

Florida Sandhill Crane

Antigone canadensis pratensis



Photograph by FWC.

Species Overview

Status: Listed as state Threatened on Florida's Endangered and Threatened Species List.

Current Protections

- 68A-27.003(a), F.A.C., No person shall take, possess, or sell any of the endangered or threatened species included in this subsection, or parts thereof or their nests or eggs except as allowed by specific federal or state permit or authorization.
- 68A-27.001(4), F.A.C., Take – to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in such conduct. The term “harm” in the definition of take means an act which actually kills or injures fish or wildlife. Such act may include significant habitat modification or degradation where it actually kills or injures wildlife by significantly impairing essential behavioral patterns, including breeding, feeding or sheltering. The term “harass” in the definition of take means an intentional or negligent act or omission which creates the likelihood of injury to wildlife by annoying it to such an extent as to significantly disrupt normal behavioral patterns which include, but are not limited to, breeding, feeding or sheltering.
- Florida sandhill cranes, active nests, eggs, and young also are protected under the Federal Migratory Bird Treaty Act, state Rule 68A-16.001, F.A.C., and state Rule 68A-4.001, F.A.C.
- Intentional feeding of sandhill cranes is prohibited under Rule 68A-4.001(5) F.A.C.

Biological Background

This section describes the biological background for this species and provides context for the following sections. It focuses on the habitats that support essential behaviors for the Florida sandhill crane, threats faced by the species, and what constitutes significant disruption of essential behavioral patterns. Florida sandhill cranes (*Antigone canadensis pratensis*) occur from southern Georgia, primarily in the Okefenokee Swamp, to the Everglades (Stys 1997). However, most of the population is in peninsular Florida from Alachua County in the north to the northern edge of the Everglades in the south. The migratory greater sandhill crane (*A. c. tabida*) winters in Florida, arriving in October and November and leaving for breeding grounds in northern U.S. and Canada from late January to early March. Although the two sandhill crane subspecies occurring in Florida are difficult to distinguish, those observed in the peninsula from April to September can be assumed to be the resident Florida subspecies. Florida sandhill cranes typically breed from February through April, but the breeding season can extend as early as December and as late as August (Bent 1926, Walkinshaw 1973). The Florida subspecies and *A. c. tabida* are not known to interbreed.

Habitat features that support essential behavioral patterns

Florida sandhill cranes forage in a variety of open habitats, including shallow (0-32 inches deep) herbaceous wetlands, improved pastures, prairies, open pine forests, croplands, golf courses, airports, and sod farms (Stys 1997). Cranes in north Florida spent 86% of their time in 4 habitat types: pasture, freshwater marsh, pasture-marsh transition, and pasture-forest transition (Nesbitt and Williams 1990). Preferred sandhill crane habitat contains short vegetation (e.g., vegetation less than 20 inches high in uplands), and sandhill cranes generally avoid areas with taller vegetation or dense forest canopies (Stys 1997).



Florida sandhill cranes and flightless young. FWC Photograph.

Although Florida sandhill cranes forage in a variety of open habitats, shallow, freshwater marshes are critical for both nesting and roosting (Wood and Nesbitt 2001). Average water depth at the nest ranges from 5 to 13 inches and averages 4 to 12 inches at roosting sites (Walkinshaw 1973, 1976; Bennett 1992). Nesting and roosting locations vary from year to year due to fluctuation in water levels in wetlands across the landscape. Shallow wetlands are particularly important in supporting essential behaviors for this species.

Additionally, uplands directly adjacent to nesting marshes are important for young sandhill cranes for the first several months until they are capable of flying. Young sandhill cranes remain flightless until approximately 70 days after hatching (Nesbitt 1996). Herbaceous wetlands, marsh-pasture transition zones, and adjacent pasture are the most common foraging habitat for young birds during the pre-fledging period (McMillen et al. 1992).

Threats

According to the [Species Action Plan](#) (SAP), habitat loss and degradation are the primary threats for sandhill cranes. Much of the remaining sandhill crane habitat is on private lands, underscoring the need to work with private landowners to reduce habitat loss and habitat degradation at nesting sites. Overgrown habitat makes sandhill cranes more vulnerable to predators, and habitat fragmentation forces sandhill cranes to travel farther between wetland and upland sites, which can lead to higher mortality. Given the importance of wetlands for roosting and nesting, changes in the timing or quantity of water can have significant consequences for sandhill cranes (Nesbitt 1996). For example, low water levels can make nests and young more vulnerable to predators and can deter breeding altogether (Nesbitt 1996). Rapid rises in water levels



Florida Sandhill crane on a nest, FWC Photograph.

from storm events can flood nests or lead to nest failure. Runoff from impermeable surfaces potentially worsens the effects of storm events (Dwyer and Tanner 1992).

