



Summer Backpacking

Preparing for the Yosemite Science Expedition

A guide for students and parents

June 23 - July 6, 2019



Welcome!

Greetings from Yosemite National Park. You are about to embark on the adventure of a lifetime. Over the course of two weeks, you will visit beautiful places and overcome physical and intellectual challenges with a group of people who share your passion for new experiences. On this trip, *you* ask the questions, *you* find the answers, and *you* go home with fantastic stories to tell.

You are about to become part of an expedition team whose success depends on trust, communication, and participation. Friendships forged on wilderness expeditions can last a lifetime. Two NatureBridge Environmental Science Educators will lead your team. These educators have years of experience leading groups into wilderness areas and introducing people to the natural beauty of wild places.

We hope that you have a wonderful trip that will inspire you to continue exploring and learning about the world around you. If you have any questions, please ask us. It is our job to make sure that you get the most out of this experience.

Looking forward to seeing you this summer!

The NatureBridge Education Team in Yosemite National Park

Program Overview

Immerse yourself in backpacking, in environmental science, and in the wonder of exploring a national park on this exceptional two-week experience. After spending two days at our Crane Flats campus in Yosemite National Park, packing and preparing, you and your group will set off on a nine-day backpacking expedition through the Yosemite Wilderness. You will hike about 5 miles each day to a new campsite, occasionally hiking up to 10 miles in a day, carrying everything you need in a large backpack that weighs 40-50 pounds. While traveling over peaks and mountain passes, you will learn the essential skills of backpacking and discover what it means to be a field scientist. You will design and conduct your own science investigation, strengthen your leadership skills, and form new friendships. After you complete your trip, your group will return to the NatureBridge campus, shower(!), and celebrate your accomplishments. Over the next two days, you and your group will create presentations about each of your science investigations and present them to National Park staff, NatureBridge educators, your family, and peers. Students have used their NatureBridge summer backpacking experience and research for high school capstone projects, college entrance essays, and job resumes. This challenging and fun adventure will likely be one of your most meaningful and rewarding experiences.

In this packet, you will find information about:

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Paperwork

Let's get this out of the way first! Before we head off on our adventure, we need some information from you. NatureBridge requires you to complete the following documents before attending our program:

- **NatureBridge Participant Registration form** – Requires a parent or guardian's signature.
- **NatureBridge Medical Exam** - To be completed and signed by a Physician, Licensed Nurse Practitioner, or Physician's Assistant.
- **NatureBridge Backcountry Student Contract** – Requires a student signature.
- Complete the [Student Pre-trip Survey](#).

Please email all forms to Katie Draude (kdraude@naturebridge.org) by May 15, 2019.

Email forms and direct questions to:

Katie Draude, Summer Programs Manager

Email: kdraude@naturebridge.org

Phone: 415-598-9832

Pre-Trip Preparation

“Do I have enough backpacking experience for this trip?”

Yes, you do! No prior backpacking experience is necessary. We expect that you have a positive mental attitude, that you have a willingness to learn, and that you are an active participant in the entire experience. If you meet those expectations, this will be a rewarding experience for everyone.

Physical Preparation

Students, please **prepare** physically for the course through regular exercise. You will carry a 40-50 lb. backpack and hike about 5 miles each day, occasionally hiking up to 10 miles in a day, on uneven terrain, up and over mountain passes. Practice hiking before the trip with a weighted backpack and the hiking shoes you plan to wear. Conditioning will help you to avoid injury and will add to your enjoyment and ability to participate in the course.

Equipment List

Look over the gear list and **compile** your gear for the trip. Please contact Katie with questions about specific gear needs or if you need to borrow equipment.

Travel Logistics

Program Dates: June 23 - July 6, 2019

Getting to Yosemite

Yosemite National Park is in the Sierra Nevada mountains of California. It is your responsibility to get to and from Yosemite at the beginning and end of the course. Travel options are listed below.

Travel by Car

If you're planning to drive, please refer to [our website for Google Map directions](#). Look for the thumbtack marking our Crane Flat Campus. It is located 1 mile east of the Crane Flat gas station. Please plan to arrive at our Crane Flat Campus at 2:30 p.m. on Sunday, June 23 and depart at 12 p.m. on Saturday, July 6. Please arrive at 9:30 a.m. on Saturday July 6th if you would like to see the science presentations (more information on student presentations below). We encourage carpooling; please indicate if you are interested in carpooling when you register online.

