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Dated: September 20, 2018.

James W. Kurth,

Deputy Director, U.S. Fish and Wildlife Service, Exercising the Authority of the Director, U.S. Fish and Wildlife Service.

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DEPARTMENT OF THE INTERIOR

Fish and Wildlife Service

50 CFR Part 17

[Docket No. FWS–R4–ES–2018–0057; 4500030113]

RIN 1018–BD21

Endangered and Threatened Wildlife and Plants; 12-Month Petition Finding and Threatened Species Status for Eastern Black Rail With a Section 4(d) Rule

AGENCY: Fish and Wildlife Service, Interior.

ACTION: Proposed rule.

SUMMARY: We, the U.S. Fish and Wildlife Service (Service), announce a 12-month petition finding on a petition to list the eastern black rail (*Laterallus jamaicensis jamaicensis*) as an endangered or threatened species under the Endangered Species Act of 1973 (Act), as amended. After review of the best available scientific and commercial information, we find that listing the eastern black rail is warranted. Accordingly, we propose to list the eastern black rail, a bird subspecies that occurs in as many as 35 States, the District of Columbia, Puerto Rico, and several countries in the Caribbean and Central America, as a threatened species under the Act. If we finalize this rule as proposed, it would extend the Act's protections to this subspecies and, accordingly, add this subspecies to the List of Endangered and Threatened Wildlife. We also propose a rule under the authority of section 4(d) of the Act that provides measures that are necessary and advisable to provide for the conservation of the eastern black rail. We have determined that designation of critical habitat for the eastern black rail is not prudent at this time, but we are seeking public comment on that determination.

DATES: We will accept comments received or postmarked on or before December 10, 2018. Comments submitted electronically using the Federal eRulemaking Portal (see **ADDRESSES**, below) must be received by 11:59 p.m. Eastern Time on the closing date. We must receive requests for public hearings, in writing, at the address shown in **FOR FURTHER INFORMATION CONTACT** by November 23, 2018.

ADDRESSES: You may submit comments by one of the following methods:

(1) *Electronically:* Go to the Federal eRulemaking Portal: *http://www.regulations.gov.* In the Search box, enter FWS–R4–ES–2018–0057, which is the docket number for this rulemaking. Then, click the Search button. On the resulting page, in the Search panel on the left side of the screen, under the Document Type heading, click on the Proposed Rule box to locate this document. You may submit a comment by clicking on ''Comment Now!''

(2) *By hard copy:* Submit by U.S. mail or hand-delivery to: Public Comments Processing, Attn: FWS–R4–ES–2018–0057, U.S. Fish and Wildlife Service, MS: BPHC, 5275 Leesburg Pike, Falls Church, VA 22041–3803.

We request that you send comments only by the methods described above. We will post all comments on *http://www.regulations.gov.* This generally means that we will post any personal information you provide us (see *Public Comments,* below, for more information).

FOR FURTHER INFORMATION CONTACT: Tom McCoy, Field Supervisor, South Carolina Ecological Services Field Office, 176 Croghan Spur Road, Suite 200, Charleston, SC 29407; telephone 843–727–4707; facsimile 843–300–0204. Persons who use a telecommunications device for the deaf (TDD) may call the Federal Relay Service at 800–877–8339.

SUPPLEMENTARY INFORMATION:

Executive Summary

Why we need to publish a rule. Under the Act, if we determine that a species is an endangered or threatened species throughout all or a significant portion of its range, we are required to promptly publish a proposal in the **Federal Register** and make a determination on our proposal within 1 year. Listing a species as an endangered or threatened species can only be completed by issuing a rule.

This rule proposes to list the eastern black rail (*Laterallus jamaicensis jamaicensis*) as a threatened species and to provide measures under section 4(d) of the Act that are tailored to our current understanding of the conservation needs of the eastern black rail.

The basis for our action. Under the Act, we may determine that a species is an endangered or threatened species based on any of five factors: (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence. We have determined that habitat loss and destruction, sea level rise and tidal flooding, incompatible land management, and increasing storm intensity and frequency are the primary threats to this subspecies.

Peer review. We prepared a species status assessment report (SSA report) for the eastern black rail. The SSA report represents a compilation and assessment of the best scientific and commercial information available concerning the status of the eastern black rail, including the past, present, and future factors influencing the subspecies (Service 2018, entire). We solicited independent peer review of the SSA report by 10 individuals with expertise in rail biology and ecology and in species modeling; we received comments from 5 of the 10 reviewers. The reviewers were generally supportive of our approach and made suggestions and comments that strengthened our analysis. The SSA report and other materials relating to this proposal can be found at *http://www.regulations.gov* under Docket No. FWS–R4–ES–2018–0057.

