Crowley's Point (right side of road)
NO WASHING FACILITY
- 121- Various locations along Hwy 395 in Lone Pine
- 122.8 (restaurants and hotels)
- 135 Mt. Whitney Portal / Finish Line NO WASHING FACILITY



Map of Lone Pine

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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 <i>(Race HQ)</i>	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
Lone Pine 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



Badwater 135 Race Rules and National Park Service Regulations

NOTE: Adherence to all current COVID-19 rules and regulations – local, state, federal, or ours – is additionally required.

General Race Rules

1. There are three starting times for the 2021 Badwater Ultramarathon (800pm, 930pm, and 1100pm on July 19, 2021), 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 bib 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. The Pacer Bib numbers must also be worn similarly by any pacer / crew member who is running along with his or her racer.
4. 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, based upon start time. 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.
5. 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.
6. 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.

7. 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).
8. Racers must make their presence known at all Time Stations located along the route.
9. As it has since 1989, the race ends at Mt. Whitney Portal. If any entrant or crew member chooses to hike on the Mt. Whitney Trail, official race logos must not be worn and the appropriate permits must be obtained from the Forest Service.
10. Racers, crew, and staff must not litter, mar, or pollute the landscape or environment.
11. 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 AdventureCORPS, Inc. In particular, t-shirts (such as for crew members, friends, supporters) 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 must have a designated Crew Chief and his or her name and email address must be provided to the race organizers at least eight 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 (preferably eight weeks.) 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.

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 and Crew must attend / view the Online 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. Inside the envelope, the Secret Code mentioned in the online Pre-Race Meeting must be written.

14. During Racer Check-In, all entrants must display a minimum of two running-style reflective vests - which will be worn and utilized by the racer and pacer (if a pacer is used) during nighttime periods of the race – and eight blinking red lights for racers, pacers, and crew members to wear at night. 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 3 reflectivity garment for each crew member to wear at all times during the event. See point 4 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. (Ziplock bags or dog poop bags are NOT acceptable. See website for Biffy Bag discount.) 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 Racer 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 commercial filming agreements. Also, bona fide media must contact AdventureCORPS, Inc. to request a media credential. All media, photographers, and videographers must attend the Media Check-In and Briefing prior to the race.

PHOTO / VIDEO REGULATIONS WITHIN DEATH VALLEY NATIONAL PARK

The National Park Service - which has jurisdiction over the first 85 miles of the race route - regulates photography and videography if it makes an impact on Park resources or other Park visitors. Please visit nps.gov/deva/ for information.

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. 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. ALL support crew members (except those actively pacing their racer) must wear OSHA Class 3 high-visibility / reflectivity clothing at all times during the event. These regulations may ONLY be met by wearing the special garments developed by ZZYXXZ 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 3 shirts / jackets. Please note: Running-type reflective vests, such as those by Nathan Sports, do NOT meet OSHA Class 3 requirements. NOTE: New for 2020/2021, Class 2 garments are no longer allowed during the day. Crew must wear Class 3 at all times unless running as a pacer.

5. Racers and Pacers may dress as they choose during daylight. At night, Racers and Pacers must wear 360 degree reflectivity (such as runner-type reflective vests by Nathan Sports) and front and rear blinky lights. Racers and Pacers are not required to wear the specific 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. (Pacers may run next to their Racer briefly, when handing off supplies or spraying their Racer, but only on the left of the Racer.)

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 - for more than a few moments - 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.

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 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 80" in width, per official manufacturer spec's. Small Cars, Minivans, and SUVs are recommended. Oversize SUVs, vans, and trucks, or other types of oversize vehicles are strongly discouraged. Motorhomes, RVs, "SportsMobiles," Sprinter Vans (and similar, such as the Dodge Ram 1500 / 2500), vehicles with extra high rooflines, and all types of Hummers are specifically not allowed. Support vehicles may not pull trailers of any kind. (The largest vehicle currently allowed at the event is the Nissan NV3500.)

3. 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 - if needed - at no charge by the race organizers at Racer Check-In.