Travel by Plane

We offer a shuttle service to and from Fresno Yosemite International Airport (FAT) on the first and last day of each session. This service costs \$50 each way (\$100 round-trip).

****Important:** Participants who will be using the NatureBridge shuttle should purchase tickets for a flight that arrives by 1 p.m. on June 23 and departs between 4 p.m. and 8 p.m. on July 6.

Student Presentations on Last Day

On the last morning of the program, students will present their scientific findings to NatureBridge and National Park Service staff. Parents and families are invited to share in the last morning of the course and see the presentations. Presentations will begin at 9:45 a.m. and conclude at 12 p.m.

Lodging Options in the Yosemite Area for Family and Friends

If you wish to stay in the Yosemite area before or after the trip, here are some options for lodging either in Yosemite National Park itself or in nearby communities.

- For lodging and camping options within Yosemite, visit the Yosemite National Park website page, "[Staying Overnight in Yosemite](#)." Take note of the driving distance from the lodging locations to our Crane Flat campus. Yosemite Valley is a 30-minute drive to the campus, while lodging options in other areas of the park can be 1.5 hours or more (yes - Yosemite is BIG!).
- For lodging options outside of Yosemite, we recommend looking into the following options:
 - **If you are coming from the West or South on Highway 140:** the town of El Portal has two large hotels (the Yosemite Cedar Lodge and the Yosemite View Lodge). These hotels are 35 - 45 minutes from Crane Flat. The town of Mariposa is another option on Highway 140 with several hotels. Mariposa is a 1.5-hour drive from Crane Flat.
 - **If you are coming from the West or North on Highway 120:** the town of Groveland and the smaller communities east of Groveland have several hotels. Groveland is a 1-hour drive from NatureBridge's Crane Flat campus.

Sample Itinerary

Day(s)	Topics/Activities*
Sunday, June 23	<p>Arrival/Orientation</p> <ul style="list-style-type: none"> ● Arrive at our Crane Flat campus and to get to know the other members of your group. ● Sleep in a dorm on our campus.
Monday	<p>Introduction to Yosemite National Park ecology and backpacking gear check</p> <ul style="list-style-type: none"> ● Intro to field science investigations and scientific inquiry. ● Look at individual and group gear to make sure everyone is fully prepared. ● Sleep in a dorm on our campus.
Tuesday	<p>Finish preparing backpacking gear, continue learning about the national park</p> <ul style="list-style-type: none"> ● Explore the trails around Crane Flat with your group. ● Continuing preparing for backpacking and your field science project. ● Sleep in a dorm on our campus.
Wednesday - Thursday	<p>9-day backpacking expedition</p> <ul style="list-style-type: none"> ● You and your trail group will depart for your 9-day backpacking expedition ● Groups will hike an average of 5 miles a day to a new campsite, with some days up to 10 miles, carrying backpacks weighing 40-50 lbs. Groups will hike through the Yosemite National Park Wilderness, through diverse ecosystems and up and over mountain passes. ● Learn and practice camping and backpacking skills. ● Collect data for the environmental science investigation that you designed. ● Explore the beautiful national park wilderness. ● Students will camp with their trail groups in tents each night.
Thursday afternoon	<p>Return to NatureBridge campus and celebrate your accomplishments!</p> <ul style="list-style-type: none"> ● Clean up gear. ● Take showers and relax.
Friday	<p>Prepare for research presentations</p> <ul style="list-style-type: none"> ● Clean any remaining gear. ● Analyze data, prepare presentations.
Saturday, July 6	<p>Presentations</p> <ul style="list-style-type: none"> ● Present research to NatureBridge staff, National Park Service rangers, and friends and family. ● Say goodbye to the members of your group. ● Departure at 12 p.m. - Thanks for participating in the Yosemite Science Expedition!

*Note: Schedule subject to change due to conditions in the park or other external factors. Students will be updated of any changes as they occur.