Information Requested

Public Comments

We intend that any final action resulting from this proposed rule will be based on the best scientific and commercial data available and be as accurate and as effective as possible. Therefore, we request comments or information from other concerned governmental agencies, Native American tribes, the scientific community, industry, or any other interested parties concerning this proposed rule. We particularly seek comments concerning:

(1) The eastern black rail's biology, range, and population trends, including:

(a) Biological or ecological requirements of the subspecies, including habitat requirements for feeding, breeding, and sheltering;

(b) Genetics and taxonomy;

(c) Historical and current range, including distribution patterns;

(d) Historical and current population levels, and current and projected trends; and

(e) Past and ongoing conservation measures for the subspecies, its habitat, or both.

(2) Factors that may affect the continued existence of the subspecies, which may include habitat modification or destruction, overutilization, disease, predation, the inadequacy of existing regulatory mechanisms, or other natural or manmade factors.

(3) Biological, commercial trade, or other relevant data concerning any threats (or lack thereof) to the eastern black rail and existing regulations that may be addressing those threats.

(4) Additional information concerning the historical and current status, range, distribution, and population size of the eastern black rail, including the locations of any additional populations of this subspecies.

(5) The reasons why areas should or should not be designated as critical habitat as provided by section 4 of the Act (16 U.S.C. 1531 *et seq.*), including the possible risks or benefits of designating critical habitat, including risks associated with publication of maps designating any area on which this subspecies may be located, now or in the future, as critical habitat. We specifically request information on the threats of taking or other human activity, particularly by birders, on the eastern black rail and its habitat, and the extent to which designation might increase those threats, as well as the possible benefits of critical habitat designation to the eastern black rail.

(6) Whether the measures outlined in the proposed section 4(d) rule are necessary and advisable for the conservation and management of the eastern black rail. We particularly seek comments concerning:

(a) Whether the provision related to the prescribed burn activities should be revised to include additional spatial or temporal restrictions or deferments, or additional best management practices;

(b) Whether the provision related to the haying, mowing, and mechanical treatment activities should be revised to include additional spatial or temporal restrictions or deferments;

(c) Whether the provision related to the grazing activities should be revised to include spatial or temporal restrictions or deferments. We also seek comment on the level of grazing density that is compatible with eastern black rail occupancy; and

(d) Whether there are additional provisions the Service may wish to consider for the section 4(d) rule in order to conserve, recover, and manage the eastern black rail, such as limitations on road construction and other infrastructure or construction activities, moist soil management, or structural marsh management activities.

Please include sufficient information with your submission (such as scientific journal articles or other publications) to allow us to verify any scientific or commercial information you include.

Please note that submissions merely stating support for or opposition to the action under consideration without providing supporting information, although noted, will not be considered in making a determination, as section 4(b)(1)(A) of the Act directs that determinations as to whether any species is an endangered or threatened species must be made ''solely on the basis of the best scientific and commercial data available.''

You may submit your comments and materials concerning this proposed rule by one of the methods listed in **ADDRESSES**. We request that you send comments only by the methods described in **ADDRESSES**.

If you submit information via *http://www.regulations.gov,* your entire submission—including any personal identifying information—will be posted on the website. If your submission is made via a hardcopy that includes personal identifying information, you may request at the top of your document that we withhold this information from public review. However, we cannot guarantee that we will be able to do so. We will post all hardcopy submissions on *http://www.regulations.gov.*

Comments and materials we receive, as well as supporting documentation we used in preparing this proposed rule, will be available for public inspection on *http://www.regulations.gov,* or by appointment, during normal business hours, at the U.S. Fish and Wildlife Service, South Carolina Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Public Hearing

Section 4(b)(5) of the Act provides for a public hearing on this proposal, if requested. We must receive requests within 45 days after the date of publication of this proposed rule in the **Federal Register** (see **DATES**, above). Such requests must be sent to the address shown in **FOR FURTHER INFORMATION CONTACT**. We will schedule a public hearing on this proposal, if requested, and announce the date, time, and place of that hearing, as well as how to obtain reasonable accommodations, in the **Federal Register** and local newspapers at least 15 days before the hearing.

Peer Review

The purpose of peer review is to ensure that our listing determination is based on scientifically sound data, assumptions, and analyses. In accordance with our joint policy on peer review published in the **Federal Register** on July 1, 1994 (59 FR 34270), we sought the expert opinions of 10 appropriate and independent specialists with expertise in eastern black rail ecology and modeling regarding the SSA report (Service 2018, entire) that supports this proposed rule. We received comments from 5 of the 10 peer reviewers.

