NatureBridge has an incredible impact on student lives, yet our groups also have an impact on Yosemite's natural resources. NatureBridge educators have a responsibility to demonstrate responsible actions that our students can emulate in their lives.

This document applies the LNT ethic "Camp and Travel on Durable Surfaces" to NatureBridge programs in Yosemite. Consistent use of these guidelines in the organization will result in a reduction of our program's impact. With a high degree of resource quality, student experiences and their connections to natural world are also enhanced.

There is no replacement for the excellent judgment of our educator staff. These guidelines do not attempt to inform every resource-use decision an educator will face in the field; it simply provides a common framework to guide our organization towards reduced impacts overall.

Applying the "Camp and Travel on Durable Surfaces" LNT Ethic in our programs:

- Understand surface durability (from http://www.lnt.org/programs/principles_2.php)
  - Rock, sand and gravel: These surfaces are highly durable and can tolerate repeated trampling and scuffing. (Lichens growing on rocks are vulnerable to scuffing).
  - Ice and snow: The effect of travel across these surfaces is temporary, making them good choices for travel assuming good safety precautions are followed and the snow layer is of sufficient depth to prevent vegetation damage.
  - Vegetation: ***Avoid vegetation whenever possible***. The resistance of vegetation to trampling varies - careful decisions must be made when traveling across vegetation. Select areas of durable vegetation, or sparse vegetation that is easily avoided. Dry grasses tend to be resistant to trampling. Wet meadows and other fragile vegetation (such as any plants with woody stems) quickly show the effects of trampling. These areas should be avoided altogether. Trampling entices new travelers to take the same route and leads to undesirable trail derailment. Travelers who must venture off-trail should spread out to avoid creating paths that encourage others to follow.
- Be aware of seasonal and temporal variance in durability. Meadow trails can be particularly vulnerable when wet, or when partial snow-cover makes trail-finding difficult. Consider the daily fluctuation in snow conditions that might change durability.
- Use trails whenever possible. Concentrating travel on trails reduces the likelihood that multiple routes will develop and scar the landscape.
- Use meadow boardwalks whenever possible. Boardwalks have been shown to be extremely effective for balancing visitor use with ecological restoration.
- Teach students to travel in the main tread of the trail. Travel around wet or muddy areas cumulatively increases the trail width.
- Avoid crossing fences, unless you are executing a project covered by a special use permit (science study or stewardship project). Fences are NPS' most cost effective tool at managing traffic in restoration areas. If fences are crossed, the restoration efforts will be largely ineffective. Crossing a fence delivers the wrong message about the importance of ecological restoration and protection.
- Manage your groups according to specific guidelines in designated areas of high concern. These guidelines were developed to minimize impacts, while maintaining connective paths of travel and reducing habitat fragmentation. These areas include:

- ***Leidig Meadow***- Leidig Meadow is a meadow that has received a high amount of impact throughout its human history. Visitors are often found at the banks of the Merced River alongside Leidig. It is immediately connected to both Yosemite Lodge and the Swinging Bridge Picnic Area that are connected by an asphalt trail. A network of crisscrossing trails fragment the meadow into several undesirable pieces. These trails have been proven to decrease habitat productivity and reduce the biodiversity of macroinvertebrate communities.
    - NatureBridge groups will focus travel on the southern use trail, connecting the trail to/from the west end with the bike path at swinging bridge. This trail parallels the river.
    - Groups will use the bike path from swinging bridge to Yosemite Lodge, to travel across the meadow in the north-south direction.
    - NatureBridge groups will not access the "Muir Tree."
    - See Leidig Meadow map for route details

- ***El Capitan Meadow***- El Capitan Meadow is one of the most frequently visited places in Yosemite. Trails diverge from all along Northside Drive and crisscross into several major trails extending to the river in the south. There is no active mitigation and the trail along the river's edge sometimes diverges into three parallel trails. There are several group areas that tend to grow and disappear year to year.
    - NatureBridge groups will focus meadow travel on the southern trail that parallels the river. Access to this trail is at the El Capitan Bridge from the east, and from the forested area near the recessional moraine from the west.
    - A single path will lead to an "observation zone" from the north. This path is an extension of a use trail from the north side of the road, and originates across the street from the 35 MPH and "Killer Deer" signs. Groups should take care to minimize the size of the impacted observation zone.
    - See El Capitan Map for more details.

- ***Crane Flat Meadow***- Great Grey Owl mitigation during breeding season, from March or April through August 1st. The season start is determined by snow depth <2' or <95% snow coverage. A program is in place to measure the snow depth weekly to determine when the guidelines begin each spring.
    - Learn about the Great Grey Owl and share your knowledge with your students.
    - Use the Crane Flat Meadow complex for quiet reflection, observation and inspiration. Sit quietly along the edges. Listen to the wildlife. Watch the stars.
    - Take your group to the Educational Use Area, just across the road from the campus (see map). This is the area where our impact on the Owls is likely to be smallest because it is close to an already developed area.
    - Do loud, energetic activities 50 meters away from the meadows (see map). Do noisy things 200m from the meadows during the breeding season*.
    - Ski on the meadows when the snow is deeper than 2 feet (60 cm) and covers 95% or more of the ground.
    - Get your students involved in the Crane Flat Meadow snow survey to empower them to make decisions about how we use the meadow.