

**TRAILS DESIGNATION PROJECT IMPLEMENTATION - PHASE ONE
ACCOMPLISHMENT REPORT**

**SHAWNEE NATIONAL FOREST
HIDDEN SPRINGS RANGER DISTRICT
FISCAL YEAR 2006**



Hidden Springs Ranger District's Trail Crew in the Lusk Creek Wilderness.



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Trails Designation Project Implementation: The 2006 trail project season saw the implementation of the much awaited Trails Designation Project on the Shawnee National Forest. The Trails Designation Project involves designating, constructing and maintaining a 223-mile trail system within four watersheds. The four watersheds (Eagle Creek, Big Grand Pierre Creek, Lusk Creek, and Upper Bay Creek) are located in southern Illinois and comprise about 30 percent of the Forest. An important aspect of this project is wilderness management relative to equestrian use (Figure 1). This season, the Trails Designation Project focused on constructing new sections of trail re-routes for hiker and equestrian use throughout the Lusk Creek Wilderness. Newly designated re-routes were constructed to improve trail and resource conditions. For instance, previously eroded sections of Goat Trail fell straight down the canyon (Figure 2). The newly re-routed sections now follow the natural contour and proper grade (Figures 3 and 4).



Figure 1. Hidden Springs District Ranger monitoring equestrian use in the Lusk Creek Wilderness.

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Figure 2. Forest Volunteer monitoring previous eroded sections of Goat Trail.



Figure 3. Hidden Springs District's Summer trail crew working on re-route at Goat Trail.

Figure 4. Newly re-routed section of Goat Trail following the natural contour.

Trail Work in the Wilderness: In accordance with the Wilderness Act of 1964 and the Illinois Wilderness Act of 1990, trail work in the wilderness was accomplished using only primitive tools and traditional methods. To accomplish this task, the Hidden Springs Ranger District hired a seasonal trail crew comprised of eleven local college students, a crew leader, and a trails technician (Figure 5). The crew members worked ten hours a day five days a week for three months using only hand tools to construct trails in the Lusk Creek wilderness (Figure 6). Tools, equipment, and building materials were carried by hand or pack stock over rough terrain in order to reach the project sites (Figure 7). In less than three months since the implementation of the project on June 24, 2006, the trail crew, with over 6,000 person-hours invested on the ground, made significant accomplishments on trail work within the wilderness (Figure 8).



Figure 5. Members of the 2006 Hidden Springs Ranger District Summer Trail Crew.



Figure 6. Crew members using hand tools to construct trails in Lusk Creek Wilderness.



Figure 7. Trail crew members using pack stock in the Lusk Creek Wilderness.



Figure 8. Newly reconstructed and signed northern entrance to Secret Canyon at Lusk Creek Wilderness.

Primitive Tools: In keeping with the Wilderness Act, only primitive tools were used in the wilderness. Crosscut saws were used to clear fallen trees and provide native building materials for the construction of trails (Figure 9). Sledge hammers were used to crush rocks in order to use smaller stones in French drains. Shovels were used to move tons of soil in order to build the trail tread. Crew members also used primitive tools to construct a major creek crossing where under normal situations (outside of wilderness) they would have used modern methods and heavy equipment. Crew members fabricated rock baskets of steel chain used to carry over 30 tons of sandstone rock for the construction of many trail features such as a major creek crossing (Figures 10 and 11). Other trail features such as stone steps, turnpikes, rock crib walls, drainage structures, and switchbacks were built with natural materials and constructed by hand (Figure 12).



Figure 9. Cross cut saws being used by trail crew to remove fallen trees from the trail.



Figure 10. Crew members using rock baskets to move sandstone.



Figure 11. Trail crewmembers moving sandstone rock from the trail.



Figure 12. Trails Technician Brian Bourne constructing Goat Trail re-route.