Disturbances in and around wetlands with active nests can significantly impact nesting success. Humans approaching a nest location within 250 feet of a nest site can cause a crane to flush (Dwyer and Tanner 1992). Once flushed, parents can remain off of the nest for 15 minutes to over 4 hours, and some nests are abandoned altogether (Dwyer and Tanner 1992; FWC, unpublished data). Disturbances within 400 feet can interrupt nesting activity and even cause abandonment of the area, even if

the birds do not flush (Stys 1997).

Other threats to sandhill cranes include collisions with vehicles, power lines, and fences (Folk et al. 2001). Adults with pre-fledged young often walk across roadways rather than flying, leading to increased mortality from vehicle strikes. Collisions with power lines can lead to broken necks, wings, and legs (Windingstad 1988). Entanglement with fences can occur when cranes are landing or if cranes cannot walk under or pass through the fence (Nesbitt 1996).

Potential to Significantly Impair Essential Behavioral Patterns

Sandhill cranes rely on shallow wetlands for breeding, feeding, and sheltering. Therefore actions that result in loss of suitable natural wetlands where cranes are foraging, roosting, or nesting can cause significant impairment of essential behavioral patterns. Similarly, actions that degrade occupied suitable natural wetlands through changes in timing, quantity, or quality of water can result in significant impairment of essential behavioral patterns. Flushing cranes from their nests can result in loss or abandonment of active nests, regardless of whether nests occur in natural or man-made wetlands, and can significantly impair breeding. Young, flightless sandhill cranes have been observed foraging 1500 feet from the nest site within weeks of hatching (Layne 1981). Actions that impact upland foraging of flightless young (i.e., young within first 70 days after hatching; Nesbitt 1996) could result in the significant impairment and cause take.

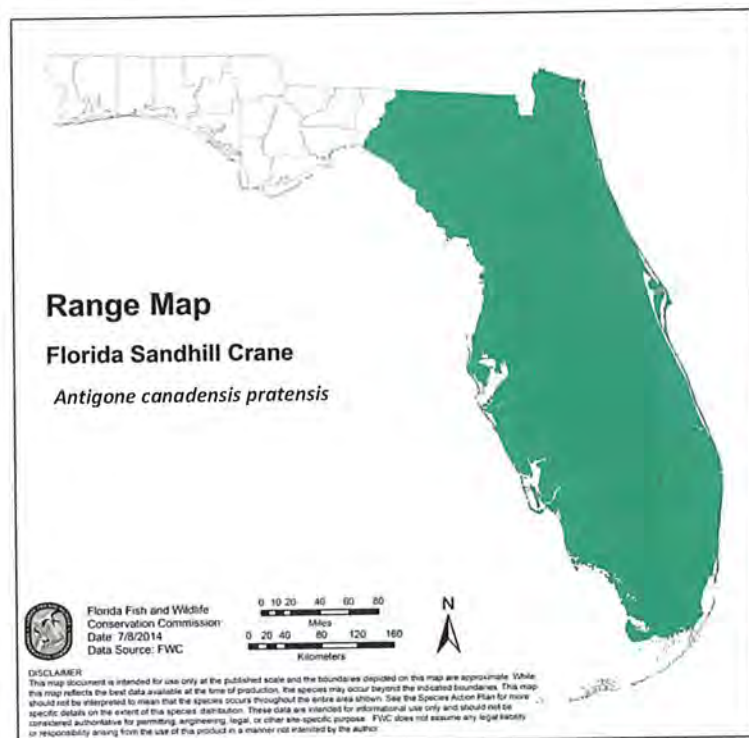
Distribution and Survey Methodology

The map below represents the principle geographic range of the Florida sandhill crane, including intervening areas of unoccupied habitat. This map is for informational purposes only and is not for regulatory purposes.

Counties: Alachua, Baker, Bradford, Brevard, Broward, Citrus, Charlotte, Clay, Collier, Colombia, DeSoto, Dixie, Duval, Flagler, Gilchrist, Glades, Hamilton, Hardee, Hernando, Hendry, Highlands, Hillsborough, Indian River, Lafayette, Lake, Lee, Levy, Madison, Manatee, Marion, Martin, Miami-Dade, Monroe, Nassau, Okeechobee, Orange, Osceola, Palm Beach, Pasco, Pinellas, Polk, Putnam, Sarasota, Seminole, St. Johns, St. Lucie, Sumter, Suwannee, Taylor, Union, Volusia..

Recommended Survey Methodology

Surveys can be used to determine if Florida Sandhill Cranes are nesting in an area or to confirm that the species are present. Surveys are not required but if conducted in accordance with the methodology described below and the species are not detected, no FWC review or coordination is needed.