Equipment List

In addition to the following packing lists, we believe it is important to provide specific information on choosing the proper gear. Packing too light could leave you cold and miserable, while carrying too much would be an unwelcome burden. Please read each item carefully.

How to Select Equipment

Selecting appropriate gear is a process that can be overwhelming and expensive. Review your current collection of clothing and gear, and only buy or rent what you really need. If possible, borrow from friends or relatives. Many participants will come with a combination of purchased and borrowed gear. Keep in mind that you will be in the rugged backcountry and therefore function is far more important than fashion. We suggest that you rely on the expertise of knowledgeable salespeople or contact us if you have a gear question. There is no substitute for actually trying on boots, gear, and clothing. One retail chain with a comprehensive selection is Recreational Equipment Inc. (REI). REI also rents high quality backpacking gear at reasonable rates and sometimes sells used gear that is in good condition. If you purchase gear, consider leaving the sales tag on until you get to campus; our educators may suggest that you borrow gear instead if they think our gear will be more appropriate for backpacking.

If you cannot find something on the packing lists, we may be able to loan it to you during the program. **Please let us know well in advance what you need.** NatureBridge has a supply of gear for participants to borrow, including backpacking backpacks, fleece jackets, rain gear, and some sleeping bags. Look over the gear list and start putting together your gear for the trip. **There will be no opportunity to purchase gear once you have arrived to the program.** Please contact us with questions about specific gear needs, and let us know if you need to borrow equipment and what size you will need.

Bring Two Bags to the Program

- Your backpacking backpack, containing all items on the equipment checklist. For more information on the type of backpack, see below.
- A small daypack (such as a school backpack) that you will use to carry items such as extra warm layers and your water bottle while on day hikes and that will remain in a locked building while you are backpacking.

What You DO NOT NEED to Bring (NatureBridge Will Provide These Items)

- **Food or snacks** (unless you have highly specialized dietary need that you have discussed with our staff ahead of time). We have limited storage for extra food and so we ask that you do not bring any food, except for snacks for your transit to and from our Yosemite campus.
- **First aid equipment**
- **Map and compass**
- **Stoves, fuel, group cooking equipment**
- **Tents**
- **Bear canisters**
- **Toilet paper, soap, hand sanitizer**
- **Water purification**
- **Permits or radios**

Part I: Required Backpacking Packing List

Backpacking Clothing

In general, Sierra summers are dry. Temperatures can reach the 80s and 90s during the day, and fall to the 30s and 40s at night. Summer snowstorms and afternoon thunderstorms are also possible. A good layering system is necessary in order to accommodate the varying conditions.

Footwear

- ❑ **Broken-in hiking boots or sturdy athletic shoes** - This may be the most important piece of equipment you wear. It is not necessary to purchase a pair of expensive, heavy, all-leather hiking boots. Lightweight boots or athletic shoes with good ankle support are just as comfortable and more affordable. No skate shoes (e.g. Vans, Converse). The perfect boot is lightweight, has a leather or nylon/leather exterior, good padding, and a rugged sole. A brand new boot (even well-fitted) can cause serious blisters and ruin your trip. If you buy new boots, **please wear them for at least a month before you arrive.**
- ❑ **3-4 pairs of wool or synthetic socks - No cotton socks** – they hold onto moisture and can cause blisters.
- ❑ **Extra pair of lightweight shoes, sandals or “Crocs”-style shoes** - To wear in camp, potentially for stream crossings. No flip flops.

Upper Body

- ❑ **WaterPROOF rain jacket with hood** - Gore-Tex or seam-sealed coated nylon. No insulated snow parkas. No rain ponchos or plastic rain gear – they will rip easily and not protect you very well in Yosemite’s rainstorms.
- ❑ **1-2 fleece jackets, wool sweaters, or down jackets** – Not too bulky. No cotton!
- ❑ **1 long underwear top** - Lightweight silk, wool, or synthetic. No cotton!
- ❑ **2 T-shirts** - One for hiking and one for in camp. No tank tops - heavy backpacks chafe bare shoulders.
- ❑ **Sports bras** (women)