Previous Federal Action

In April 2010, the Center for Biological Diversity (CBD) petitioned the Service to list 404 aquatic, riparian, and wetland species from the southeastern United States under the Act. The eastern black rail was among these 404 species. On September 27, 2011, the Service published a 90-day finding that the petition presented substantial scientific or commercial information indicating that listing may be warranted for 374 species, including the eastern black rail (76 FR 59836). On September 13, 2012, CBD filed a complaint against the Service for failure to complete a 12-month finding for the eastern black rail. On April 25, 2013, the Service entered into a settlement agreement with CBD to resolve the complaint; the court approved the agreement on April 26, 2013. The agreement specified that a 12-month finding for the eastern black rail would be delivered to the **Federal Register** by September 30, 2018. This document serves as our 12-month finding on the April 2010 petition.

Background

A thorough review of the taxonomy, life history, and ecology of the eastern black rail is presented in the SSA report (Service 2018, entire).

Taxonomy and Species Description

The eastern black rail is a subspecies of black rail, which is a member of the family Rallidae (rails, gallinules, and coots) in the order Gruiformes (rails, cranes, and allies; American Ornithologists' Union, 1998, p. 130). The eastern black rail is one of four recognized subspecies of black rail. The California black rail (*Laterallus jamaicensis coturniculus*) is the only other subspecies that occurs in North America; its range does not overlap with the eastern black rail Taylor and van Perlo 1998, p. 221; Clements *et al.* 2016, unpaginated). The Birds of North America and Avibase both currently recognize the eastern black rail as a valid subspecies (Eddleman *et al.* 1994, unpaginated; Avibase 2003, unpaginated). We have no information

to suggest there is scientific disagreement about the eastern black rail's taxonomy; therefore, we accept that the eastern black rail is a valid taxon.

The black rail is the smallest rail in North America. Males and females are similar in size, and adults are generally pale to blackish gray, with a small blackish bill and bright red eyes. The eastern black rail is larger (mean mass=35 grams) but has less brightly colored plumage than the California black rail (mean mass = 29 grams) (Eddleman *et al.* 1994, unpaginated).

The eastern black rail has four life stages: egg, chick, juvenile, and adult; we discuss specifics of each of these life stages in detail in our SSA report (Service 2018, pp. 8–12). Eastern black rail egg laying and incubation primarily occur from May to August, with some early nesting in March and April (Watts 2016, pp. 10–11; A. Moore and J. Wilson 2018, unpublished data). The chick stage occurs from May through September. The juvenile stage begins when a chick has fledged and is independent from the parents. Eastern black rails reach the sexually mature adult life stage the spring after hatch year. Adults undergo a complete postbreeding molt each year between July and September on the breeding grounds (Pyle 2008, p. 477; Hand 2017b, p. 15). During that time, individuals simultaneously lose all of their wing flight feathers and tail flight feathers, and are unable to fly for approximately 3 weeks (Flores and Eddleman 1991, pp. iii, 62–63; Eddleman, Flores, and Legare 1994, unpaginated). We recognize that there is latitudinal variability of these life-history events across the range of the eastern black rail. The subspecies' lifespan is not known.

The nature of migration for the eastern black rail is poorly understood. Preliminary results suggest there are two populations of eastern black rail in the south-central United States: A migratory population breeding in Colorado and Kansas, and wintering in Texas; and a non-migratory population living in Texas year-round (Butler 2017, pers. comm.). Additionally, it is suspected that the northern U.S. Atlantic coast population migrates and winters on the southern Atlantic coast (*e.g.,* the Carolinas and Florida) and also in the Caribbean and Central America (Eddleman, Flores, and Legare 1994, unpaginated; Taylor and van Perlo, 1998, pp. 221–222).

Distribution

The eastern black rail occupies portions of the eastern United States (east of the Rocky Mountains), Mexico, Central America, and the Caribbean. Individuals that are presumed to be the eastern black rail have also been reported on occasion in Brazil. In the United States, eastern black rails are found in both coastal and inland areas, but the majority of detections are from coastal sites. In a recent assessment of 23 States that comprise the primary area of the subspecies' range within the contiguous United States (*i.e.,* along the Atlantic and Gulf Coasts), approximately 90 percent of documented breeding-season occurrence records occurred at coastal locations (Watts 2016, p. 117). Inland records accounted for less than 10 percent of total occurrences, and more than 60 percent of the inland records occurred before 1950 (Watts 2016, p. 117). The eastern black rail has been reported to occur throughout the Caribbean and Central America, and it has been hypothesized that some birds may migrate from the coastal United States to the Caribbean in the winter; however, the subspecies' distribution is poorly understood (Taylor and van Perlo 1998, pp. 221–222). There have been very few reports of eastern black rails in recent years from the Caribbean and Central America. It is not certain whether this is due to lack of survey effort, loss of habitat, predation, or a combination of these.