Surveys of breeding habitat

Surveys during the breeding season (December to August) are useful for identifying active nests. Nesting primarily occurs from February to April. Surveys are recommended 1) during project planning and 2) immediately prior to project activities:

- 1) **Project planning.** Surveys are recommended during the early stages of a project (e.g., as part of the Environmental Resource Permit [ERP] process) to identify areas used for nesting in order to aid in development of appropriate avoidance, minimization, and mitigation.
 - Three surveys should be spaced at least 3 weeks apart during the breeding season.
 - The objective of the surveys is to detect nesting activity; thus, if observers detect nesting sandhill cranes in a wetland on the first survey date, there is no need to conduct the second or third survey in that wetland.
 - Spacing the 3 surveys to occur in early March, early April, and early May is ideal.
 - If active nests or flightless young are found, the applicant should coordinate with the FWC during the ERP process (see page 8) to discuss avoidance, minimization, and mitigation.
 - If no active nests or flightless young cranes are found, no further coordination is needed with the FWC regarding sandhill cranes during the ERP process.
- 2) **Pre-activity (pre-clearing or pre-construction) surveys** are recommended immediately prior to project activities during the breeding season to identify active nests or flightless young in order to avoid, minimize, or mitigate for take of those nests or young.
 - Nesting locations vary from year to year due to fluctuation in water levels in wetlands across the landscape. Therefore, project planning surveys are insufficient to assure that no take of active nests or flightless young will occur.
 - Pre-activity surveys should occur within thirty days of initiation of activities and should include either 1 aerial survey or 2 ground surveys (see methods below).
 - If active nests or flightless young are found and avoidance of take is not feasible, the applicant should contact the FWC to discuss potential minimization and mitigation for take of those nests or young.
 - If active nests or flightless young are not found, no further action is required.
- Aerial transects covering 100% of the suitable nesting habitat are the most effective method for locating nesting sandhill cranes (Stys 1997).
 - Nests typically are easier to detect at higher altitudes (e.g., 500-700 feet).
 - Aerial transects at an altitude above 250 feet are not expected to result in flushing from nests. Note that this minimum altitude is higher than that suggested in the 1997 [FWC Nongame Technical Report No. 15](#).
 - Sandhill cranes may react differently to different types of aircraft, and altitude may need to be adjusted to prevent disturbance.



Florida Sandhill crane and mate on a nest. FWC Photograph.

Surveys from the ground are adequate, provided precautions are taken to avoid flushing nesting cranes. On small sites, one or a few observation points may be sufficient for complete coverage of the area via ground surveys. On larger areas, transects should be spaced to provide approximately 100% coverage of suitable

habitat, taking into account the limits on visibility imposed by the vegetation and terrain.

- Sandhill crane nests can be difficult to detect from the ground, and observers should take care to avoid flushing nesting cranes.
- Patiently scan suitable nesting habitat from as far away as practical. Transects through the marsh can result in disturbance and are not recommended. Slowly scanning from the periphery of the marsh from a high vantage point (e.g., standing on a truck) can increase visibility and decrease the probability of disturbance.
- A lone adult sandhill crane observed foraging during the breeding season is a good indicator that nesting may be occurring nearby. Members of a breeding pair exchange nest duties several times per day, and observing a lone bird from a distance may help locate the mate on the nest, if necessary.
- Ground surveys should be conducted during the cool part of the day (dawn to 10 AM and 4 PM to dusk) to avoid exposure of eggs to heat in the event that adults accidentally flush from nests. Sandhill crane breeding pairs engage in “unison calling” early in the morning or when switching incubation duties, which can help identify marshes used for nesting.
- Because of the state and federal regulations (Federal Electric Reliability Council (FERC) Electric Reliability Standard FAC-003-3, National Electrical Safety Code (NEC) section 218, and Florida Public Service Commission (FPSC) mandates) associated with routine vegetation maintenance in powerline right of ways, sandhill crane nests do not have to be located prior to routine vegetation maintenance activities within existing power line right of ways, nor does the existing power line right of way need to be surveyed for the presence of nests or the animals themselves prior to maintenance. Removal of active nests encountered during vegetation maintenance activities is prohibited without appropriate State and Federal authorizations.

Recommended Conservation Practices

Recommendations are general measures that could benefit the species but are not required. No FWC permit is required to conduct these activities.

- Maintain or restore hydrology in areas suitable for sandhill cranes. For example, incorporate culverts

into road design or road improvements that will allow for maintenance and/or restoration of natural hydrology.

