

Vista Restoration and Interpretive Report

Prepared by:

Jeremy Boron
Benjamin Dow
Richard Lancaster
Jeremy Mead
Lucas Recore
Kevin Todd

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Vista Restoration and Interpretive Report

Introduction:

Acadia National Park, known for its beautiful landscape, recreational opportunities and educational resources, is a landmark of the state of Maine. Through a generous donation from John D. Rockefeller Jr., there are forty-seven "miles of rustic carriage roads that weave around the mountains and throughout the valleys" of the park (Williams and Britain, 1999). The roads were designed and "carefully planned to allow smooth driving and easy riding" (Roberts, 1990). When John D. Rockefeller built his roads he had a couple of specific objectives in mind. In constructing the roads, "he wanted to provide access to the island's mountains and valleys for riders on horseback and in carriages. Then, he wanted to open the inner regions of the landscape to larger numbers of pedestrians than those who used the many narrow footpaths already in existence" (Roberts, 1990). Located along these roads are scenic overlooks called vistas. The park has identified 100 of approximately 251 vistas. Of the 100, there are fifty that have been labeled as higher priority. In accordance with Rockefeller's donation, the park must maintain these vistas. Park staff must routinely check the vista for standing deadwood and any other vegetation that may hinder the view. In the spring of 1999, a group of University of Maine students were assigned to restore vista #14, located along the Amphitheater Loop.

To restore the vista, a harvesting system of skyline logging equipment was used. The development of a skyline logging system came about as an alternative to conventional methods of timber harvesting. The need for skyline logging can be looked at as three fold; 1.) Environmental problems 2.) Terrain of the land and 3.) Access to harvest sites. Due to the rougher terrain and the limited accessibility, skyline logging is more widely used in the Pacific Northwest, rather than the Northeast. Conventional harvesting techniques, such as the use of Skidders, could not be used for tree removal in Acadia National Park. The use of a skidder was not an option, as skidders are not allowed on Mount Desert Island. For this reason an alternative process had to be selected. After examining the project location and consulting others

with experience, it was determined that skyline logging would be the most effective and most ecologically sound method.

Vista #14 The Amphitheater Loop:

The vista restored by the university students was located along the 20-21 section of the carriage road. The vista is on the west side of the Amphitheater Loop, located south of the Amphitheater Bridge. The opening of this vista created views overlooking the Atlantic Ocean and Jordan Ridge. To view the vista area, one would enter from the Brown Mountain Gatehouse located along Route 3 and follow the signs leading to the Amphitheater Loop. The area is just before the Amphitheater Bridge. (See map 1)

The vista site was marked with four stakes. There were two feathering regions and two cutting points. Located on each end of the vista site were stakes flagged as feathering regions. On the inside of each feathering region were stakes flagged as the cutting points. The feathering regions were used to taper the tree removal into the cutting region.

The dominance of the hardwoods limited the view overlooking the ocean and the view looking towards Jordan Ridge. Only faint traces of the Ocean could be seen from that point along the carriage road. The principle view of Jordan Ridge was obscured by the overstory of the trees. Prior to the removal of any vegetation, photographs of the vista site were taken using a digital camera. A digital camera was used for it's ease in processing and downloading of the images. Approximately six photographs of the site before cutting were taken. There were two pictures centered at Jordan Ridge and four pictures centered towards the Atlantic Ocean. To remember the direction of the pre-cut photographs, azimuths were recorded for the use in the post-cut photographs. Gradually the larger hardwoods were cut, beginning to open up partial clearings within the vista. As the felling and removal of trees progressed, two scenic views became more apparent. After the cutting was complete, the second set of six photographs was taken using the digital camera. Using the azimuths recorded from the pre-cut photographs, the post-cut photographs were centered in the same location. The two sets of photographs were used to document the changes in the vista site.

Prescription:

To open up this vista, a set plan, or prescription was written up by personnel at Acadia National Park. An initial set of trees was marked for cutting with orange paint. If needed, the university students had the option of removing other trees deemed necessary to create a more natural view. Trees that were marked with red and white flagging were not to be cut. Park staff executed the prescription with the following dimensions: 1.) Vista marked with temporary flagged wooden stakes

2.) The distance of the vista is 213 feet, with 96 feet North and 69 feet south to establish feathering regions.