See the figure, below, for a distribution map for the eastern black rail. This figure shows the current areas where black rails are found year-round and in the spring and summer. Shaded countries and U.S. States are those that may have detections of eastern black rails; however, detections in these countries or U.S. States may be few in number and the bird may not be detected regularly, *i.e.,* it may be considered a vagrant or accidental migrant in these areas. The individual detections in Central America, the Caribbean, and Brazil occurred from 2011 to present.

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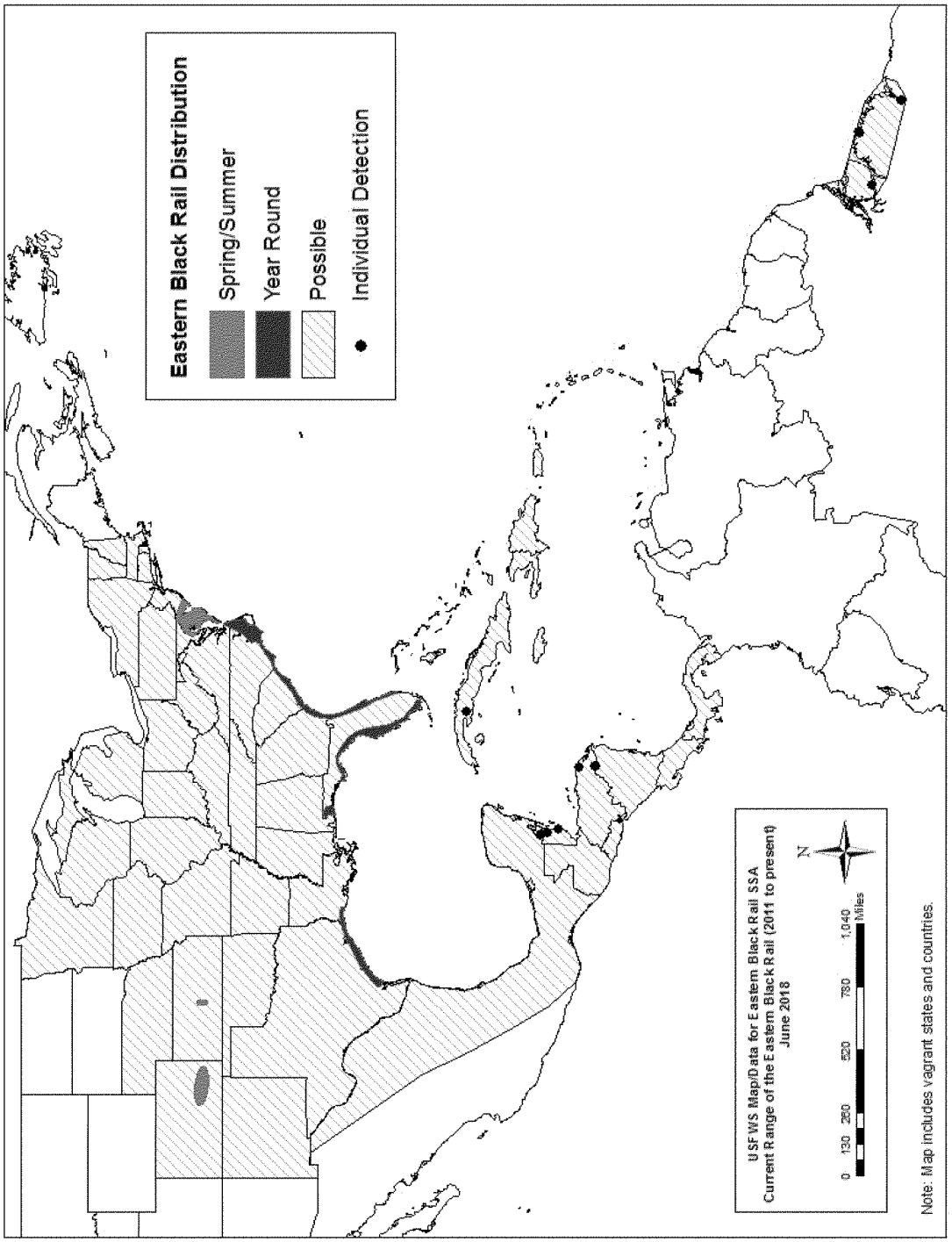
Distribution Map of the Eastern Black Rail