- Avoid placement of impermeable surfaces, such as roads or parking lots, adjacent to wetlands suitable for nesting cranes, as this reduces the chance of nest failure due to flooding.
- Maintain quality sandhill crane breeding habitat when possible by ensuring availability of areas with average water depths between 5 to 13 inches from January through April. Water depths in sandhill crane foraging habitat range from 0-32 inches (Stys 1997).
- Include a shallow end or shelf, vegetated with native herbaceous wetland species such as maidencane (*Panicum hemitomon*), pickerelweed (*Pontederia cordata*), and smartweeds (*Polygonum* spp.) when constructing new ponds, provided the ponds are not in areas potentially hazardous to sandhill cranes (e.g., not immediately adjacent to high-traffic roads or ponds used for stormwater treatment).
- Develop a prescribed fire regime that minimizes woody encroachment into wetlands and uplands.
- Take steps when possible to avoid disturbing active nests and flightless young (e.g., conduct activities outside of the breeding season or outside of a 400 foot buffer around active nests when feasible) when conducting land management activities beneficial to wildlife in accordance with Rule 68A-27.007(2)(c), F.A.C.
- Maintain open areas for foraging through cattle grazing, mowing, or other means.
- Add power line markers during power line installation to increase visibility to flying cranes as described in the SAP.
- Avoid or minimize fertilizer, herbicide, and pesticide runoff into wetlands.
- Have signs posted in areas frequented by cranes to alert motorists where vehicle-caused mortality of sandhill cranes is common.
- Discourage feeding of sandhill cranes by people. If sandhill cranes are attracted to human-provided food sources (e.g., bird feeders), remove the source of food until sandhill cranes stop visiting the site.
- Use fencing that is more permeable (i.e., barbed wire versus woven wire or chain link) and less dangerous to cranes when constructing fences in or around wetlands and associated uplands suitable for sandhill cranes.

Measures to Avoid Take

Avoidance Measures that Eliminate the Need for FWC Take Permitting

The following measures will eliminate the need for an FWC take permit.

- Avoid impacts to suitable natural wetlands used by sandhill cranes for breeding, feeding, or sheltering.
- Avoid activities within 400 feet of an active nest (Stys 1997).
- If flightless young are present in a wetland, avoid land use conversion in suitable upland habitat within 1500 feet of the nest site until after young are capable of sustained flight (i.e., young within first 70 days after hatching; Nesbitt 1996, Walkinshaw 1976, Layne 1981).

Examples of Activities Not Expected to Cause Take

This list is not an exhaustive list of exempt actions. Please contact FWC if you are concerned that you could potentially cause take.

- Take of inactive nests, as described in FWC's policy on Nest Removal for Inactive Single-Use Nests of State-designated Threatened Bird Species.

- [Approved aversive conditioning methods](#) (see page 11) as described in FWC's policy on Aversive Conditioning of State Listed Species.
- Aerial transect surveys in fixed wing aircraft or helicopters above 250 feet have been demonstrated not to result in flushing from nests. However, the reaction of sandhill cranes may vary depending on the type of aerial activity, and activities should cease or move to a higher altitude if flushing occurs.
- Linear utility and highway right-of-way vegetation maintenance activities outside of the breeding season.
- Cranes are not likely to be disturbed by routine use of roads, homes and other infrastructure, routine agricultural operations, or routine management or repair of linear utilities occurring greater than 400 feet of an active sandhill crane nests or outside the breeding season (December to August). Therefore, in most cases, existing activities of the same degree may continue with little risk of disturbing nesting sandhill cranes.

Florida Forestry Wildlife BMP's and Florida Agricultural Wildlife BMP's

- Agriculture, as defined in Section 570.02, F.S., conducted in accordance with Chapter 5I-8, F.A.C., and the wildlife best management practices (BMPs) adopted in Rule 5I-8.001 and 5M-18.001, F.A.C., by the Department of Agriculture and Consumer Service pursuant to Section 570.94, F.S., is authorized and does not require a permit authorizing incidental take despite any other provision of Rule 68A-27.007 or 68A-27.005, F.A.C.
- Participation in the Florida Forestry Wildlife BMP's and Florida Agricultural Wildlife BMP's program and implementation of these BMP's provides a presumption of compliance with regard to incidental take of Florida Sandhill cranes.
- Forestry and Agricultural BMP's state to avoid heavy equipment operation (except prescribed burning and related activities) within 400 feet of active, known, and visibly apparent Florida Sandhill Crane nests from February to May.