The trees outlined in the prescription for removal set forth by the park is as follows:

- 7 Red Maple (*Acer rubrum*)
- 17 Birch (*Betula* spp.)
- 1 Red Oak (*Quercus rubra*)
- 2 Striped Maple (*Acer pensylvanicum*)
- 3 Clumped Red Maple (*Acer rubrum*)
- 2 Poplar (*Populus* spp)
- 7 Beech (*Fagus grandifolia*)
- 2 Ash (*Fraxinus* spp.)

The plan prepared by park personnel set forth the following goals and objectives:

1. Retain a closed canopy within the vista
2. Encourage the look of an uneven aged stand
3. Remove all poles <3" in diameter
4. Remove all hazardous deadwood (snags)
5. Randomly save a mixture of deciduous and coniferous saplings
6. All poles that are not removed should be felled across the slope to reduce erosion

7. Within a 15 foot corridor adjacent to the carriage road, remove all shrubs and poles <2" in diameter to help improve the overall view
8. Remove all slash and lay it flat

Every four years park personnel will return to the vista for schedule maintenance. If any saplings or branches need to be cut or trimmed, this is when it will be done.

Outlined above is what the park intended to be completed in the time allotted to the university students. Due to uncontrollable circumstances, there was not enough time to complete the entire vista restoration project. On the first day, mechanical problems were encountered that posed problems and created delays in the project. Plans are set at this time for students to finish the restoration of vista #14 in the spring of 2000.

Methods:

The specific system used to restore the vista is referred to as a live skyline. The system consisted of various components. The actual components used are a mobile yarder, guylines, shivs, carriage, chokers, mainline, a skyline, a headspar and a tailspar. To begin the set up procedure, the mobile yarder had to be properly positioned. For this to be done successfully, a crew of three people was needed. Two of the people positioned themselves in line between the two trees being used as anchor points. This was so they could direct the person in the mobile yarder to be precisely in line with the two anchor trees. The next procedure completed was to set up the guylines to support the tower. These guylines were attached to nearby trees, which were selected to be used as anchors. Once that was completed, the next step was to run the skyline over the tower and down to the tailspar tree. The skyline was carried down the slope to the bottom tailspar tree, where it was attached to a shiv and a braided nylon strap. Once the skyline was secure at the bottom, the next step to accomplish was to attach the skyline to the headspar tree. Once attached the skyline was left with enough slack to enable the carriage to be connected. The carriage then had to be set on to the skyline. The carriage is now on the skyline and the mainline has to be linked to it by sending it through a series of shivs and then dropped down through the jaws. The mainline is then strung through the

load pendulum where it connects to the loadhook. The loadhook is where the chokers will be attached when hauling up the logs and brush.

The main system is now near completion. All that remains to be done is to remove the slack from the skyline. This is done using a series of grips and a chainfall. The chainfall is attached to the headspare and then to the skyline as near to the tower as the chainfall will allow. This process was repeated until the proper deflection was reached to properly operate the system. A complete diagram of the system is attached. (See figure 1)

With the system properly in place it is now ready for operation. To operate the system, a three-person crew is needed. There was one person in the cab of the mobile yarder, one person at the landing site and one person located on the slope. The two people outside of the cab remained in communication using CB radios. The person on the slope also had a remote device to control the carriage as it came down the skyline. A separate crew was also located along the slope to set up the chokers for removing the logs and brush. Using various hand signals the two-person crew with the radios was able to communicate with the person in the cab of the yarder. The logs that were hauled up onto the landing were bucked into approximately 16" lengths and then split into firewood to be used in the park campgrounds. The brush that was hauled up onto the landing was piled together and fed into a chipper. The chips were to be used for landscaping throughout the park.

Safety:

In any type of forestry operation, numerous safety hazards exist. Workers must always be aware of falling debris, hazard trees, terrain (wet and dry), and logs being twitched. In using the cable logging system, this is no different. A few of the same hazards are found, as well as others. Of all the safety concerns, the most important is the work condition. Trees were being felled and hauled out on a 45 degree slope. That steep of a slope is dangerous in any conditions, but hazards increase in wet conditions. In the act of hauling the logs along the carriage, there is always the possibility that a choker could come loose and send a log rolling down the slope. In prevention, all crews remained to the side of the cutting path as the carriage moved up the slope. In setting up and taking down the system, another hazard was introduced.

While working with cable rope, it is a definite possibility that a wire spur could become lodged in a person's hand. To prevent this from happening all crewmembers had to be wearing double-banded leather gloves.