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Habitat

Eastern black rails are found in a variety of salt, brackish, and freshwater marsh habitats that can be tidally or non-tidally influenced. Within these habitats, the birds occupy relatively high elevations along heavily vegetated wetland gradients, with soils that are moist or flooded to a shallow depth (Eddleman, Knopf, Meanley, Reid, and Zembal 1988, p. 463; Nadeau and Conway 2015, p. 292). Eastern black rails require dense vegetative cover that allows movement underneath the canopy. Plant structure is considered more important than plant species composition in predicting habitat suitability for the subspecies (Flores and Eddleman 1995, pp. 357, 362). Occupied habitat tends to be primarily composed of fine-stemmed emergent plants (rushes, grasses, and sedges) with high stem densities and dense canopy cover (Flores and Eddleman 1995, p. 362; Legare and Eddleman 2001, pp. 173–174). However, when shrub densities become too high, the habitat becomes less suitable for eastern black rails. Soils are moist to saturated (occasionally dry) and interspersed with or adjacent to very shallow water (1 to 6 centimeters) (Legare and Eddleman 2001, pp. 173, 175). Eastern black rails forage on a variety of small (<1 centimeter (cm) (0.39 inches (in))) aquatic and terrestrial invertebrates, especially insects, and seeds (*e.g.,*

Typha, Scirpus, Spartina spp.) by gleaning or pecking at individual items (Eddleman, Flores, and Legare 1994, unpaginated; Ehrlich, Dobkin, and Wheye 1988, p. 102).

Species Needs

The eastern black rail is a wetland dependent subspecies. While it can be found in salt, brackish, and freshwater marshes that are tidally or non-tidally influenced, it has a very specific niche habitat. It requires dense herbaceous vegetation to provide shelter and cover and areas for protected nest sites; it is not found in areas with woody vegetation.

The bird requires shallow water or moist soil for its nesting sites. Ideally, the water level is 1 to 6 cm (0.39 to 2.36 in), although less than 3 cm (1.18 in) is ideal for foraging and chick rearing. Water levels must be below the nests during egg laying and incubation for nests to be successful. Eastern black rails require elevated refugia with dense cover to survive high water events, because juvenile and adult black rails prefer to walk and run rather than fly and chicks are unable to fly. Eastern black rails fly little during the breeding and wintering seasons—they prefer to remain on the ground, running quickly through dense vegetation—and are considered secretive because of this behavior. Having higher elevation areas with dense vegetation allows the birds to escape flood events during the flightless molt period, and provides shelter from predators.

Summary of Biological Status and Threats

We completed a comprehensive assessment of the biological status of the eastern black rail, and prepared a report of the assessment (SSA report; Service 2018, entire), which provides a thorough account of the subspecies' overall viability. Below, we summarize the key results and conclusions of the SSA report, which can be viewed under Docket No. FWS–R4–ES–2018–0057 at *http://www.regulations.gov*.

To assess eastern black rail viability, we used the three conservation biology principles of resiliency, representation, and redundancy (together, ''the three Rs,'' (3Rs)) (Shaffer and Stein 2000, pp. 306–310). Briefly, resiliency refers to the ability of a species to withstand environmental and demographic stochasticity (for example, wet or dry years); representation refers to the ability of the species to adapt over time to long-term changes in the environment (for example, climate change); and redundancy refers to the ability of the species to withstand catastrophic events (for example, hurricanes). In general, the more redundant and resilient a species is and the more representation it has, the more likely it is to sustain populations over time, even under changing environmental conditions. Using these principles, we identified the eastern black rail's ecological requirements for survival and reproduction at the individual, population, and subspecies levels, and described the beneficial and risk factors influencing the subspecies' viability.

We delineated analysis units for the eastern black rail based on environmental variables (aquifer permeability, slope, mean precipitation, mean potential evapotranspiration, and percent sand in soil). We used 8,281 point localities from combined datasets (*i.e.,* eBird, Center for Conservation Biology, University of Oklahoma, and additional research partners) from 1980 through 2017, to delineate the analysis units for the eastern black rail. We named the analysis units using standard topographic and ecological landmarks: New England, Mid-Atlantic Coastal Plain, Appalachians, Southeast Coastal Plain, Southwest Coastal Plain, Central Lowlands, and Great Plains. Based on available data, we have concluded that the New England, Appalachians, and Central Lowlands analysis units are effectively extirpated. While these three analysis units historically did not support abundances of the eastern black rail as high as the other four analysis units, an evaluation of the current status information, including the paucity of current records, negative survey results, and the demonstrated range contraction throughout these areas, supports our conclusion that the eastern black rail is effectively extirpated from these analysis units. The remaining four analysis units, the Mid-Atlantic Coastal Plain, Southeast Coastal Plain, Southwest Coastal Plain, and Great Plains, have records of current populations of eastern black rails.

