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Why would enlarging, or increasing traffic flow on Stadium Road harm the Gordon Natural Area?

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Why would enlarging, or increasing traffic flow on Stadium Road harm the Gordon Natural Area? (Jan 2014)

Answer 1) Roads fragment habitat. Studies have shown that roads produce the negative consequences of habitat fragmentation, with wider roads causing significantly more ecological harm than narrow roads.

Definition: **Habitat fragmentation** occurs when a single large block of natural habitat is reduced in area and divided into two or more separate patches.

Habitat fragmentation separates habitat, reduces or eliminates "forest interior" habitat, reduces plant and animal dispersal, and limits genetic exchange. These in turn promote local extinction and hence a reduction in native biodiversity.

Comment. The current single-lane road through the Gordon Area is so narrow that the forest canopy remains unbroken. Any road that is even slightly wider (including shoulders) would produce a break in the canopy and would significantly reduce the amount of forest interior habitat (= closed canopy forest at least 300' from an edge).

Answer 2) Traffic kills wildlife. Studies have demonstrated that road kill can be one of the most significant sources of mortality for many species of wildlife. The risk of road kill increases with greater road width, more traffic volume, and faster vehicle speed.

Comments. The Gordon Area currently supports a large deer population. Increasing the traffic volume and/or speed will result in a higher probability of deer-vehicle collisions.

The Gordon Natural Area supports numerous species of amphibians that must cross the existing road to get to pools and streams each year for breeding.

Answer 3) Roads encourage environmental damage. Roads that go into or through a natural area can promote environmentally negative consequences.

Examples:

(1) Easy access encourages more visitors, which in turn can result in more litter and dumping, more off-trail use, and more collecting of plants and animals.

(2) Roads produce more rapid rainwater run-off into local waterways, and consequent contamination of the waterways with salt, oil, and other pollutants.

(3) Roads encourage access into the forest by "opportunistic meso-predators" such as raccoons, opossums, skunks, foxes, as well as stray cats and dogs. These predators have been shown to increase the mortality rates for ground nesting birds and their eggs and offspring.

(4) A wider road will encourage non-native invasive plant species to colonize what is now forest interior habitat.

Answer 4) *Road construction degrades a watershed.* A much larger area of habitat is damaged during the construction of a road than will ultimately be covered in pavement.

Examples of "collateral damage:"

- (1) killing of native plants and animals,
- (2) compaction and disturbance of the soil, and
- (3) pollution and siltation of local waterways.

Answer 5) *A larger, busier road will interfere with research and teaching activities.*

The current road is very "user friendly" for educational activities. For example, instructors can bring a class into the Gordon Area in a van and leave the van unlocked by the side of the road. The van can then serve as a mobile "equipment shed" for all of the materials required for the research/teaching activity. Students can easily cross the road to get to either side of the Gordon Area and can easily access materials stashed in the van.

Problems caused by a wider, busier road:

- 1) vans would need to be kept locked, preventing easy access for equipment and supplies needed by students
- 2) vans would probably need to be parked in a parking lot outside of the Gordon Area, separating classes from access to equipment and supplies
- 3) students could not safely conduct their classroom and research projects along the road bed, as is currently done for many classes
- 4) students could not safely cross the road along its entire length to access both sides of the Gordon Area, as is currently done

Answer 5) *A larger, busier road will completely interrupt the existing trail system within the Gordon Natural Area*

The existing trail system has been designed to allow ready access to key teaching and research areas, while avoiding ecologically sensitive areas. The primary access points for all trails are located along the road, and the trail system crosses the road at numerous points. A larger busier road will make it extremely difficult to utilize our trail system.

Conclusion. *For all of the above reasons, the Mission Statement of the Gordon Natural Area specifically prohibits the "creation of any new or enhancement of any existing trails or roads."* This Mission Statement was unanimously approved by the WCU Environmental Council (renamed the Sustainability Advisory Council) in 2002 and appears in its entirety on the GNA Website.