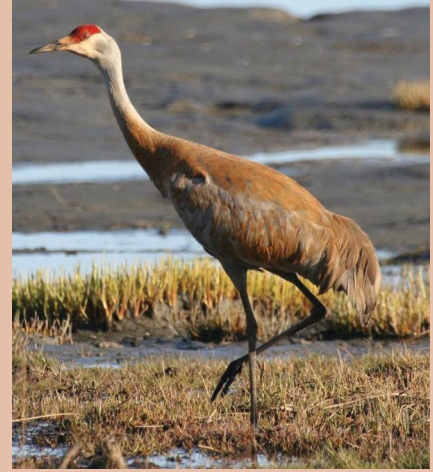


Sandhill cranes

Wildlife management series for Midwestern farmers



Sandhill crane.

Caleb Slemmons
National Ecological Observatory Network, Bugwood.org

Common and Latin name: Sandhill crane (*Grus canadensis*)

Commonly impacted crops: Sandhill cranes damage sprouting corn and small grains, and occasionally tuber crops like potatoes.

Relevant regulatory agency: U.S. Fish and Wildlife Service, State Department of Natural Resources

Species overview

Physical description of animal: Sandhill cranes are very large, tall birds with a long neck, long legs and very broad wings. Their bulky body tapers into a slender neck; their short tail is covered by drooping feathers that form a “bustle.” They are primarily gray with some rusty brown tones on the body, a pale cheek and a striking red crown. Juveniles are also gray and rusty brown, but without the pale cheek or red crown.

With the reintroduction of whooping cranes into the upper Midwest beginning in 2001, there are occasional sightings of whooping cranes in Michigan. Whooping cranes can be found in areas similar to sandhill cranes and it is very important not to confuse this endangered species with sandhill cranes. Whooping cranes are white with black-tipped wings. See www.bringbackthecranes.org for more information.

Habitat and range description: Migratory sandhill cranes breed in arctic to temperate environments, from eastern Siberia through most of Alaska, Canada and the northern third of the United States. Breeding pairs and larger family groups can be found in the Midwest from early spring through fall. Sandhill cranes nest in open wetlands or near shallow lakes and feed during the day in grasslands or agricultural fields.

Behavior including food habits: The omnivorous sandhill crane feeds on land or in shallow marshes where plants grow out of the water, gleaning from the surface and probing with its bill. Its diet varies by what is available by season, and is heavy in seeds and cultivated grains such as corn and wheat, but may also include berries, tubers, invertebrates and small vertebrates, especially reptiles and amphibians.

Identification of damage: Feeding on planted seeds is the most common and economically significant form of sandhill crane damage. Cranes eat sprouted seeds, especially corn, but not seedling plants. Crane damage is obvious, as a seedling is completely removed from the soil and the seed detached, leaving the uprooted plants to wilt. Cranes often graze straight down a row, causing localized damage to a field over time. Planted seeds are vulnerable to foraging cranes only until the endosperm is fully metabolized by the plant, which is usually by the 4-5 leaf stage in corn.

In spring, damage can be substantial, as cranes often gather in large numbers in germinating cornfields. These large congregations of cranes are made up of non-breeding birds that move about the landscape



Chris DiFonzo, Michigan State University

Typical sandhill crane damage to sprouting corn. Note the round holes in the soil where cranes have pulled the sprout to eat the seed.



Patchy corn left after sandhill cranes damaged a field.

opportunisticly. These birds do not have territories and can range over large areas to feed. Breeding birds segregate in pairs to defend a territory against other cranes and therefore, the damage they do is usually minor by comparison.

Legal status: Sandhill cranes are protected under the federal Migratory Bird Treaty Act. This law strictly prohibits harassment, capture, killing, or possession of sandhill cranes without proper permits. No federal permit is required to use non-lethal management methods to reduce damage by sandhill cranes. States also protect cranes through various regulations.

Management

No single management method to prevent crane damage works all the time or in all settings. Generally, multiple management methods should be combined so that one method enhances the effects of another.

Frightening: Propane cannons and pyrotechnics can be used to disperse cranes from crop fields. Use as soon as cranes appear to prevent them from developing habitual feeding in a particular field. These are effective when the individual cranes that encounter them are naïve to the devices. Any deterrence from frightening methods is soon lost, but can be increased when reinforced with lethal control. Remember, lethal control requires federal and potentially state level permission.

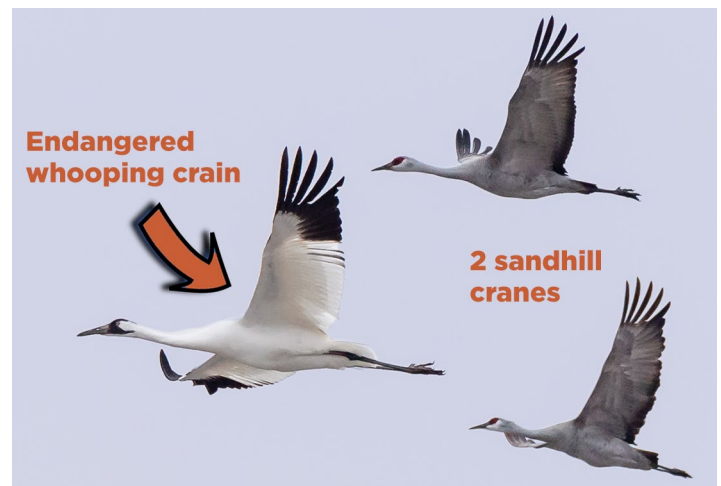
Alternative methods: Small fields near wetlands or isolated from human activity are often more attractive to sandhill cranes. If particular fields regularly receive severe crane damage, it may be advisable to plant crops that are less vulnerable to crane damage such as soybeans, or to treat corn seed with a repellent (Anthraquinone).