To assess resiliency, we analyzed occupancy within the analysis units through the creation of a dynamic occupancy model. We used data from repeated presence/absence surveys across the range of the eastern black rail to estimate the probability of presence at a site and related the occupancy probability to environmental covariates of interest (wettest month precipitation, temperature range, annual mean temperature, coldest month mean temperature, presence/absence of fire ants, and State identification). The lower the occupancy probability in an analysis unit, the less resiliency that analysis unit exhibits. We found the four extant analysis units (Southeast Coastal Plain, Mid-Atlantic Coastal Plain, Great Plains, and Southwest Coastal Plain) to have very low occupancy probabilities ranging from 0.099 to 0.25. The results also indicated fairly high site extinction probabilities with accompanying low site persistence.

To assess representation, we used two metrics to estimate and predict representative units that reflect the subspecies' adaptive capacity: Habitat variability and latitudinal variability. The eastern black rail exhibits adaptive potential by using similar habitat elements within different wetland types (habitat variability) within analysis units, *i.e.,* higher elevation areas within wetlands with dense vegetation, moist soils, and shallow flood depths (Eddleman, Knopf, Meanley, Reid, and Zembal 1988, p. 463; Nadeau and Conway 2015, p. 292). Therefore, the subspecies shows a level of adaptive capacity by using different wetland types that contain the required habitat elements. Additionally, we used the metric of latitudinal variability to reflect the eastern black rail's wide range across the contiguous United States. To maintain existing adaptive capacity, it is important to have resilient populations (analysis units) that exhibit habitat variability and latitudinal variability to maintain adaptive capacity.

To assess redundancy, we evaluated the current distribution of eastern black rail analysis units through their present-day spatial locations. To have high redundancy, the eastern black rail would need to have multiple resilient analysis units spread throughout its range.

Current Condition of Eastern Black Rail

Historically, the eastern black rail ranged across the eastern, central, and southern United States; historical records also exist from the Caribbean and Central America. It occupied multiple areas of wetlands (including salt marshes, coastal prairies, and hay fields) throughout the range; approximately 90 percent of documented breeding-season occurrence records occurred at coastal locations and less than 10 percent were inland records, with more than 60 percent of the inland records occurring before 1950 (Watts 2016, entire). The eastern black rail also occupied multiple areas of wetlands within each analysis unit. Within the northeastern United States, historical (1836–2010) records document the eastern black rail as present during breeding months from Virginia to Massachusetts, with 70 percent of historical observations (773 records) in Maryland, Delaware, and New Jersey (Watts 2016, p. 22).

Maryland, Delaware, and New Jersey are considered historical strongholds for eastern black rail in this region of the United States (the Northeast) as well as across the subspecies' entire breeding range (Watts 2016, p. 22), due to the total number and frequency of observations reported over time. Virginia, New York, and Connecticut account for an additional 21 percent of the historical records (235 records) from the Northeast (Watts 2016, p. 22). Recent (2011–2016) records from the Northeast are low in number (64 records), with almost all records restricted to outer coastal habitats (Watts 2016, pp. 22, 24). The distribution of the recent records points toward a substantial southward contraction in the subspecies' range of approximately 450 kilometers (280 miles), with vacated historical sites from 33 counties extending from the Newbury marshes in Massachusetts to Ocean County, New Jersey (Watts 2016, pp. 24, 119). Further, the distribution of the recent records has become patchy along the Atlantic coast, and an evaluation of the records within the 15 counties still currently occupied suggests an almost full collapse of the eastern black rail population in the Northeast (Watts 2016, p. 24).

While the Appalachians and Central Lowlands analysis units supported less habitat for eastern black rails compared to the more coastal analysis units, interior occurrences were more common historically. Current population estimates for States with a large area occurring within the boundaries of the Appalachians analysis unit are effectively zero (Watts 2016, p. 19). Within that unit, an estimated 0 to 5 breeding pairs currently occur in Pennsylvania, and no breeding pairs are thought to occur in New York or West Virginia (Watts 2016, p. 19). Birds previously detected in the Appalachians analysis unit were found in small depressional wetlands within active pastures; other freshwater wetlands dominated by cattails, rushes, or sedges; and drainage ditches (Watts 2016, pp. 48, 74). While these wetland types still exist within the analysis unit and may support individuals or a very low-density, scattered population (Watts 2016, pp. 48, 74), a substantial amount of this kind of habitat has been lost primarily due to the draining of freshwater wetlands for agricultural purposes. These estimates likely hold true for the interior portions of the other States within the Appalachians analysis unit (based on few current detections). Similar losses of habitat have occurred in the Central Lowlands analysis unit, and there are currently few detections of eastern black rails across this unit. Moreover, the current detections are not consistent from year to year even when habitat remains suitable. For example, Indiana Department of Natural Resources surveys for eastern black rails at multiple sites from 2010–2016 yielded one detection at a single site previously known to support eastern black rails (Gillett 2017, unpublished data).

