Open-Topped Pipes: A Hazard to Wildlife

Natural Resources Conservation Service - Technical Note

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The Danger

Only in the last few years has a lesser-known threat to birds and wildlife been more widely acknowledged. Open-topped pipes from 1 to 10 inches in diameter kill animals that enter and become entrapped (Brattstrom 1995). Some species entering pipes are cavity nesters/roosters drawn by the tight space, others are exploring potential food or cover sources, and some may just have fallen in by accident. Most animals would be able to exit tight quarters in natural situations, but the depth and smooth sides of PVC, metal, and other commonly used materials often makes these open-topped pipes inescapable.

Figure 1. An open-topped PVC irrigation pipe. (NRCS)

In one abandoned six-inch irrigation standpipe in California, seven vertical feet of dead animals were found comprising 231 individuals (Figure 2). Nevada Department of Wildlife recently examined 854 four- inch PVC mining claim posts in Nevada, which contained the remains of 879 birds, 113 reptiles, and 20 mammals. American Bird Conservancy estimates that that these posts may have killed over one million birds in Nevada alone, and potentially tens of millions across the western US (ABC 2012).

Documented Species Killed (Audubon 2011, ABC 2012)

Birds

- American Kestrel
- Western Screech-Owl
- Burrowing Owl
- Northern Saw-whet Owl
- Common Nighthawk
- Common Poorwill
- Ladder-backed Woodpecker
- Northern Flicker
- Western Wood-Pewee
- Say's Phoebe
- Ash-throated Flycatcher
- Loggerhead Shrike
- Northern Shrike
- Horned Lark
- Western Scrub-Jay
- Pinyon Jay
- Clark's Nutcracker
- Violet-green Swallow
- Tree Swallow
- Mountain Chickadee
- Juniper Titmouse
- Bushtit
- Red-breasted Nuthatch
- Pygmy Nuthatch
- Rock Wren
- Canyon Wren
- House Wren
- Cactus Wren
- Ruby-crowned Kinglet
- Blue-gray Gnatcatcher
- Western Bluebird
- Mountain Bluebird
- Townsend's Solitaire
- Northern Mockingbird
- Sage Thrasher
- European Starling
- Black-throated Gray Warbler
- Common Yellowthroat
- Green-tailed Towhee
- Brewer's Sparrow
- Black-throated Sparrow
- Brown-headed Cowbird
- Pine Siskin
- House Finch

Reptiles

- Side-blotched Lizard
- Western Whiptail Lizard
- Western Fence Lizard
- Desert Spiny Lizard

Mammals

- Mice (*Peromyscus*)
- Desert Cottontail
- Chipmunk (*Tamias*)

Open-topped pipes are present in a wide array of situations on cropland, rangeland, wildlands, and on structures. The most common use of these pipes are as fence posts, irrigation systems, sign posts, survey markers, sapling tree protection tubes, monitoring wells, and vents on buildings.

Figure 2. This six-inch pipe contained seven-feet of compacted bird carcasses. (Audubon California Kern River Preserve)

Applicable NRCS Practices & Situations

Modifying national or state practice standards would be an ideal solution, however, the potential number of practice standards to modify is large and would be time consuming. This tech note serves as the first attempt to raise awareness of the hazards of open-topped pipes and to reduce their use across the landscape.

Commonly used NRCS practices where open-topped pipes may occur: Fence (382), Hedgerow (422), Irrigation Pipeline (430), Irrigation System, Micro (441), Irrigation System, Sprinkler (442), Irrigation System, Surface and Subsurface (443), Livestock Pipeline (516), Restoration and Management of Rare and Declining Habitats (643), Riparian Forest Buffer (391), Roofs and Covers (367), Structure for Water Control (587), Structures for Wildlife (649), Tree and Shrub Establishment (612), Underground Outlet (620), Waste Transfer (634), Waste Treatment (629), Windbreak/Shelterbelt Establishment (380), Windbreak/Shelterbelt Renovation (650). There may be many other practices where open-topped pipes are used during surveys or practice implementation.

All NRCS planners should be aware of this issue and should select the proper practices, write appropriate specifications with conservation measures, and ensure proper installation and maintenance of safe vertical pipes. NRCS planners should communicate with the landowner, contractor, other NRCS personnel, and partners regarding this issue to ensure they understand the potential problems with open-topped pipes and are comfortable with the solutions. If open-topped pipes are left on the landscape, a project may not meet planning criteria for the “Inadequate Habitat for Fish and Wildlife” Resource Concern depending on your state’s habitat evaluation and may not comply with the Migratory Bird Treaty Act.

Existing or proposed open-topped pipes should be identified as a wildlife hazard, assessed on a CPA-52 or in a NEPA document, and may be documented as a limiting factor on a specification sheet for a wildlife habitat management practice (such as 643, 644, or 645).

In addition to NRCS practices, open-topped pipes may be encountered in NRCS engineering surveys, Emergency Watershed Protection (EWP) Program proposed plans, easement program proposed plans, or already exist on the landscape. Note that the Bureau of Land Management (BLM) has requested that open-topped pipes are capped on BLM land.

Solutions & Opportunities

Do not plan, install, or utilize open-topped pipes on NRCS funded projects. Communication and coordination between NRCS biologists, range conservationists, soil conservations, and engineers is critical. Ensure that practice specifications prohibit open-topped pipes and require that covers and caps be maintained. Confirm that the landowners are aware of their maintenance responsibility.

Figure 3. A covered fence post.

Pipe covers are available commercially, or can be fabricated by the landowner. It is recommended that covers be permanently affixed where possible to reduce maintenance. If a cover must be occasionally removed, it is recommended that cover be tethered or hinged to the pipe. In situations where covering is not feasible, filling the pipe or creating an exit at the bottom may solve the problem.

Obstruction Removal (500) is one potential practice that can be used to remove unused open-topped pipes. Retrofitting open-topped pipes with a cover may be done with Restoration and Management of Declining Habitats (643), Structures for Wildlife (649), Upland Wildlife Habitat Management (645), or other NRCS practices. Consult with your NRCS State Biologist and the practice lead for your state, and check the current payment scenarios to determine the correct practice for a specific removal or retrofitting situation.

Figure 4. Installing a kestrel box on farmland. (NRCS)

Cavity nesting animals dying in pipes may indicate a lack of suitable cavity nesting habitat or perches in an area. Conservation planners should assess the need and consider adding cavity nest boxes, artificial perches, and creating or installing snags to increase the cavities and perches in the area. NRCS planners should discuss this opportunity to attract wildlife for pest control on cropland with the landowner during the planning process.

More information is available at:
Attracting Wildlife for Pest Control on Farmland

References

American Bird Conservancy (ABC) 2012. Bureau of Land Management Determines Bird Deaths From PVC Mining Claim Marker Pipes Widespread. http://www.abcbirds.org/newsandreports/releases/120425.html

Audubon California Kern River Preserve 2011. http://kern.audubon.org/death_pipes.htm

Brattstrom, B.H. 1995. Wildlife Mortalities in PVC Claim Posts. Wildlife Society Bulletin, Vol. 23, No. 4, pp. 765-766.

Bureau of Land Management (BLM) 2013. Request to Mining Claimants on Federal Lands: Help Eliminate Hazards to Birds and Other Wildlife. http://www.blm.gov/wo/st/en/prog/more/non-energy_minerals/request_to_mining.html

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