4. All support vehicles must have their racer's bib number easily and clearly visible on both sides, the front, and the left rear. Sticky racer bib numbers will be provided to ALL racers at no charge during Racer Check-In: these racer numbers must be displayed on all four sides of the support vehicle.

5. 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.

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

7. Vehicle windows may not be blocked or obstructed with any signage, paint, or the like. 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.

8. Driving must be done at the speed of traffic, without 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. Vehicles must "leapfrog" the runner at all times. Each "leapfrog" should generally be two miles or more in length. Racers may not be "shadowed" (driving a vehicle at the runner's speed.) Driving may never be at the speed of any racer.

9. All support vehicles must have their headlights on while driving, 24 hours a day.

10. Vehicles must be parked completely off the road surface whenever they are stopped (with all four tires right of the white line). 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, except in parking lots or exceptionally large pullouts. 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. When parked, 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.)

12. 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.

13. 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).

14. On the Father Crowley 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, 7.9, 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. See website for more details and photos.

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 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 actions and their crew's actions; crews are responsible for both their own actions 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 - rather than the racer crossing to the crew / vehicle. 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."



Badwater 135 competitor Kim Budzik is supported with perfect style and technique by Arnold Begay.

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 physically mark 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 withdraw from the race are encouraged - and expected - to come to the finish line and the post-race party (not in 2020) to greet and celebrate with their fellow racers and crews.

4. All Emergency Medicine and/or Emergency Evacuation costs for participants, crew members, or staff will be borne by that person or their heirs. The race organizers are in no way liable or responsible for medical care, nor 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. 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!

Celebrating Decades of Exceptional Humans at Badwater 135!

Badwater Hall of Fame Inductees

- Al Arnold, 2002
- Jay Birmingham, 2003
- Richard Benyo, 2004
- Tom Crawford, 2004
- Jeannie Ennis, 2005
- Rhonda Provost, 2006
- Jack Denness, 2006
- Ben & Denise Jones, 2007
- Lisa Bliss, 2010
- Lisa Smith-Batchen, 2012
- Shannon Farar-Griener, 2015

Badwater Ambassador Awards

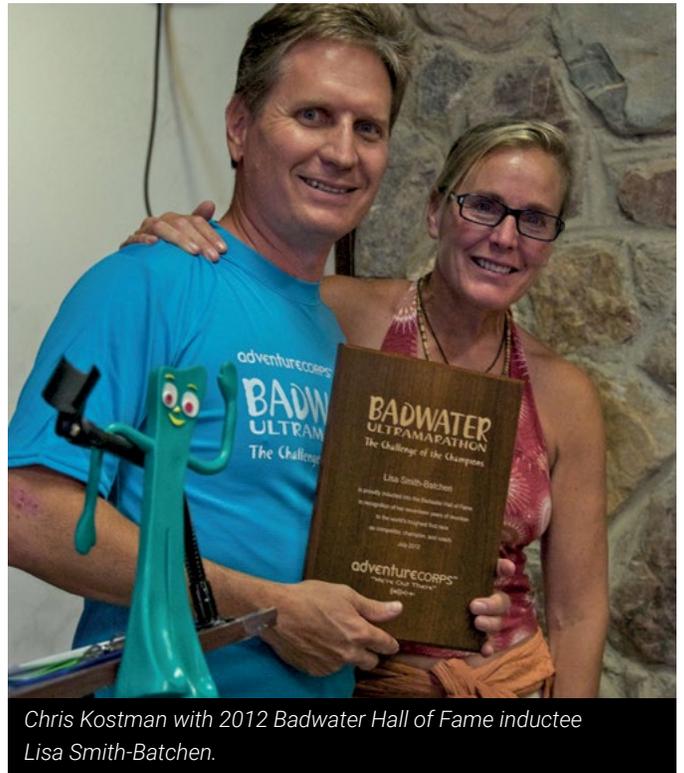
- Curt Maples, 2003
- Frank McKinney, 2015
- Anthony Portera, 2015