Personal Gear

- ❑ **1 backpacking backpack** - Capacity of at least 70 liters, internal frame packs preferred. Your backpack must have sufficient space to carry your clothing, food, and some group gear, including a bear canister. Your pack must have well-padded shoulder straps and a thick padded

Lower Body

- ❑ **WaterPROOF rain pants** - Gore-Tex or seam-sealed coated nylon.
- ❑ **1 pair of long underwear bottoms** - Lightweight silk, polyester, or wool. No cotton.
- ❑ **1 pair of pants** - Quick-drying hiking pants. No cotton, no jeans.
- ❑ **1 pair of shorts** - Could be zip-off shorts from hiking pants. No cotton!
- ❑ **Underwear**

Head and Hands

- ❑ **Sun hat** or baseball cap
- ❑ **Warm hat** (“beanie”)
- ❑ **Lightweight mittens or gloves** - No bulky ski gloves.

Personal Maintenance Kit

- ❑ **Personal medications** - **2 sets** of each that you take (in case one gets misplaced or damaged), for a duration of 14 days. This includes inhalers and epinephrine pens. An educator will distribute personal medications (prescription and over-the-counter) during the trip.
- ❑ **Prescription glasses, including a backup pair, in a hard case** - You must bring two pairs in case one breaks. Contact lenses and contact solution (small bottle) can be brought on the trip, but you must also bring prescription glasses as a backup.
- ❑ **Sunglasses** - Must be dark and filter ultraviolet light. The sun is powerful in the mountains!
- ❑ **Toiletries** - Toothbrush, small toothpaste, lip balm (at least SPF 15), small tube of sunscreen (SPF 30 or higher), bug repellent
- ❑ **Feminine hygiene products** (see note on next page)

- ❑ **Flashlight or headlamp with spare batteries** - Small and lightweight
- ❑ **1 sleeping pad** - Thin, lightweight mattress that insulates you from the cold ground. A closed-cell foam or inflatable backpacking pad (like Thermarest) is acceptable.

waist belt. Your pack will weigh 30-50 lbs.

- ❑ **1 sleeping bag with stuff sack** - Warmth rating 0-20°F. A mummy style bag with drawstring hood is preferable. We prefer bags with synthetic fill because, unlike down and flannel, it insulates even when wet. A bulky, flannel sleeping bag is not adequate. Be sure your sleeping bag can be compressed into its own small stuff sack.
- ❑ **3 large-sized plastic garbage bags** - For waterproofing gear.
- ❑ **Watch** - Preferably waterproof/durable.

- ❑ **2 water bottles** — Quart- or liter-sized with leak-proof screw-top lids.
- ❑ **1-2 bandanas** - To serve as your “plate” for trail lunches and other personal needs.
- ❑ **Lightweight eating gear:** small mug, bowl, spoon
- ❑ **Knee/ankle brace** - Required for students who normally use them for physical activity. Consider also bringing trekking poles if you have knee problems.
- ❑ **Journal and pen/pencil in Ziploc Bag** - Journal must be at least 5”x7”, no small reporter flip pads.

Optional Items

- ❑ **Trekking poles** - Recommended for students with knee or ankle issues.
- ❑ **Camera** - Students will not be able to bring cell phones on the backpacking portion of the course.
- ❑ **Warm pants for cold nights** - Fleece pants, pajamas, or sweatpants are fine. No jeans.
- ❑ **Small brush or comb**
- ❑ **Small paperback book** or field guide

A Note about Feminine Hygiene

Menstruation is a concern for many young women when they go backpacking. A change or increase in physical activity can alter your menstrual cycle. Even if you do not expect to get your period, we recommend that you bring supplies as if you were expecting it, in case you fall into the cycle of other participants. If you are prone to yeast infections, bring Monistat (or another yeast infection treatment) as a precaution.

At NatureBridge, we practice a “Leave No Trace” camping ethic. Therefore, we hike out everything that we hike in. Each student will receive double-bags to dispose of used feminine hygiene products. These bags will be carried out and disposed of in a dumpster. Used products stored in this manner do not typically attract animals. Another option is to avoid carrying waste by using a reusable feminine hygiene device, such as the “Diva Cup” or “Mooncup.” If you want to bring this, please try it at home before coming to Yosemite.