Conclusion:

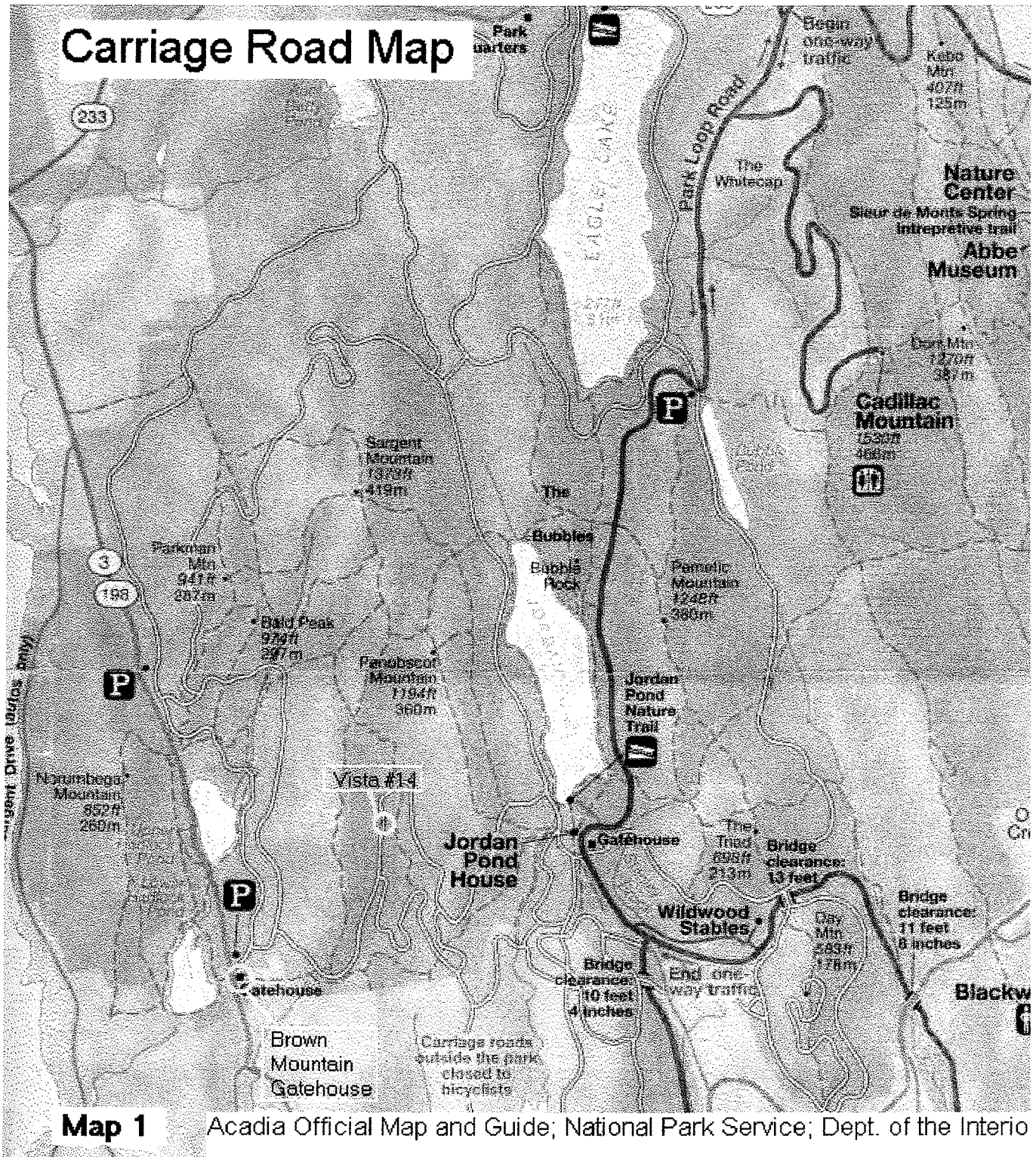
Despite it's relatively non-existence in the northeast, skyline is a very useful tool. It has been proven that skyline logging is "effective for harvesting steep terrain where feller bunchers and skidders cannot operate" (Forest Engineering, 1996). Even though skyline logging is a slower process of timber harvesting compared to conventional methods, the benefits far outweigh the drawbacks. In addition to it's effectiveness on steep terrain, skyline logging also minimizes soil disturbance and erosion. With less soil erosion and disturbance of the land, a more "leave no trace" method is practiced. With the use of skidders, twitch trails are needed which have to follow the lay of the land. With skyline logging, the lay of the land is not as important. In comparison to other machinery, a skyline system has less wear and tear. There are fewer parts that can break down resulting in lost time. For these reasons, a skyline logging system was used for the vista restoration project in Acadia National Park. The overall operation ran very smoothly with few complications. In years to come those who pass by this spot will be able to enjoy the natural beauty of the ocean without ever knowing that this area was created by a harvesting technique.