Badwater 135 Ten-Time (or more) Finishers

- Jack Denness (12; age 56-75): 91, 92, 93, 94, 96, 98, 99, 00, 01, 02, 05, 10
- David Jones (10; age 43-66): 95, 97, 07, 08, 09, 12, 13, 16, 17, 18
- Dean Karnazes (10; age 33-50): 96, 00, 03, 04, 06, 07, 08, 09, 12, 13
- Dan Marinsik (12; age 44-55): 03, 04, 05, 06, 07, 08, 09, 10, 11, 12, 13, 14
- John Radich (14; age 43-61): 97, 02, 03, 04, 05, 06, 07, 08, 09, 11, 12, 13, 14, 15
- Pam Reed (11; age 41-54): 02, 03, 04, 05, 08, 09, 10, 12, 13, 14, 15
- Ray Sanchez (12; age 41-52): 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19
- Lisa Smith-Batchen (10; age 34-56): 95, 97, 98, 00, 02, 03, 06, 07, 08, 17
- Marshall Ulrich (20; age 39-64): 90, 91, 92, 93, 95, 96, 98, 99, 01, 02, 03, 04, 05, 07, 08, 10, 11, 12, 13, 15
- Arthur Webb (14; age 56-70): 98, 99, 00, 01, 02, 04, 05, 06, 07, 08, 09, 10, 11, 12
- Scott Weber (13; age 42-56): 94, 95, 96, 97, 98, 99, 00, 01, 03, 05, 06, 08, 09
- Danny Westergaard (13; age 48-60): 07, 08, 09, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19



Chris Kostman with 2007 Badwater Hall of Fame inductees Ben & Denise Jones.



Chris Kostman with 2012 Badwater Hall of Fame inductee Lisa Smith-Batchen.

Badwater 135 Ultramarathon Statistics, 1990–Present

Year	Starters	Finishers	Buckle Cut-Off	Sub 60hr	Sub 48hr	Sub 40hr	Sub 34hr	New Record: Men	New Record: Women
2019 (PM)	95	79	48 Hours	N/A	83%	56%	24%	21:33:01	24:13:24
2018 (PM)	99	69	48 Hours	N/A	70%	39%	23%		
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	77	48 Hours	N/A	81%	57%	20%		
5 Year Avg	96.6	76.8			80%	52%	22%		
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
5 Year Avg	92.6	81.4			86%	58%	24%		
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	
5 Year Avg	83.6	72.4		87%	71%	35%	14%		
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
5 Year Avg	72.6	53		73%	47%	17%	7%		
1999 (AM)	42	33	48 Hours	78%	60%	26%	12%		
1998 (AM)	29	20	48 Hours	69%	41%	17%	10%		
1997 (AM)	27	20	48 Hours	74%	44%	26%	3%		
1996 (AM)	23	14	45 Hours	61%	35%	1%	4%		
1995 (PM)	24	16	45 Hours	67%	38%	13%	0%		
5 Year Avg	29	20.6		70%	44%	17%	6%		
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%	26:18:00	
1991 (PM)	14	14	60 Hours	100%	71%	36%	14%	26:34:10	36:19:20
1990 (PM)	21	17	70 Hours	81%	29%	29%	14%	27:56:20	39:27:00
5 Year Avg	17.2	14		84%	42%	21%	13%		

Unique Finishers' Nationality

Argentina	5
Australia.....	21
Austria.....	12
Belgium.....	1
Bermuda	1
Bolivia	1
Brazil	30
Bulgaria.....	1
Canada.....	28
Cayman Islands.....	1
Chile	1
China	2
Colombia	1
Czech Republic.....	3
Denmark	5
El Salvador.....	1
France	32
Germany	46
Greece.....	3
Guatemala	3
Hungary	6
India	7
Iran	3
Ireland.....	5
Israel	1
Italy	18
Japan.....	12
Jordan.....	2
Kazakhstan.....	1
Latvia	1
Luxembourg.....	2
Malaysia	1
Mexico	10
Netherlands.....	1
New Zealand	5
Philippines.....	5
Poland.....	8
Portugal.....	4
Romania.....	1
Russia	4
Serbia.....	2
Singapore.....	3
Slovenia	1
South Africa.....	3
South Korea	1
Spain	6
Sweden	4
Switzerland.....	6
United Kingdom.....	48
Uruguay.....	1
USA	534
Total Non-USA	364
Total	898