Repellents: Anthraquinone (AQ) is the only product that can be legally used in the U.S. to repel cranes from planted agricultural seeds. Registered as Avipel, AQ can be applied as a powder or liquid to corn or sweetcorn. AQ causes distress in the gut of birds that ingest treated seed, which leads to an aversion to the food. Cranes may continue to feed on insects, etc. in AQ-treated fields, but they will not feed on the treated corn. Research has proven proper application of AQ using a full labeled rate and good coverage on the seed is critical for success. Follow all label requirements when applying Avipel. Typically, the farmer's cost of applying AQ is \$6-10 per acre.

Shooting: Shooting can reinforce and prolong the effectiveness of harassment methods such as pyrotechnics. The U.S. Fish and Wildlife Service (USFWS) can issue depredation permits for a fee for shooting sandhill cranes that cause damage. Shooting is not recommended to control damage caused by breeding pairs, because removing those few territorial birds could open a field to potential damage from large non-breeding flocks. All laws, regulations and ordinances pertaining to using firearms and ammunition apply and vary by jurisdiction. Procedures for applying for depredation permits may differ by state. Contact your local USFWS office for details.

The USFWS may require that non-lethal techniques be tried before issuing a depredation permit. The depredation permit will contain limitations on where, when and how many cranes can be killed. The working concept is that shooting a limited number of cranes is allowed to reinforce harassment efforts and disperse large numbers of cranes during the period when crops are vulnerable.

States often accept the federal depredation permit as valid for complying with state regulations. Producers should confirm this with the relevant state wildlife agency.



An endangered whooping crane in flight with two sandhill cranes. Whooping cranes are white with black-tipped wings.



A pair of sandhill cranes.

Hunting: Hunting sandhill cranes is not currently legal in any Midwestern states. Some southern states do allow crane hunting. However, hunting sandhill cranes will not directly reduce corn damage because it occurs in the spring and crane hunting usually takes place in the fall. However, fall hunting could help to reduce damage to fall sown crops like winter wheat or maturing potatoes.

Because sandhill cranes do not breed until 4-5 years of age and only produce one or two young per year, their population can be vulnerable to hunting. As a result, bag limits for crane hunting are often quite low (1-3 birds per hunter), which would also limit the effectiveness of hunting as a damage control tool.