Our Educators are experienced in helping participants deal with their periods in the backcountry. There will always be at least one female educator on your course, and a female educator will lead a hygiene meeting for female participants before the backpacking portion of the trip begins to provide tips, answer questions, and address any concerns.

Part II: Equipment for Cabin Days (“Frontcountry”)

For this section, consider items that you will appreciate before or after a long expedition in the wilderness. These items will not go on the backpacking portion of your course but will instead be locked in a storage space.

- ❑ **3 sets of extra clothes** for the first and last couple of days of traveling and hiking. Bring
- ❑ **Other toiletries*** - Shampoo, deodorant, soap, lotions, etc. Liquids should be in 3 oz. containers or less if you

clothes that you might normally wear to school or extra hiking clothes – you will be out in the field and potentially getting dirty.

- Pillow
- Towel
- Day pack

are bringing them in carry-on luggage.

- Entertainment and snacks for travel days** - There is limited storage for electronic devices and food while on course, so please minimize these items.
- Cell phone****

Additional Notes

* About toiletries

On your backpacking trip, every scented item will have to be stored in a bear-proof canister that you will carry with you. Scented items include all food, toiletries, toothpaste, lip balm, sunscreen, medications, etc. Space in these canisters is very limited, and animals will seek out scented items that are not properly stored. For this reason, you will be restricted to only bringing a toothbrush, toothpaste, sunscreen, and lip balm on the backpacking part of the course. Soap, shampoo, deodorant and lotions can be retrieved from storage upon your return to cabins.

** About cell phones

One of the beautiful opportunities of the Yosemite Science Expeditions is the chance to “unplug” from electronics and social media. The rugged nature of the trip and potential for varying weather conditions is not a suitable environment for expensive electronic devices. Furthermore, cell phones often do not have reception in Yosemite National Park (depending on your service provider), and therefore are not dependable emergency devices. Our Educators carry emergency radios with National Park Service frequencies.

As such, it is NatureBridge’s policy that students **do not** have cell phones during the program, and especially not on the backpacking portion of the course. However, we **do** encourage students to bring their cell phone for communication purposes on travel days at the start and end of the program. We will provide you with important NatureBridge phone numbers before your trip.

We recognize that many students also use their phone as their primary camera. We recommend that students bring a separate digital camera or disposable camera to take photos during the backpacking part of the trip. Each trail group will carry a NatureBridge digital camera for the group to use. At the end of the course, photos will be compiled and posted on a photo-sharing site.

What **NOT** to Bring

- **Drugs and alcohol** - This is a *federal offense* in U.S. national parks. Tobacco products (including cigarettes and e-cigarettes) are not allowed, even if a student is 18 years old.
- **Knives and other weapons, bear spray**

Frequently Asked Questions

What will the sleeping and restroom facilities be like during the program?

These facilities vary throughout the trip. When students are at the Crane Flat Campus in Yosemite, they will stay in dorm-style buildings with a separate bathhouse for restrooms and showers. During the backpacking portion of the

trip, students sleep in tents and go to the bathroom outside. Educators are experienced at teaching participants about going to the bathroom in the woods, so do not worry if that will be a new experience for you! Once the students return from the backpacking trip, they will again stay in the dorms at Crane Flat. Laundry is not possible during this program.

Who are the NatureBridge Educators?

Our environmental science educators have years of teaching experience in outdoor and environmental education programs and an enthusiasm for exploring the natural world. In addition to direct teaching experience, all of our educators have a Wilderness First Responder medical certification.

What communication will we have with our parents/family during the program?

There will be periodic, but infrequent email updates from Katie Draude, Summer Programs Manager, during the course. We will also post pictures of the students on the NatureBridge Facebook page 1-2 times throughout the program. Please do not expect updates during the time that students are backpacking - we will only post photo updates to Facebook on frontcountry days.

Conclusion

There is a lot of information in this document and we know that it can feel a little overwhelming to embark on an adventure like this. We want you to be prepared, and not anxious, about the trip. If you have questions or concerns, please contact Katie Draude, the Summer Programs Manager, at 415-598-9832 or at kdraude@naturebridge.org and we will be happy to help. **See you soon!**