Age Group and **Overall Course Records

Age Group	Men	Time	Women	Time
10-19	Nickademos 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	Yoshihiko Ishikawa, 31, Japan, 2019**	21:33:01	Alyson Venti (Allen), 34, USA, 2016	25:53:07
40-49	Valmir Nunes, 43, Brazil, 2007	22:51:29	Patrycja Bereznowska, 43, Poland, 2019**	24:13:24
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, 63, USA, 2019	34:03:47
70-79	Arthur Webb, 70, USA, 2012	33:45:40	N/A	N/A
Youngest Ever	Nickademos 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 1987-2019

Total Number of Entrants: 1976

* 1565 Males, 412 Females (79% / 21%)

Total Number of Unique Entrants: 1005

* 791 Males, 214 Females (79% / 21%)

Total Unique Finishers, (any time limit): 898

* 693 Males, 205 Females (77% / 23%)

* Time limits have been 70 hrs, 60 hrs, then 48 hrs

Total Unique Finishers (48 hrs or less): 775

* 597 Males, 178 Females (77% / 23%)

Total Unique Finishers (36 hours or less): 261

* 197 Males, 51 Females (80.5% / 19.5%)

Comparison: Total Number of Mt. Everest

Summits, as of 2016:

7,646 summits by 4,469 people

Numbers of Official Finishes, through 2019

1-Time Finishers: 602

(467 Males and 135 Females; 78% / 22%)

2-Time Finishers: 161

(125 Males and 36 Females; 78% / 22%)

3-Time Finishers: 58

(45 Males and 13 Females; 77% / 23%)

4-Time Finishers: 26

(16 Males and 10 Females; 62% / 38%)

5-Time Finishers: 13

(10 Males and 3 Females; 77% / 23%)

6-Time Finishers: 8

(7 Males and 1 Females; 88% / 12%)

7-Time Finishers: 8 (Kimberlie Budzik,

Shannon Farar-Griener, Monica Scholz, Jonathan Gunderson, Grant Maughan, Frank McKinney, Mark Olson, Anthony Portera)

8-Time Finishers: 7 (Karla Kent, Cheryl Zwarkowski,

Eberhard Frixe, Oswaldo Lopez, Mark Matyazic, Ian Parker, Keith Straw)

9-Time Finishers: 3 (Ed Ettinghausen, Chris Frost,

Harvey Lewis)

10-Time Finishers: 3 (Lisa Smith-Batchen,

David Jones, Dean Karnazes)

11-Time Finishers: 1 (Pam Reed)

12-Time Finishers: 3 (Jack Denness,

Dan Marinsik, Ray Sanchez)

13-Time Finishers: 2 (Scott Weber,

Danny Westergaard)

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

20-Time Finishers: 1 (Marshall Ulrich)