Other Authorizations for Take

- Activities within an airport property in accordance with Rule 68A-9.012, F.A.C.
- Participation in the Florida Forestry Wildlife BMP's and Florida Agricultural Wildlife BMP's program and implementation of these BMP's provides a presumption of compliance with regard to incidental take of the Florida Sandhill crane.
- As described in Rule 68A-27.007(2)(c), F.A.C., land management activities (e.g., exotic species removal) that benefit wildlife and are not inconsistent with FWC Management Plans are authorized and do not require a permit authorizing incidental take.
- In accordance with local, state, and federal regulations (including, but not limited to, Federal Electric Reliability Council (FERC) Electric Reliability Standard FAC-003-3, National Electrical Safety Code (NESC) section 218, and Florida Public Service Commission (FPSC) mandates), routine vegetation maintenance activities within existing power line right of ways that avoid heavy equipment operation within 400 feet of active, known and visibly apparent Florida sandhill crane nests do not require a permit authorizing incidental take.
- In cases where there is an immediate danger to the public's health and/or safety, including imminent or existing power outages that threaten public safety, or in direct response to an official declaration of a state of emergency by the Governor of Florida or a local governmental entity, power restoration activities and non-routine removal or trimming of vegetation within linear right of way in accordance with vegetation management plan that meets applicable federal and state standards does not

require an incidental take permit from the state.

Coordination with Other State and Federal Agencies

The FWC participates in other state and federal regulatory programs as a review agency. During review, FWC identifies and recommends measures to address fish and wildlife resources to be incorporated into other agencies' regulatory processes. FWC provides recommendations for addressing potential impacts to state listed species in permits issued by other agencies. If permits issued by other agencies adequately address all of the requirements for issuing a State-Threatened species take permit, the FWC will consider these regulatory processes to fulfill the requirements of Chapter 68A-27, F.A.C., with a minimal application process. This may be accomplished by issuing a concurrent take permit from the FWC, by a memorandum of understanding with the cooperating agency, or by a programmatic permit issued to another agency. These permits would be issued based on the understanding that implementation of project commitments will satisfy the requirements of Rule 68A-27.007, F.A.C.

Review of Land and Water Conversion Projects with State-Listed Species Conditions for Avoidance, Minimization and Mitigation of Take

- FWC staff, in coordination with other state agencies, provide comments to Federal agencies (e.g., the Army Corps of Engineers) on federal actions, such as projects initiated by a federal agency or permits being approved by a federal agency.
- FWC staff works with landowners, local jurisdictions, and state agencies such as the Department of Economic Opportunity on large-scale land use decisions, including long-term planning projects like sector plans, projects in Areas of Critical State Concern, and large-scale comprehensive plan amendments.
- FWC staff coordinates with state agencies such as the Department of Environmental Protection (DEP) and the five Water Management Districts on the environmental resource permitting (ERP) program, which regulates activities such as dredging and filling in wetlands, flood protection, stormwater management, site grading, building dams and reservoirs, waste facilities, power plant development, power and natural gas transmission projects, oil and natural gas drilling projects, port facility expansion projects, some navigational dredging projects, some docking facilities, and single-family developments such as for homes, boat ramps, and artificial reefs.
- During the ERP process, the FWC will provide guidance on avoidance, minimization, and mitigation measures for sandhill cranes.
- FWC staff will also work with DEP, WMDs, and the applicants during the pre-application and ERP process so that ERP mitigation will satisfy the applicants' responsibilities under Rule 68A-27 F.A.C. and associated rule enforcement policies (see [FWC Incidental take Permitting Process](#) below).
- Conservation benefit as defined under Rule 68A-27 F.A.C. may be accomplished through avoidance, minimization, and mitigation measures outlined in the ERP permit. The existing ERP requirements for wetland mitigation include replacement of functional loss from impacts to wetlands. The mitigation includes provisions for perpetual conservation and management. Mitigation achieved through the ERP process could be considered in FWC determinations when mitigation sites include shallow herbaceous wetlands with short vegetation and directly adjacent uplands maintained in an open condition suitable for foraging.

FWC Permitting: Incidental Take

According to Rule 68A-27.001, incidental take is take that is incidental to, and not the purpose of, carrying out an otherwise lawful activity. Activities that result in impacts to sandhill cranes can require an Incidental

Take Permit from the FWC (see [above](#) for actions that do not require a permit). Permits may be issued when there is a scientific or conservation benefit to the species and only upon showing by the applicant that the permitted activity will not have a negative impact on the survival potential of the species. Scientific benefit, conservation benefit, and negative impacts are evaluated by considering the factors listed in Rule 68A-27.007(2)(b), F.A.C. These conditions are usually accomplished through a combination of avoiding take when practicable, minimizing take that will occur, and mitigating for the permitted take. This section describes the minimization measures and mitigation options available as part of the Incidental Take Permit process for take of sandhill cranes. This list is not an exhaustive list of options.

