Ecological Cost of Military Pollution

The Badger Army Ammunition Plant was constructed in 1942 to produce single- and double-base propellant for cannon, rocket, and small arms ammunition. Over the course of the plant's activity, there has been extensive contamination of the soil, surface water, and groundwater. This contamination threatens wildlife in and around the Badger area. The wildlife at risk includes several endangered species as well as many species of mammals, birds, reptiles, and insects. For more than 18 years, Citizens for Safe Water around Badger has dedicated time and resources to encouraging clean up of the Badger site and restoration of its habitat.

Perhaps the most colorful raptor in the world, the American Kestrel is the most common falcon in North America and is a species that is especially vulnerable to environmental contamination found at Badger Army Ammunition Plant.

Why is the Ecological Health of Badger important?

- Wildlife at risk can be indicators for human risks
- The ecosystem is a resource for humans as well as wildlife
- Compliance with regulatory requirements

Representative species selected by the Army:

Small Mammals – meadow vole, masked shrew, and field mouse
Carnivorous Mammals – mink and coyote
Carnivorous Birds – kestrel (representative of bald eagle)
Insect Eating Birds – eastern bluebird, tree swallow, house wren, and song sparrow

Risks to carnivorous mammals such as coyote and mink were evaluated as part of the Army's ecological risk assessment. The study found that metals, in particular mercury, are accumulating in small mammals. This is of particular concern for mercury since this metal bioaccumulates through the food chain.

Contaminants of Concern:

The Army has identified cadmium, chromium, copper, lead, mercury, nickel, selenium, tin, zinc, and the explosive 2,4-Dinitrotoluene(DNT) as contaminants of concern. A recent ecological study found that mercury is accumulating in small mammals at Badger. The effects of mercury on wildlife include stillbirths, abortions, behavioral deficits, impaired fertility, and other reproductive problems. The Army also found DNT in earthworms which in turn are consumed by birds. DNT is a carcinogen and can cause reproductive problems in these birds and other wildlife.

Shortcomings of the Army's 2008 Ecological Risk Assessment:

- Did not account for animals drinking contaminated water
- Disregarded that water sources are used by Badger wildlife
- Did not address risks to osprey, vultures, deer, and other indigenous species
- No reptiles or amphibians were evaluated
- No analysis of aluminum
- Future uses such as livestock grazing are not considered
- Criteria for reference sites did not meet regulatory requirements

Reference sites are used to compare data from a contaminated site to a non-contaminated site. Reference sites are important for comparison and should be (1) free from influence of the contaminated site, and (2) representative of natural conditions. The reference sites used in the Army's study do not represent these conditions. They are contaminated and do not match the natural conditions in the areas of concern. Instead, the study areas (the settling ponds and spoils disposal area) are compared to other contaminated sites at Badger.

For all these reasons, the safe and complete cleanup of environmental toxins at Badger remains fundamental to a successful and healthy future for wildlife and our environment.

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Citizens for Safe Water Around Badger (CSWAB) is working to mobilize and empower rural communities near Wisconsin's Badger Army Ammunition Plant in support of a sustainable future that will protect and restore the integrity of soil, water, air, and biological diversity. CSWAB, E12629 Weigand's Bay South, Merrimac, WI 53561 (608) 643-3124 http://www.cswab.org