Men Who Have Run Under 26 Hours

Name	Age	Nationality	Year	Time
Yoshihiko Ishikawa	31	Japan	2019	21:33:01
Pete Kostelnick	28	USA	2016	21:56:32
Valmir Nunez	43	Brazil	2007	22:51:29
Mike Morton	40	USA	2012	22:52:55
Jorge Pacheco	40	Mexico	2008	23:20:16
Pete Kostelnick	27	USA	2015	23:27:10
Oswaldo Lopez	40	Mexico	2012	23:32:28
Marco Farinazzo	40	Brazil	2009	23:39:18
Harvey Lewis	35	USA	2016	23:40:52
Oswaldo Lopez	39	Mexico	2011	23:41:40
Akos Konya	32	Hungary	2007	23:47:47
Akos Konya	33	Hungary	2008	23:49:44
Dan Lawson	43	United Kingdom	2016	23:52:43
Mick Thwaites	42	Australia	2016	23:52:43
Harvey Lewis	38	USA	2014	23:52:55
Oswaldo Lopez	37	Mexico	2009	24:36:07
Scott Jurek	31	USA	2005	24:36:08
Carlos Sa	39	Portugal	2013	24:38:16
Grant Maughan	50	Australia	2014	24:43:08
Zach Gingerich	30	USA	2010	24:44:48
Sekiya Ryoichi	44	Japan	2011	24:49:37
Michele Graglia	34	Italy	2018	24:51:47
Grant Maughan	49	Australia	2013	24:53:57
Iino Wataru	37	Japan	2017	24:56:19
Oswaldo Lopez	38	Mexico	2010	25:05:38
Zach Gingerich	29	USA	2009	25:06:12
Anatoli Kruglikov	42	Russia	2000	25:09:05
Dusan Mravljje	47	Slovenia	2000	25:21:20
Oswaldo Lopez	41	Mexico	2013	25:27:03
Oswaldo Lopez	43	Mexico	2015	25:28:32
Jared Fetterolf	29	USA	2018	25:33:42
Scott Jurek	32	USA	2006	25:41:18
Marco Bonfiglio	39	Italy	2017	25:44:18
Charlie Engle	46	USA	2009	25:45:11
Zach Gingerich	32	USA	2012	25:49:40
David Goggins	32	USA	2007	25:49:40
Harvey Lewis	37	USA	2013	25:49:50
Akos Konya	31	Hungary	2006	25:58:42

Women Who Have Run Under 30 Hours

Name	Age	Nationality	Year	Time
Patrycja Bereznowska	43	Poland	2019	24:13:24
Alyson Venti	34	USA	2016	25:53:07
Jamie Donaldson	35	USA	2010	26:16:12
Jamie Donaldson	33	USA	2009	27:20:18
Jamie Donaldson	34	USA	2009	27:20:18
Nikki Wynd	43	Australia	2015	27:23:27
Pam Reed	47	USA	2009	27:42:52
Pam Reed	41	USA	2002	27:56:47
Brenda Guajardo	41	USA	2019	28:23:10
Pam Reed	43	USA	2003	28:26:52
Alyson Venti	32	USA	2014	28:37:28
Brenda Guajardo	39	USA	2016	28:40:13
Pam Smith	43	USA	2018	28:47:53
Sumie Inagaki	45	Japan	2011	28:49:27
Pam Reed	48	USA	2009	29:03:09
Nikki Wynd	44	Australia	2016	29:06:00
Monica Scholz	37	Canada	2004	29:22:29
Gina Slaby	38	USA	2019	29:26:45
Pam Reed	53	USA	2014	29:30:04
Jennifer Vogel	30	USA	2011	29:42:12
Nikki Wynd	42	Australia	2013	29:44:33
Irina Reutovich	50	Russia	2000	29:48:27
Iris Cooper-Imhof	52	Canada	2011	29:51:23
Sumie Inagaki	46	Japan	2012	29:53:09
Catherine Todd	43	Australia	2013	29:55:29

To study and parse data and results from all the Badwater® races, visit:
dbase.adventurecorps.com

