Roadways and Turtles

Solutions for Safety

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This year conservation groups around the country are partnering to raise awareness of the plight of turtles. The Minnesota Department of Natural Resources (DNR) has joined in this effort. There are many threats to turtles; roads are just one of the obstacles that they encounter.

This flyer offers some practical ideas on how road authorities can minimize the negative impacts of roads on turtles and other wildlife. They are recommendations and a call to action; not requirements. Minnesota's "Toward Zero Deaths" effort has made tremendous progress in saving human lives. The science of Road Ecology challenges us further to provide safe passage for wildlife and reduce wildlife-vehicle collisions.

The following suggestions will also help safeguard water quality, increase road safety, and may also save you time and money. Incorporating just one recommendation into your road program may be enough to improve turtle conservation in your area. It is possible to balance habitat and transportation safety issues through cooperation, collaboration and coordination.

Roadside Maintenance

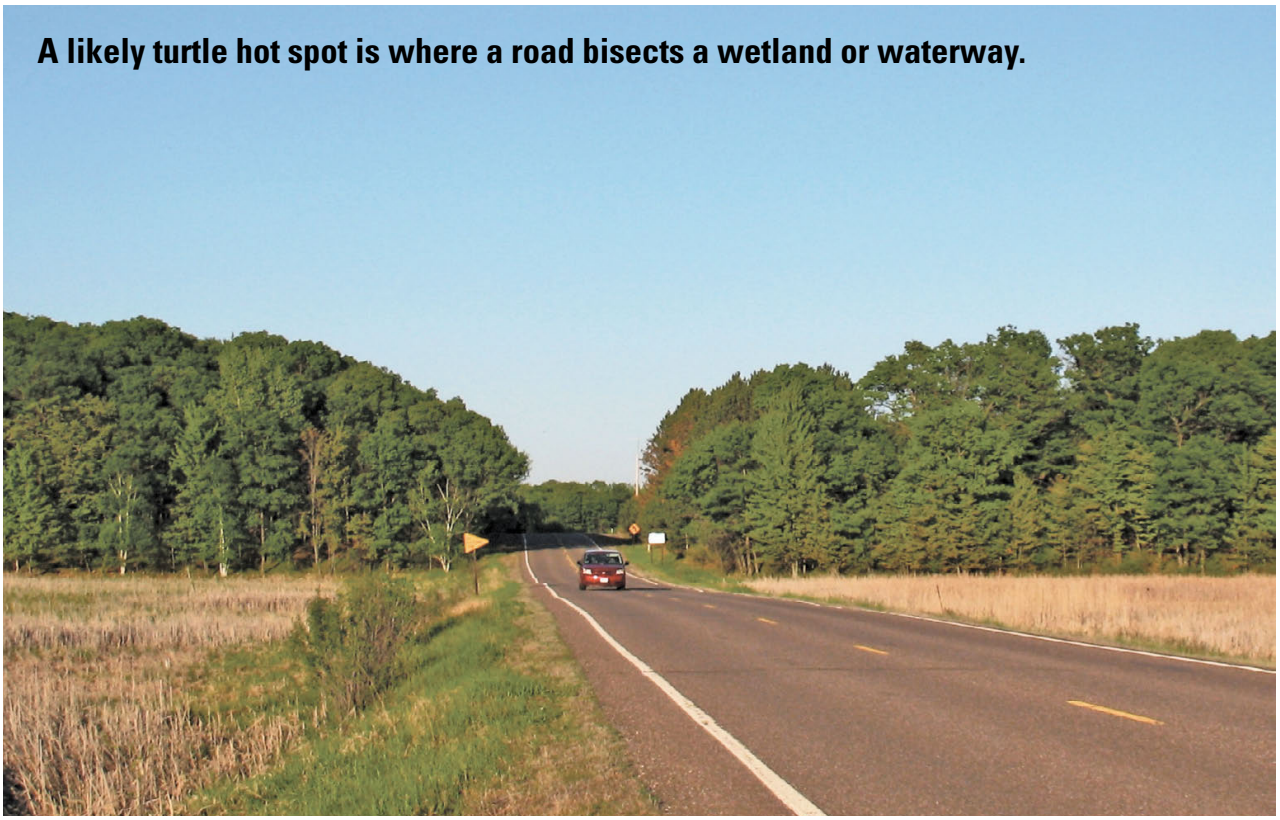
- Gravel shoulders and inslopes near lakes and wetlands are favorable nesting sites for some turtle species. Whenever possible, avoid or minimize grading road shoulders near lakes and wetlands from mid-May to August; this will increase the chance of a successful hatch.