In the Chesapeake Bay region, the distribution of eastern black rail has contracted, and the counts of birds have declined. A series of systematic surveys for eastern black rails has been conducted around the Chesapeake Bay since the early 1990s (Watts 2016, pp. 59, 67). Surveys estimated 140 individuals in the 1990–1992 survey period, decreasing to 24 individuals in 2007, and only 8 individuals in 2014, a decline of over 90 percent in less than 25 years (Watts 2016, p. 59; D. Brinker, unpublished data). Of 328 points surveyed in Virginia in 2007, 15 birds were detected; a second round of surveys in 2014 yielded two detections at 135 survey points (including all survey points with positive occurrences in the 2007 survey effort), equating to an 85 percent decline over 7 years (Watts 2016, pp. 67, 71; Wilson *et al.* 2015, p. 3).

Historically, the eastern black rail was also present during breeding months at inland and coastal locations throughout southeastern coastal States (the Southeast), a region that included North Carolina, South Carolina, Georgia, Florida, Tennessee, Mississippi, Alabama, Louisiana, and Texas (Watts 2016, pp. 75–76). Of these States, Texas, Florida, South Carolina, and North Carolina contained 89 percent of all historical observations (734 records) (Watts 2016, p. 77). The other States (Georgia, Tennessee, Mississippi, Alabama, and Louisiana) either do not have a history of supporting eastern black rails consistently or are considered to be on the peripheries of known breeding areas (Watts 2016, p. 77). Recently, there have been 108 records of eastern black rails during the breeding season, and at a coarse view, the same four southeastern States that substantially supported the subspecies historically still support the subspecies (Watts 2016, pp. 77, 79). However, North Carolina shows a severe decline in the number of occupied sites, with only four properties occupied in 2014–2015, down from nine in 1992–1993 (Watts 2016, p. 80). Additional surveys in 2017 yielded no new occupied sites in coastal North Carolina (B. Watts and F. Smith 2017, unpublished data). South Carolina shows a limited distribution, with two known occupied areas (Wiest 2018, pers. comm.) and an estimated 50 to 100 breeding pairs, leaving Texas and Florida as the current strongholds for the Southeast. At the time of the 2016 coastal assessment, it was surmised that coastal Georgia may support a breeding population of unknown size (Watts 2016, pp. 93–95); however, a coastwide survey in 2017 at 409 survey points in Georgia yielded no detections of eastern black rails (B. Watts and F. Smith 2017, unpublished data). In short, across the Atlantic and Gulf Coasts, recent observations show poor presence inland and a widespread reduction in the number of sites used across coastal habitats (Watts 2016, p. 79).

The history of the subspecies' distribution in the interior continental United States is poorly known. Historical literature indicates that a wide range of interior States were occupied by the eastern black rail, either regularly or as vagrants (Smith-Patten and Patten 2012, entire). Eastern black rails are currently vagrants (casual or accidental) in Arkansas, Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, Nebraska, New Mexico, Ohio, South Dakota, and Wisconsin (Smith-Patten and Patten 2012, entire). Presently, eastern black rails are reliably located within the Arkansas River Valley of Colorado (presumed breeder in the State), and in southcentral Kansas in Stafford, Finney, Franklin, Barton, and Riley Counties (confirmed breeder in the State) (Butler, Tibbits, and Hucks 2014, p. 20; Smith-Patten and Patten 2012, pp. 9, 17). In Colorado, the subspecies is encountered in spring and summer at Fort Lyon Wildlife Area, Bent's Old Fort, Oxbow State Wildlife Area, Bristol (Prowers County), and John Martin Reservoir State Park (Smith-Patten and Patten 2012, p. 10). In Kansas, eastern black rails are regularly present during the breeding months at Quivira National Wildlife Refuge (NWR) and Cheyenne Bottoms Wildlife Area (Smith-Patten and Patten 2012, p. 17), and at Cheyenne Bottoms Preserve during wet years when habitat conditions are suitable (Penner 2017, pers. comm.). In Oklahoma, occurrence mapping suggests that this subspecies had at a maximum a patchy historical distribution throughout the State.