2021 Badwater 135 Official Race Roster

Bib	Wave	Name	City	State	Country	Nationality	Age	M/F	B135 Finisher?
1	2300	Pete Kostelnick	Brunswick	OH	USA	USA	33	Male	Yes
2	2300	Oswaldo Lopez	Madera	CA	USA	Mexico	49	Male	Yes
5	2000	Jonathan Reid	Missoula	MT	USA	USA	42	Male	No
6	2300	George Chmiel	San Diego	CA	USA	USA	40	Male	No
7	2300	Nancy Levene	New York	NY	USA	USA	53	Female	No
8	2130	David Jones	Murfreesboro	TN	USA	USA	69	Male	Yes
9	2000	Christa King	Springfield	MO	USA	USA	49	Female	No
10	2130	Pamela Chapman-Markle	San Leon	TX	USA	USA	65	Female	Yes
11	2130	Rhys Jenkins	Crickhowell	Powys	United Kingdom	United Kingdom	33	Male	Yes
12	2000	Richard Yelverton	Ridgeland	MS	USA	USA	63	Male	No
13	2300	Dion Leonard	Prescott	AZ	USA	Australia	46	Male	No
14	2000	Sandy Geisel	Marietta	GA	USA	Canada	57	Female	No
15	2130	Gabe Peterson	Escondido	CA	USA	USA	47	Male	No
16	2130	Ed Ettinghausen	Murrieta	CA	USA	USA	58	Male	Yes
17	2300	Joshua Stevens	Estes Park	CO	USA	USA	50	Male	Yes
18	2300	Lori Mitchener	Lynnfield	MA	USA	USA	44	Female	No
19	2130	Scott Waldrop	Wake Forest	NC	USA	USA	45	Male	No
20	2300	Nick LaBoffe	Cincinnati	OH	USA	USA	40	Male	Yes
21	2000	Robert Hunter	Glenmont	OH	USA	USA	61	Male	No
22	2130	Michelle West	Costa Mesa	CA	USA	USA	49	Female	Yes
23	2130	Sam Felsenfeld	West Chester	PA	USA	USA	46	Male	No
24	2300	Jonathan Gunderson	San Francisco	CA	USA	USA	43	Male	Yes
25	2000	Amy Costa	Ponte Vedra Beach	FL	USA	USA	56	Female	Yes
26	2300	Caryn Lubetsky	Miami Shires	FL	USA	USA	50	Female	Yes
27	2000	Emily Ryan	Washington	DC	USA	USA	46	Female	Yes
30	2000	Kevin Delk	Greenville	TN	USA	USA	38	Male	Yes
32	2130	Eric Tadt	Minneapolis	MN	USA	USA	34	Male	Yes
33	2300	Sergey Ionov	Moscow		Russia	Russia	33	Male	Yes
34	2130	Todd Baum	Essex Junction	VT	USA	USA	63	Male	Yes
35	2300	Harvey Lewis	Cincinnati	OH	USA	USA	45	Male	Yes
36	2300	Joshua Holmes	Los Angeles	CA	USA	USA	43	Male	Yes
37	2300	Dan McHugh	Snowmass Village	CO	USA	USA	50	Male	Yes
38	2000	Mollie Melton Yonker	Winter Park	FL	USA	USA	38	Female	No
39	2000	Nate Dirvin	Cape May	NJ	USA	USA	39	Male	No
40	2300	Georgia Jo Manta	Athens	Halandri	Greece	Greece	43	Female	No
41	2300	Ray Sanchez	Sacramento	CA	USA	USA	54	Male	Yes
42	2130	Sean Nakamura	San Diego	CA	USA	USA	42	Male	No
44	2000	Telma Ghazarian Altoon	Porter Ranch	CA	USA	Armenia	46	Female	No
45	2000	Aneta Zeppettella	Centerville	OH	USA	USA	49	Female	No
46	2130	John (Jack) Corey	Cincinnati	OH	USA	USA	53	Male	Yes
47	2300	Suzi Swinehart	Fort Wayne	IN	USA	USA	49	Female	Yes
48	2000	Arnold Begay	Broken Arrow	OK	USA	USA	58	Male	Yes
49	2000	Karla Kent	Las Vegas	NV	USA	Czech Republic	58	Female	Yes
50	2130	Meili Mathuren	Rosamond	CA	USA	USA	46	Female	No
51	2000	Kimberlie Budzik	Friendswood	TX	USA	USA	61	Female	Yes
52	2000	Jackie Brown	St. Albans Bay	VT	USA	USA	59	Female	Yes
53	2130	Jessica Hardy	Dana Point	CA	USA	USA	39	Female	Yes
54	2300	Timothy Deer	Charleston	WV	USA	USA	56	Male	Yes
56	2130	Peggy Ward	Wichita	KS	USA	USA	57	Female	No
57	2130	Oscar Hernandez	San Bernardino	CA	USA	Mexico	39	Male	No
58	2000	Bethany Cazenave	Santa Rosa Beach	FL	USA	USA	58	Female	No
59	2000	Hans Siemelink	Houston	TX	USA	Netherlands	60	Male	No
61	2130	Norma Roberts	Calgary	AB	Canada	Canada	62	Female	No
62	2000	Rui Pedras	Lisboa		Portugal	Portugal	62	Male	No
63	2000	Mark Olson	Covina	CA	USA	USA	74	Male	Yes
64	2130	Todd Nott	Plattsmouth	NE	USA	USA	57	Male	No