- Turtles which are in imminent danger should be moved, by hand, out of harm's way. Turtles which are not in imminent danger should be left undisturbed.
- Spot mow or spot spray invasive species rather than broadcast spray pesticides on roadsides.
- Roadside mowing should be done as infrequently as possible.
- Brush removal should occur in the fall through early spring.
- Temporary turtle crossing signs can be installed to increase public awareness, reduce road kills, and increase road safety.
- Systematic record keeping of turtle mortality on Minnesota roads does not exist. You can help by identifying where turtles are found (dead or alive). Contact your DNR Nongame Wildlife Specialist for technical assistance. http://www.dnr.state.mn.us/eco/nongame/index.html

Road Design

- New road alignments should avoid bisecting wetlands. When they do, crossings should be bridged.
- On existing roads, where there are turtle hot spots, fencing should be considered to prevent turtles from attempting to cross them. Fencing should lead turtles to a nearby culvert or bridge. This is more important on roads with higher average daily traffic, than on low volume roads.
- Maintenance people are often knowledgeable about the likelihood of wildlife on roads; involve them in planning reconstruction projects or new road projects.
- Traditional curb and gutter should be avoided (see Curb and Gutter section).
- Roads should be kept to minimum standards on widths and lanes (this reduces road kills by slowing traffic and reducing the distance turtles need to cross).

Turtles, snakes, ducklings and other wildlife can get tangled in welded plastic mesh. Use woven or unwelded mesh instead.



A likely turtle hot spot is where a road bisects a wetland or waterway.

Level passage benches make bridge inspection easier and benefit wildlife.

Construction

- Silt fencing should be set up to keep turtles out of construction areas during the nesting season. This is often required in areas of known threatened or endangered species in order to prevent nesting within the work area. This fencing should be removed when the area in no longer undergoing active construction.
- Avoid using erosion control products that are made with welded plastic mesh or webbing. Turtles, and other wildlife, can become entangled in the mesh. Products with woven or unwelded material allow flexibility of the openings and can be utilized.
- Use biodegradable material in all components of erosion control blanket and biologs (fiber rolls) that are to be left on site as part of final stabilization.

Passage Structures

- In Minnesota, turtles use rivers and streams as travel corridors as well as for core habitat. Most, if not all turtles can pass under bridges while in the water, however there are typical designs that can aid other species movement along our waterways. Incorporating a passage bench into riprap design is a cost effective solution. See Chap. 1 pg. 16 at the link: http://www.dnr.state.mn.us/waters/watermgmt_section/pwpermits/gp_2004_0001_manual.html
- Existing structures may only need small modifications such as filling in riprap with gravel so turtles and other wildlife can pass safely.
- Exclusion fencing to prevent turtles from reaching the roadway may be the best option in areas where turtles have been known to cause traffic problems.
- Culverts between wetland areas, or between wetlands and nesting areas, should be sized accordingly, with a minimum diameter of 36 inches for dry culverts and bankfull width in diameter for culverts on perennially flowing waters. A flat-bottomed or arched culvert with the shortest possible length is preferred.

Fencing

- For permanent fencing, standard Mn/DOT right-of-way chain-link fencing installed tight to the ground is adequate to guide turtles toward underpasses.
- It is critical that the fence endposts fit tightly to abutments or railings.
- The fences are most successful if they do not deflect turtle movements by more than 60 degrees.
- Methods to allow animals off the roadway also need to be incorporated into wildlife exclusion methods.
- For seasonal or temporary situations, standard erosion control is adequate.

Curb and Gutter

- Areas near lakes, rivers, streams and wetlands (typical turtle habitat) should have rural shoulders and vegetated swale road ditches, not typical curb and gutter stormwater systems. If a curb and gutter stormwater system must be installed, curbs that turtles can traverse should be used (Type D or Type S curb).
- Traditional curb and gutter can inadvertently trap turtles within the road and also directs small mammals and reptiles into the storm sewer, often with fatal results.
- Where traditional curb and gutter is to be installed, a design without the side box inlet gives the animals a better chance of moving past the storm sewer as they search for an exit route.
- If a type D or S type curb is not desired, install a few feet of it on either side of the storm water drain to allow animals to exit prior to the storm sewer drop structure.
- Stormwater ponds that discharge to natural areas should not have outlets that block turtle movement.

For More Information

This information is from the *Best Practices for Meeting DNR General Public Water Permit* by Peter Leete, Transportation Hydrologist with the DNR Division of Ecological and Water Resources. The complete manual with additional information can be found at: http://www.dnr.state.mn.us/waters/watermgmt_section/pwpermits/gp_2004_0001_manual.html

And from The *DNR Environmental Review Fact Sheet* Series: Blanding's Turtle: http://files.dnr.state.mn.us/natural_resources/animals/reptiles_amphibians/turtles/blandings_turtle/factsheet.pdf

For additional information on Minnesota's turtles, see the poster *Protect Our Turtles.*

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