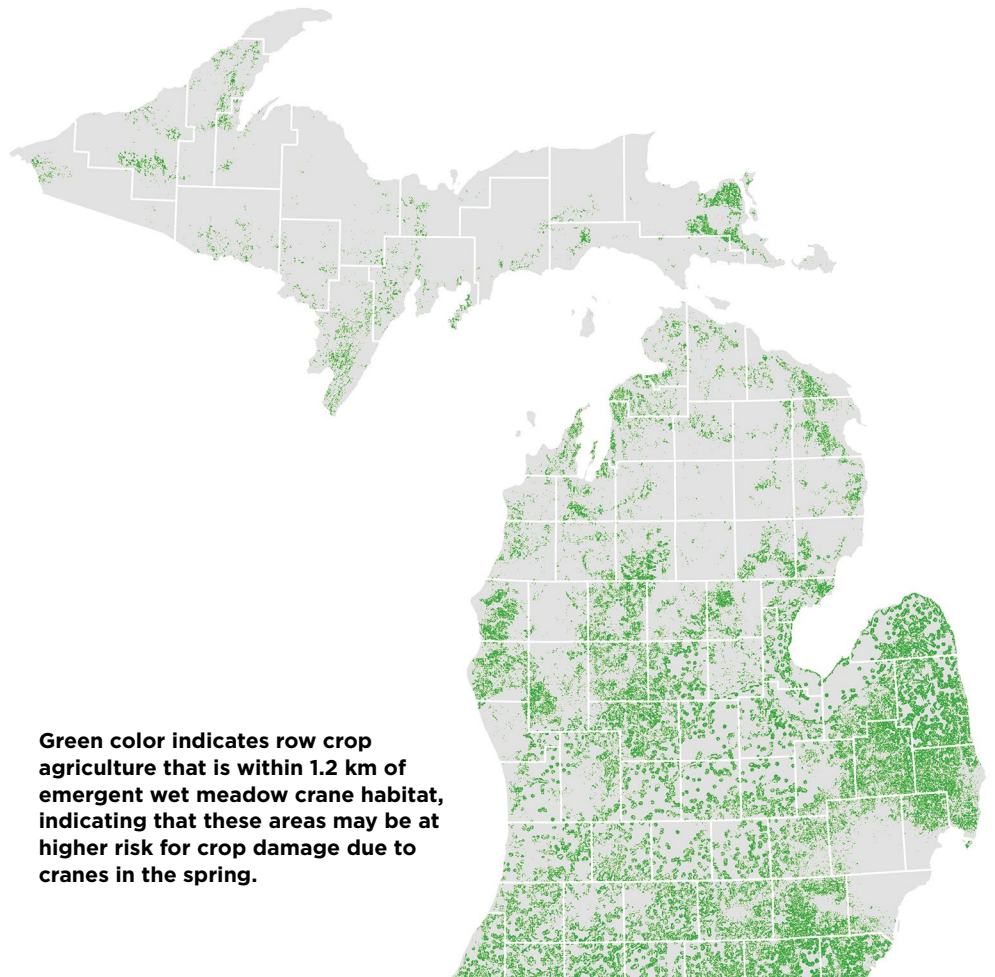
Considerations

The sandhill crane population in the Midwest is increasing and it can be expected that conflicts with agriculture will continue, if not increase. Farmers that suffer crane damage would do well to recognize there are many in our society who view cranes as a very charismatic species. For many this surge in crane numbers is welcomed

and celebrated. Cranes also have spiritual value for some Native American tribes. However, cranes are valued by hunters as a game species and while there are not yet open seasons on cranes in the Midwest, this could change.

Consequently, there are many people in our society who may not automatically understand that cranes can inflict significant economic damage. After exhausting non-lethal means, farmers who receive a lethal control permit ought to do so discreetly and according to all the requirements of their depredation permit.

Harassment coupled with lethal shooting can be effective, but it will likely require a significant time commitment to regularly monitor crane activity in fields. Cranes are very mobile and can be expected to be persistent in feeding, by which a large flock can do a lot of damage in a relatively short period. This commitment is compounded if a farmer has multiple fields in multiple locations. By contrast, AQ would be more costly but, if properly applied, will be effective with very little additional monitoring or action required. These tradeoffs need to be evaluated by the producer.



Green color indicates row crop agriculture that is within 1.2 km of emergent wet meadow crane habitat, indicating that these areas may be at higher risk for crop damage due to cranes in the spring.

Source: Anne Lacy, International Crane Foundation

Directory of Midwest Wildlife Management Agencies

Information from February 2019.

Illinois

Department of Natural Resources: (618) 435-8138
www.dnr.illinois.gov
USDA APHIS Wildlife Services: (217) 241-6700

Indiana

Department of Natural Resources: (317) 232-4102
www.in.gov/dnr
USDA APHIS Wildlife Services: (765) 494-6229

Iowa

Department of Natural Resources: (515) 725-8200
www.iowadnr.gov
USDA APHIS Wildlife Services: (573) 449-3033

Kansas

Department of Wildlife, Parks and Tourism:
(620) 672-5911 www.ksoutdoors.com
USDA APHIS Wildlife Services: (785) 537-6855

Michigan

Department of Natural Resources: (517) 284-6057
www.michigan.gov/dnr
USDA APHIS Wildlife Services: (517) 336-1928

Minnesota

Department of Natural Resources: (651) 296-6157
www.dnr.state.mn.us
USDA APHIS Wildlife Services: (651) 224-6027

Missouri

Department of Natural Resources: (800) 361-4827
www.dnr.mo.gov
USDA APHIS Wildlife Services: (573) 449-3033

Nebraska

Department of Natural Resources: (402) 471-2363
www.dnr.nebraska.gov
USDA APHIS Wildlife Services: (402) 434-2340

North Dakota

Game and Fish Department: (701) 328-6300
www.gf.nd.gov
USDA APHIS Wildlife Services: (701) 355-3300

Ohio

Department of Natural Resources: (800) 945-3543
www.ohiodnr.gov
USDA APHIS Wildlife Services: (614) 993-3444

South Dakota

Game Fish and Parks: (605) 223-7660 www.gfp.sd.gov
USDA APHIS Wildlife Services: (701) 355-3300

Wisconsin

Department of Natural Resources: (888) 936-7463
www.dnr.wi.gov
USDA APHIS Wildlife Services: (608) 837-2727

Acknowledgments

Barzen, J. and Ballinger, K. Sandhill and Whooping Cranes. Wildlife Damage Management Technical Series. USDA, APHIS, WS National Wildlife Research Center. Ft. Collins, Colorado. 2017. 16 p.

Cornell Lab of Ornithology. <https://www.allaboutbirds.org/>

Wildlife: Ecology and Management. <http://wildlifedamage.uwex.edu/>

Additional resources

Visit our Wildlife Management website for additional fact sheets on managing other wildlife and for more resources: bit.ly/wildlife-mge

Arkion Life Sciences' Avipel information: <http://www.arkionls.com/av/product-info.html>

U.S. Fish and Wildlife Service <https://www.fws.gov/offices/>

Your state's Department of Natural Resources or similar agency.



United States
Department of
Agriculture

National Institute
of Food and
Agriculture

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