Bib	Wave	Name	City	State	Country	Nationality	Age	M/F	B135 Finisher?
65	2300	Nicola Placucci	Cesena	FC	Italy	Italy	38	Male	No
66	2000	Peter Matus	Homestead	FL	USA	Slovakia	54	Male	No
67	2130	Andy Nazworth	Black Mountain	NC	USA	USA	57	Male	No
68	2300	Adam Monke	Nickerson	NE	USA	USA	34	Male	No
69	2000	Will Litwin	Cutler Bay	FL	USA	USA	52	Male	No
70	2130	Olov Berg	Potomac	MD	USA	Sweden	50	Male	Yes
71	2000	Jodi Weiss	Washington	DC	USA	USA	51	Female	Yes
72	2000	Leslie Carboni	Sacramento	CA	USA	USA	47	Female	No
73	2000	Angel Vega	Gilbert	AZ	USA	USA	48	Male	Yes
74	2000	Brian Medley	Folsom	CA	USA	USA	47	Male	No
75	2000	Trevin Fugere	Frisco	TX	USA	USA	47	Male	No
76	2300	Lisa DeVona	Pompano Beach	FL	USA	USA	45	Female	Yes
77	2000	John Radich	Monrovia	CA	USA	USA	67	Male	Yes
78	2130	Daniel Kroeger	Aptos	CA	USA	Germany	43	Male	No
79	2300	Sally McRae	Bend	OR	USA	USA	42	Female	Yes
80	2130	Scott Jenkins	London		United Kingdom	United Kingdom	40	Male	No
81	2000	Gerald Tabios	Elmhurst	NY	USA	Philippines	51	Male	Yes
82	2000	Kelaine Conochan	Washington	DC	USA	USA	38	Female	No
83	2300	Michele Graglia	Big Bear City	CA	USA	Italy	37	Male	Yes
84	2130	Danny Westergaard	Palos Verdes Estates	CA	USA	USA	63	Male	Yes
85	2000	Joshua Kline	St. Augustine	FL	USA	USA	45	Male	No
86	2300	Lee Whitaker	Fort Mill	SC	USA	USA	47	Male	Yes
87	2300	Kenneth Ringled	Simi Valley	CA	USA	USA	40	Male	No
88	2300	Igor Gotsuliak	Kyiv		Ukraine	Ukraine	32	Male	No
89	2300	Mark Wooten	Garland	TX	USA	USA	41	Male	No
90	2000	Edward Hanson	St Cloud	FL	USA	USA	50	Male	No
91	2000	Bob Brashear	Cold Spring	KY	USA	USA	62	Male	No
92	2130	Emilio Martinez	Arleta	CA	USA	El Salvador	51	Male	No
93	2300	Ryan Fecteau	Malden	MA	USA	USA	28	Male	No
95	2130	Brian Hill	Aledo	TX	USA	USA	47	Male	Yes
97	2000	Brian Hamilton	Portland	OR	USA	United Kingdom	51	Male	No
98	2000	Shane Tucker	Menlo	GA	USA	USA	49	Male	No
99	2000	Bob Becker	Fort Lauderdale	FL	USA	USA	76	Male	Yes
100	2300	Joao Andrade	Sao Paio de Oleiros	Aveiro	Portugal	Portugal	39	Male	No



2019



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