Minimization Options

The suite of options below can help to reduce or minimize take of the species, and lessen the mitigation necessary to counterbalance take. All of the options below assume that adhering to avoidance measures that eliminate the need for FWC permitting described [above](#) is not possible, and that some level of take may occur.

Seasonal, Temporal, and Buffer Measures

- Reducing activities from December to August minimizes take of breeding sandhill cranes. Nesting typically occurs from February to April. However, nesting may occur as early as December and as late as August, and the nesting marsh is important for flightless young for approximately 70 days after hatching.
- Minimize to the extent practicable, activities within 400 feet of active nests to minimize disturbance to nests, eggs, and young (Stys 1997).
- If flightless young are present in a wetland, minimize land use conversion within 1500 feet of the nest site until after young are capable of sustained flight (Walkinshaw 1976, Layne 1981).

Design Modification

- Minimize amount of suitable foraging habitat converted to other land uses.
- Design projects to minimize changes in timing, quantity, or quality of water that could degrade suitable sandhill crane nesting habitat.
- Design projects to avoid or minimize fertilizer, herbicide, and pesticide runoff into wetlands.
- Design new ponds with shallow shelves vegetated with native herbaceous wetland species such as maidencane (*Panicum hemitomon*), pickerelweed (*Pontederia cordata*), and smartweeds (*Polygonum* sp.) to provide breeding, roosting, and foraging opportunities (e.g., not immediately adjacent to high-traffic roads or ponds used for stormwater treatment).
- Avoid placement of impermeable surfaces, such as roads and parking lots, adjacent to wetlands used by nesting cranes. This reduces the chance of nest failure due to flooding and minimizes impacts to foraging habitat needed by flightless young.
- Incorporate culverts into new road designs that will allow for maintenance and/or restoration of natural hydrology.
- Design roads away from suitable wetlands to minimize road mortality.

Method Modification

- Use silt fencing and other methods to minimize impacts to water quality (e.g., turbidity) in shallow wetlands.
- When activities must occur within habitat occupied by nesting cranes, refer to the [Seasonal or Temporal Restrictions](#) above to minimize take.
- During power line installation, add power line markers to increase visibility to flying cranes.

- Where vehicle-caused mortality is likely to occur, post signs in areas frequented by cranes to alert motorists.
- Use fencing that is more permeable (i.e., barbed wire versus woven wire or chain link) and less dangerous to cranes when constructing fences in or around nesting wetlands and associated uplands.
 - Barbed wire fencing with 3 strands is better than 4-strand or 5-strand fencing, especially if the bottom strand is 18 inches above the ground (Nesbitt 1996).
 - Woven or welded wire fence, also called hog or animal wire, is more of an impediment to the subspecies.
 - A framed “walk-through” (18 inches high x 24 inches wide) placed periodically (every 0.3 miles) in a woven wire fence would allow cranes to walk through the fence while still restraining livestock (Nesbitt 1996).

Mitigation Options

Mitigation is scalable depending on the impact, with mitigation options for take that significantly impairs or disrupts essential behavioral patterns (e.g., disturbance to nesting cranes). The DEP’s [ERP process](#) forms a basis of mitigation for loss or degradation of sandhill crane nesting and roosting habitat. Following the ERP process, the FWC will review the resulting wetland mitigation to assess whether the mitigation meets the definition of conservation benefit for sandhill cranes. In most cases, wetland mitigation through the ERP process will satisfy the applicants’ responsibilities under Chapter 68A-27 and associated rule enforcement policies. However, under certain circumstances, the FWC may require mitigation specific for take of sandhill cranes to ensure a conservation benefit. Potential options for mitigation are described below. This list is not an exhaustive list of options.

Scientific Benefit

This section describes research and monitoring activities that provide scientific benefit, per Rule 68A-27.007, F.A.C. Conducting or funding these activities can be the sole form of mitigation for a project with FWC approval of methodologies.

- Funding for multi-year implementation of FWC’s statewide monitoring protocol for sandhill cranes.
- A study using radio or satellite telemetry to examine movements, home range size, productivity, and survival in urban and suburban areas.

Habitat

Habitat Protection/Acquisition or Management:

- The acquisition option includes wetland mitigation through the ERP program. The management option includes wetland restoration or creation through the ERP program. In either case, the FWC will review the ERP mitigation to evaluate whether it meets the definition of conservation benefit for sandhill cranes. Suitable mitigation sites include shallow herbaceous wetlands with short vegetation and adjacent, open uplands suitable for foraging. Water depth in sandhill crane foraging habitat varies from 0-32 inches, with average water depth in nesting habitat ranging from 5-13 inches from January-April (Stys 1997).
- With few exceptions (e.g., take of an active nest or land use conversion during the time period that they are being used for foraging by flightless young), ERP mitigation is expected to satisfy the applicants’ responsibilities under Rule 68A-27 and associated rule enforcement policies, and an FWC permit may be subsequently issued based on the understanding that

implementation of project commitments will satisfy the requirements of 68A-27.005 and 68A-27.007, F.A.C.