Bibliography

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Appendix

Carriage Road Map



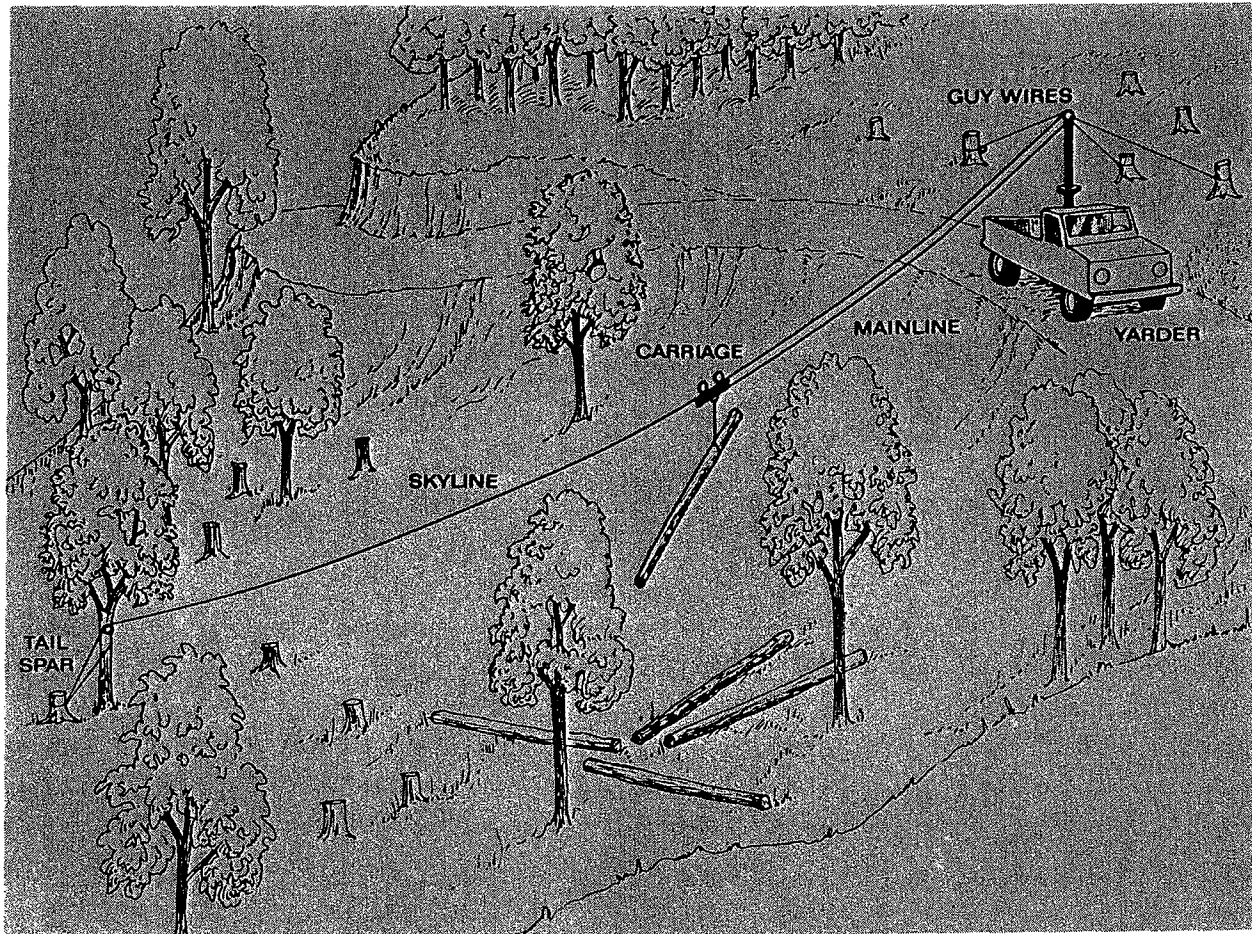


Figure 1.—Diagram illustrating some operational principles of skyline logging. Other cable logging systems embody similar principles.