Figure 8. Traditional Methods: Detailed rock work accomplished by the trail crew is comparable to that of the high quality trail work accomplished by the Civilian Conservation Corps in the 1930's that continues to stand as a testament to hard work, ingenuity, and taking pride in accomplishment (Figure 13). The trail crew, under the direction of Trails Technician Brian Bourne, resurrected the art of dry stack masonry, using stone without mortar, in building many trail features (Figures 14 - 16). This traditional method has been nearly lost or abandoned for modern means. Cribbed retaining walls used this method and were one of numerous structures built in order to implement sustainable trails on steep side slope. Ten tons of sandstone rock was used for the retaining wall along the re-route north of secret Canyon (Figure 17). Natural building materials such as sandstone were also used to construct intricate trail features such as rock walls, stairs, and climbing turns that often descended into and climbed out of canyons (Figures 18 - 20). A switchback, with French drain, required 2 tons of gravel crushed with a sledge hammer (Figures 21 and 22).



Figure 13. Trail crew members standing next to stone retaining wall with fabricated rock basket.



Figure 14. Trail crew member using a chisel and hammer to shape a piece of sandstone.



Figure 15. Dry stack masonry being used to construct a retaining wall.



Figure 16. Dry stack masonry being used along the trail.



Figure 17. Cribbed retaining walls built in order to implement sustainable trails on steep side slope.



Figure 18. Cribbed trail section along the River-To-River Trail.



Figure 19. Stone stair case at Secret Canyon.



Figure 20. Cribbed trail section at Secret Canyon.



Figure 21. A switchback, with French drain, required two tons of gravel crushed with a sledge hammer.



Figure 22. Switchback on Goat Trail above Bowed Tree Creek Crossing.

Native building materials such as cedar trees were also used in the construction of trail features such as turnpikes. The turnpikes were built using cedar logs and filled with gravel and clay mixture that raised the trail tread above wet areas such as perched water tables (Figures 23 and 24).



Figure 23. Turnpikes built using cedar logs and filled with gravel and clay mixture raised the trail tread above wet areas.



Figure 24. Newly constructed turnpike on trail section 429A north of Secret Canyon.

Layout and Design: Each section of newly constructed trail was carefully evaluated for resource protection, checked for proper slope, and designed to ensure sustainability. Pin flags were used to mark the proposed trail before breaking ground (Figure 25). This allowed the specialist to conduct their analysis prior to ground disturbance. Once the corridor was brushed back and the initial tread established, a trail crew member often double checked for proper slope of trail tread (Figure 26).



Figure 25. Pin flags were used to mark the proposed trail.



Figure 26. Trail crew member double checks for proper slope of trail tread.

Surfacing: When necessary, the trail tread was built up to create sustainable drainage. Sandstone was crushed by hand, laid in the trail tread, and river gravel from nearby dry streambeds was then shoveled into five gallon buckets and carried to the trail to cap the tread (Figures 27 and 28).



Figure 27. Sandstone being crushed by hand and laid in the trail tread.



Figure 28. River gravel carried to the trail to cap the tread.

Attention to Detail: Stones were placed around the base of trees along the trail to protect roots from stock animal's hoofs (Figure 29). Stone was also used to harden small seasonal stream crossings (Figure 30).



Figure 29. Sandstone placed around base of tree to protect the roots from compaction.



Figure 30. Sandstone used to shore up stream embankments.

Accomplishments: From June – August 2006, the trail crew constructed 4 miles of full-bench trail re-routes in the Lusk Creek Wilderness to include moving nearly 330 tons of gravel and sandstone using only pack animals and hand tools (Figures 31 and 32). Trail features constructed include one major creek crossing, a switchback with French drain, a stone stair case descending hundreds of feet into a canyon, and several hundred linear feet of cribbed retaining walls and turnpikes. By creating connections between designated trails with short re-routes, hundreds of linear feet of eroded non-designated trail were brushed in to allow the process of natural vegetation re-establishment (Figures 33 – 40).



Figure 31. Trail crew using hand tools to construct full-bench trails.



Figure 32. Trail crew emptying saddle packs of gravel.



Figure 33. Before. Deeply eroded non-designated section of Goat Trail falling straight down the canyon. This section was brushed in.



Figure 34. After. Newly re-routed section of Goat Trail following the natural contour and proper grade.



Figure 35. Before. Old, eroded non-designated section of River-To-River Trail along Lusk Creek has potential for adding sedimentation to creek.