Funding

No funding option has been identified at this time. However, funding options as part of mitigation will be considered on a case by case basis.

Information

- Mitigation can be used to support research projects consistent with actions in the SAP.
- Monitoring options can include multi-year monitoring that contributes to a portion of a statewide survey.
- The information option is appropriate in circumstances where ERP mitigation does not satisfy the FWC's definition of conservation benefit for sandhill cranes. For example, additional mitigation may be required if land use conversion in suitable upland habitat within 1500 feet of a nest site cannot take place outside of the timeframe when young are capable of sustained flight.

Programmatic Options

No programmatic option available.

Multispecies Options

- The ERP process can serve as a multi-species option for sandhill cranes and other species that use shallow herbaceous wetlands. In many circumstances, mitigation provided through the ERP process may be sufficient to cover take of sandhill cranes and other state-Threatened wetland dependent species.

FWC Permitting: Intentional Take

Intentional take is not incidental to otherwise lawful activities. Per Chapter 68A-27, F.A.C., intentional take is prohibited and requires a permit. For state-Threatened species, intentional take permits may only be considered for scientific or conservation purposes (defined as activities that further the conservation or survival of the species taken). Permits are issued for state-Threatened species following guidance in Rule 68A-27.007(2)(a), F.A.C.

Risks to Property or People

Intentional take for Human Safety

- Rule 68A-9.012, F.A.C., describes circumstances under which sandhill cranes may be taken on airport property without further state authorization for an imminent threat to aircraft or human safety.
- Permits will be issued only under limited and specific circumstances, in cases where there is an immediate danger to the public's health and/or safety, including imminent or existing power outages that threaten public safety, or in direct response to an official declaration of a state of emergency by the Governor of Florida or a local governmental entity. Applications submitted for this permit must include all information that is required from any other applicant seeking a permit, along with a copy of the official declaration of a state of emergency, if any. This permit process may be handled after the fact or at least after construction activities have already started. An intentional take permit may be issued for such purposes.

Aversive Conditioning

Prior to using approved aversive conditioning methods, landowners should make all practicable attempts to resolve the issue without aversive conditioning, including:

- Removing, to the extent practicable, any attractants (e.g., food sources) contributing to the behavior. It is important to note that intentional feeding of sandhill cranes is prohibited under Rule 68A-4.001 F.A.C. and should be reported to the FWC's Wildlife Alert Hotline (888-404-3922).
- Where feasible, covering or moving automobiles so that cranes cannot see their reflections in the shiny surfaces.
- Temporarily covering reflective surfaces like windows or glass doors with material, where feasible, so that the birds do not see their reflections. For example, surfaces can be made less reflective by rubbing a bar of soap on the surface.
- Temporarily protecting windows or screens by erecting an exclusion "fence," where feasible. For example, such a fence may consist of a string or heavy monofilament line mounted on stakes about 2.5-3 feet off the ground and 3 feet from the parts of homes (window or pool screens) that are being damaged by cranes.
- Protecting windows and screens by planting shrubs or bushes that make the area inaccessible to cranes.
- Placing passive, visual scaring devices (e.g., streamers, Mylar ribbons) on houses or other structures.
- Contacting the FWC's Wildlife Assistance Biologists at [regional offices](#) for additional guidance.

In accordance with the FWC's policy on Aversive Conditioning of State Listed Species, no permit is required when using approved aversive conditioning techniques described below. Aversive conditioning may be used to discourage sandhill cranes that exhibit behavior that presents or potentially presents a human safety hazard, causes or is about to cause property damage, or could endanger the life of the crane. **Please note that no aversive conditioning methods are approved within 400 feet of an active nest** without a permit. Approved aversive conditioning methods for sandhill cranes include:

- Spraying with water in a manner unlikely to cause harm.
- Motion-activated sprinklers.
- Use of loud noises, such as air horns, vehicle horns, or propane cannons. Please note that this method is only approved **outside of the breeding season** and is **not** approved for adults accompanied by young that are incapable of sustained flight.
- Chasing cranes from the property by foot or by vehicle in a manner that does not result in physical contact with the birds and does not involve entering suitable nesting habitat. Please note that this method is **not** approved if adults are accompanied by young that are incapable of sustained flight.

