Taking a Look at Trails: Part 2

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Part 1 of this series looked at some trail designs and locations. This edition examines more trails and their impacts.

Figure 4. People love walking next to lakes and rivers. However, trails adjacent to waterways with elevations close to the normal water level end up muddy (A). The water table under the path is close to the surface. Any precipitation does not absorb into saturated soil and is unable to readily drain off the flat terrain. Four-inch PVC tubes meant to facilitate drainage are inadequate and wind up clogged. When winter arrives and the water freezes, ice expands and heaves the trail. This western section of Royal Lake's loop receives some of the most complaints about mud because it is placed in an inappropriate area, requires much upkeep, and is an unsustainable trail section. Putting the trail along the nearby slope would be a better location. Examples of sustainable, natural-surface trails next to water include the C&O Canal towpath at Great Falls National Park (B) and paths along bedrock, such as Great Falls' Billy Goat Trail (not shown).

Figure 5. Pavement can often prolong a trail's maintenance even in poorly chosen locations. In the wrong place, a trail will flood regardless of what is on its surface. Pavement does not part water, leaving a puddled and mud-covered blacktop (A). Silty layers render pavement dicier than walking across a muddy field, discussed in the article, Slippery When Wet (December 2018). Mosses, algae, and other biofilms also make frequently wet trails slick. Furthermore, water can undercut and erode asphalt trails, which is what happened many years ago at the Shanes Creek trailhead by Roberts Road. Boardwalk trails (B) are the best way to access wetlands on foot. Replacing the half-mile boardwalk and two overlook platforms at Huntley Meadows Park in 2011 cost $600,000, which comes to around $178.00 per square foot for replacing wooden

planks with recycled plastic ones—there were no structural additions that would further inflate the cost. This price tag is prohibitively expensive for all but a few locations. Additionally, floods can damage boardwalks, especially when floating logs hit the structures like battering rams. More on the Huntley Meadows Park boardwalk is at: https://www.tmgworld.net/portfolio-item/huntley-meadows-park-boardwalk-renovation/# and https://archive.org/details/New_Boardwalk_at_Huntley_Meadows_Park

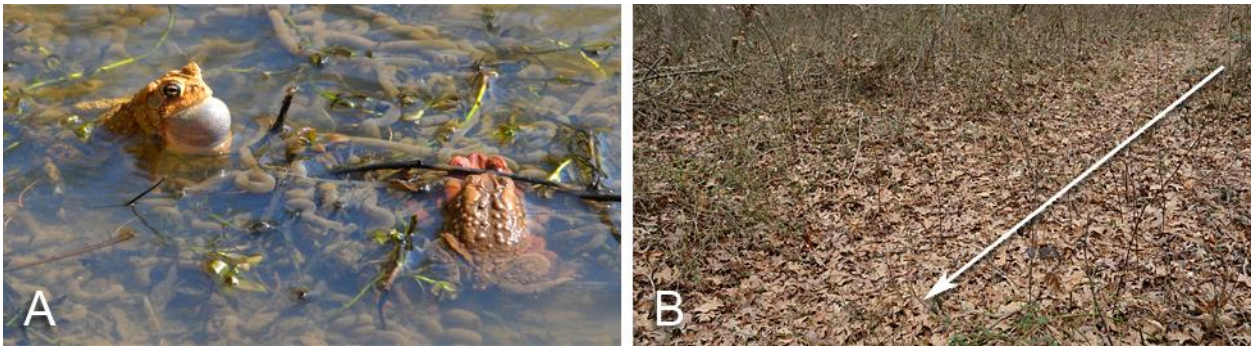

Figure 6. Detrimental aspects to any trail include wildlife disturbance and soil compaction. The degree to how much an animal is disturbed depends on the species, time of year, and the particular human activity. Some animals become accustomed to human presence though can be more sensitive when breeding. Others, such as hooded mergansers (*Lophodytes cucullatus*), tend to shy away from people even from long distances. Weeks after the American toads' (*Anaxyrus americanus*) spring spawning event (A), the eggs hatch and tadpoles develop. After the young grow legs, they hop onto dry land for the first time. When popular trails are next to their aquatic nursery, many of these toadlets get crushed underfoot and runover by bicycles. Salamanders and other slow-moving critters face similar risks.

On the surface, soil compaction is difficult to see. At its worse, compressed ground kills neighboring trees and impacts burrowing organisms. Its affect is more apparent when a trail is decommissioned (B, with more prominent leaf litter accumulation along the arrow). Though nobody walks on it anymore, plants still do not grow there. Proper planning and initial trail placement help reduce effects from soil compression.

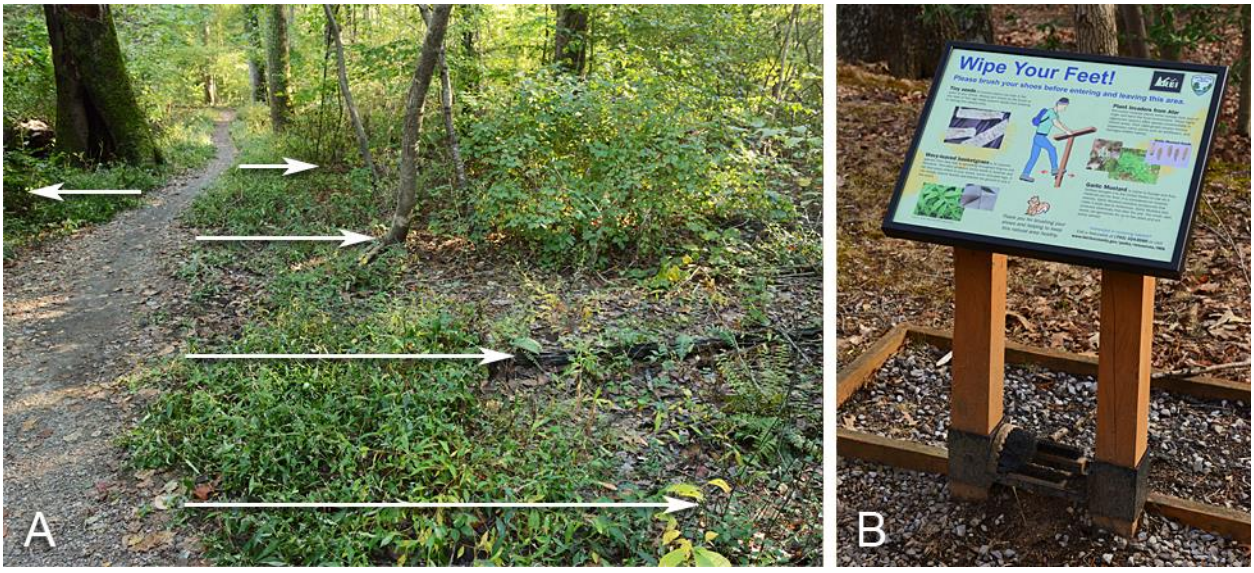

Figure 7. Invasive plants with small seeds are routinely tracked by footwear and deposited along trails (A). This image shows Japanese stiltgrass (*Microstegium vimineum*) and bristled knotweed (*Persicaria longiseta*) only growing alongside the trail (arrows indicating the extent). Once established on path edges, the weeds extend deeper into the forests. Help prevent spreading invasive plants by staying on the official trails and cleaning footwear with tools like boot brush stations (B).

Part 3 studies terrible path locations and problems with "social trails."

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