Figure 36. After. Properly located re-route well above the creek and constructed at proper grade eliminating possible sedimentation.



Figure 37. Before. Highly eroded non-designated section of Goat Trail west of Bowed Tree Crossing.



Figure 38. After. New section of Goat Trail re-route that eliminated non-designated eroded section.



Figure 39. Before. Trail section climbing up north out of Secret Canyon with steep slope.



Figure 40. After. Cribbed retaining wall built in order to implement sustainable trail on steep side slope.

Accomplishments (Blanchard Church Creek Crossing): The Blanchard Church Creek Crossing was relocated and constructed to mitigate resource damage and provide improved recreation opportunities. The old crossing was deeply eroded, dangerous to use, and had the potential to add sedimentation to Lusk Creek (Figure 41). Once the new crossing was build, the old crossing was brushed in with limbs and sandstone (Figure 42). The new Blanchard Church Creek Crossing required the use of horse and mule teams provided by local residents. The teams hauled 21 tons of gravel and 18 cedar logs into the wilderness necessary to build the many steps of the new crossing (Figures 43 - 46).



Figure 41. Before. Deeply eroded site of old crossing (north embankment) - dangerous and added sedimentation to Lusk Creek.



Figure 42. After. North embankment of old crossing after being brushed in.



Figure 43. After. Newly reconstructed north embankment of Blanchard Church Creek Crossing.



Figure 44. After. Newly reconstructed south embankment of Blanchard Church Creek Crossing.



Figure 45. Stock animals being used to haul in gravel to the wilderness.



Figure 46. Trail crew unloading stock animals.

Accomplishments (Trail Maintenance): In addition to the construction of new trails, heavy maintenance was conducted on twenty miles of trail to clear 55 fallen trees, build 70 erosion control features such as drainages and water bars, reinforced 80 feet of stream bank with stone, and closed nearly 500 linear feet of braided trail (Figures 47 and 48).



Figure 47. Cross cut saws were used in the wilderness to clear fallen trees from the trail.



Figure 48. Saltpeter Cave tie-up area, after highline was relocated and previous confinement area converted to ride-through-only.

Accomplishments (Pack Stock Team): Also, contracted pack stock teams hauled an additional 240 tons of gravel into the wilderness to harden 5.25 miles of trail tread and provide gravel for the construction of major trail features (Figure 49). The type of gravel used in the wilderness is commonly referred to as red fines gravel and has a clay binder (Figure 50). The clay binder allows the gravel to stick together and harden to a consistency of that of concrete while creating a natural appearance when used within the wilderness. Each finished trail section had a gravel depth of at least four inches and a width of twenty inches. The placement of gravel on the trails in the designated areas improved drainage, especially during wet weather conditions, and provides a safer surface for trail users.



Figure 49. Contracted pack stock team hauling gravel into the wilderness.



Figure 50. Red fines gravel pile just outside the wilderness.

Accomplishments (Trails Sign Plan): During the summer of 2006, the first phase of the trails sign plan was implemented in accordance with the Trails Designation Project. A total of 50 new wilderness directional trail signs were installed throughout the Lusk Creek, Bay Creek and Garden of the Gods Wilderness Areas. The signs were installed along designated trails located at trail junctions, entrances to wildernesses, and authorized equestrian crossings of Lusk Creek. The signs were mounted on round, peeled-full-length cedar posts to fit into the wilderness character (Figure 51). Vandal resistant lag screws were used to attach the signs to the posts.

In addition to the 50 signs in wildernesses, 173 new directional trail signs were installed along designated trails, outside of the wildernesses, within the Lusk Creek, Eagle Creek, Big Grand Pierre Creek and Upper Bay Creek watersheds. The directional signs are mounted on a full length pressure treated posts using the vandal resistant lag screws (Figure 52). The second phase of the signage project of the Trails Designation Project is scheduled for completion by October 2007.



Figure 51. New wilderness directional trail sign installed in the Lusk Creek Wilderness.



Figure 52. New directional trail signs installed along designated trails, outside of the wildernesses.