As noted in the FWC's policy for aversive conditioning of state-listed species, landowners are encouraged to provide an "after action" report to the Regional Wildlife Assistance Biologist at the appropriate [regional office](#) so the FWC can track the frequency of use and effectiveness of aversive conditioning methods. The report should include a description of the conflict, the frequency of aversive conditioning, the methods used, and the response of the sandhill cranes. Any injury and/or

mortality of sandhill cranes resulting from aversive conditioning must be reported immediately to the FWC's Regional Wildlife Assistance Biologist.

Permits Issued for Harassment

In areas not covered by Rule 68A-9.012 F.A.C., any attempt to discourage sandhill cranes that does not comply with the approved aversive conditioning methods specified above is considered harassment and is prohibited without a permit. Examples include, but are not limited to, use of pyrotechnics, non-toxic chemical treatments, aversive conditioning within 400 feet of an active nest, or loud noises or chasing of adult cranes accompanied by flightless young.

Scientific Collecting and Conservation Permits

Scientific collecting permits may be issued for the sandhill crane using guidance found in Rule 68A-27.007(2)(a), F.A.C. Activities requiring a permit include any research that involves capturing, handling, or marking wildlife; conducting biological sampling; or other research that may cause take.

Considerations for Issuing a Scientific Collecting Permit

- 1) Is the purpose adequate to justify removing the species (if the project requires this)?
 - Permits will be issued if the identified project is consistent with the goal of the SAP (i.e., improvement in status that leads to removal from Florida's Endangered and Threatened Species List), or addresses an identified data gap important for the conservation of the species.
- 2) Are there direct or indirect effects of issuing the permit on the wild population?
- 3) Will the permit conflict with program intended to enhance survival of species?
- 4) Will issuance of the permit reduce the likelihood of extinction?
 - Projects consistent with the goal of the SAP or that fill identified data gaps in species life history or management may reduce the likelihood of extinction. Applications should clearly explain how the proposed research will provide a scientific or conservation purpose for the species.
- 5) Have the opinions or views of other scientists or other persons or organizations having expertise concerning the species been sought?
- 6) Is applicant expertise sufficient?
 - Applicants must have prior documented experience with this or similar species; applicants should have met all conditions of previously issued permits; and applicants should have a letter of reference that supports their ability to handle the species.

Relevant to all Scientific Collecting for Florida Sandhill Cranes

- Applications must include a proposal that clearly states the objectives and scope of work of the project, including a justification of how the project will result in a conservation or scientific purpose that benefits the species. The proposal also must include a thorough description of the project's methods, time frame, and final disposition of all individuals. Permit amendment and renewal applications must be "stand alone" (i.e., include all relevant information on objectives and methods).
- Aerial surveys do not require a permit, provided the surveys do not occur at low enough elevation to flush birds from active nests. Aerial transects above 250 feet are not expected to result in flushing from nests, but activities should cease or move to a higher altitude if flushing occurs.

- Ground surveys do not require a permit, provided surveyors remain outside of a 400 foot buffer around active nests.
- Non-destructive habitat sampling near foraging, roosting, and nesting birds does not need a permit provided observers remain outside the identified buffer distances in active nesting sites and nesting birds do not flush.
- Permits may be issued to display a specimen if the specimen was obtained via a rehabilitation facility or was encountered dead.
- Permits may be issued for captive possession (removal from the wild) if the individual is deemed non-releasable.
- Trapping and handling protocols, and a justification of trapping methods, must be included in the permit application and should identify measures to lessen stress for captured sandhill cranes.
- Methodologies for any collection of tissues such as blood should be clearly spelled out, including measures taken to reduce stress/injury to the birds.
- Disposition involving captive possession for any period of time must include a full explanation of whether the facility has the appropriate resources for accomplishing the objectives and for maintaining the animals in a safe and humane manner.
- Federal permits are required from the USFWS to comply with the Migratory Bird Treaty Act and from the USGS Bird Banding Lab for banding, color-marking, specific capture methods, sampling of blood/tissues, collection of feathers, and attachment of transmitters or other data gathering mechanisms. Federal salvage permits are also required to collect any dead individuals (i.e. mortality not due to research activities or incidental take from research activities) or parts of deceased individuals including feathers and tissues.
- Any mortality should be reported immediately to the FWC at the contact information below. The FWC will provide guidance on proper disposal of specimens.
- Active nest sites should be reported as soon as possible to the FWC at the contact information below.
- A final report should be provided to the FWC in the format specified in the permit conditions.

Additional information

Information on Economic Assessment of this guideline can be found at <http://myfwc.com/wildlifehabitats/imperiled/management-plans/>

Contact

For permitting questions or to report mortalities, contact the FWC at (850) 921-5990 or WildlifePermits@myfwc.com. For more species specific information visit <http://myfwc.com/contact/>.

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