Eastern black rail analysis units currently have low to no resiliency in the contiguous United States (Service 2018, pp. 79–82). The Great Plains, Southwest Coastal Plain, and Southeast Coastal Plain analysis units have low resiliency based on the dynamic occupancy model results, which indicate very low occupancy

probabilities in each modeled analysis unit: 0.25 in the Southwest Coastal Plain, 0.13 in the Great Plains, and 0.099 in the Southeast Coastal Plain. The Mid-Atlantic Coastal Plain analysis unit currently exhibits very low resiliency for the eastern black rail. It supports fewer birds and has fewer occupied habitat patches than the Southeast Coastal Plain analysis unit. The remaining three analysis units, New England, Appalachians, and Central Lowlands, currently demonstrate no resiliency. These three units historically did not support abundances of the eastern black rail as high as the other four analysis units. There are currently insufficient detections to model these units; recent detections (2011 to present) are fewer than 20 birds for each analysis unit. An evaluation of current status information yields that eastern black rails are effectively extirpated from portions of the New England, Appalachians, and Central Lowlands analysis units that were once occupied. Lastly, resiliency is unknown for the Central America and Caribbean portion of the eastern black rail's range. However, the sparsity of historical and current records, including nest records, indicates that resiliency outside of the contiguous United States is likely low. All recent sightings in Central America and the Caribbean have been of adult eastern black rails; there are no reports of nests, chicks, or juveniles.

To assess current representation, we evaluated both habitat variability and latitudinal variability. When considering habitat variability, we determined the eastern black rail has a level of adaptive potential by using similar habitats elements (*i.e.,* higher elevation areas within wetlands with dense vegetation, moist soils, and shallow flood depth) within different wetland types within analysis units. However, there may be unknown factors that influence and affect the eastern black rail's use of wetland habitat, as not all apparently suitable wetland habitat is currently occupied. While the New England, Appalachians, and Central Lowlands analysis units have experienced wetland habitat loss and fragmentation, wetland habitats continue to be present on the landscape. However, the eastern black rail is not being found in these three analysis units. Historically, the eastern black rail had a wide distribution and exhibited latitudinal variability. However, as discussed above, three of the analysis units (New England, Appalachians, and Central Lowlands) are effectively extirpated, and, therefore, this latitudinal variability (higher latitudes) has effectively been lost to the subspecies. Therefore, even though the eastern black rail still occurs at varying latitudes, we conclude that the subspecies currently has reduced representation across its range.

Despite having a wide distribution, the eastern black rail currently has low redundancy across its range. With the loss of three analysis units in upper latitudes of the range, the subspecies has reduced ability to withstand catastrophic events, such as hurricanes and tropical storms, which could impact the lower latitudinal analysis units. Given the lack of habitat connectivity, and patchy and localized distribution, it would be difficult for the subspecies to recover from a catastrophic event in one or more analysis units.

Risk Factors for Eastern Black Rail

The Act directs us to determine whether any species is an endangered species or a threatened species because of any factors affecting its continued existence. Under section 4(a)(1) of the Act, we may list a species based on (A) The present or threatened destruction, modification, or curtailment of its habitat or range; (B) overutilization for commercial, recreational, scientific, or educational purposes; (C) disease or predation; (D) the inadequacy of existing regulatory mechanisms; or (E) other natural or manmade factors affecting its continued existence.

We reviewed the potential risk factors (*i.e.,* threats or stressors) that are affecting the eastern black rail now and into the future. In this proposed rule, we will discuss in detail only those threats that we conclude are driving the status and future viability of the species. The primary threats to eastern black rail are: (1) Habitat fragmentation and conversion, resulting in the loss of wetland habitats across the range (Factor A); (2) sea level rise and tidal flooding (Factors A and E); (3) incompatible land management practices (*i.e.,* fire management, grazing, and haying/mowing) (Factors A and E); and (4) stochastic events (*e.g.,* extreme flooding, hurricanes) (Factor E). Human disturbance, such as birders using playback calls of black rail vocalizations (Factor B), is also a concern for the species. Additional stressors to the species (including oil and chemical spills and environmental contaminants (Factor E); disease, specifically West Nile virus (Factor C); and altered food webs resulting from invasive species (fire ants, feral pigs, mongoose, and exotic reptiles) introductions (Factor C)) are discussed in the SSA report (Service 2018, entire). However, although these additional stressors may be having localized impacts, they are not the primary drivers of the status of the subspecies, and so we do not discuss them in detail in this document. We also reviewed the conservation efforts being undertaken for the subspecies. No existing regulatory mechanisms adequately address these threats to the eastern black rail such that it does not warrant listing under the Act (Factor D).

Habitat Fragmentation and Conversion

The eastern black rail is a wetland-dependent bird requiring dense emergent cover and extremely shallow water depths (less than 6 cm) over a portion of the wetland-upland interface to support its resource needs. Grasslands and their associated palustrine (freshwater) and estuarine wetland habitats have experienced significant loss and conversion since European settlement (Bryer, Maybury, Adams, and Grossman 2000, p. 232; Noss, LaRoe, III, and Scott 1995, pp. 57–76, 80–84; Hannah, Carr, and Lankerani 1995, pp. 137, 151). Approximately 50 percent (greater than 100 million acres) of the wetlands in the conterminous United States have been lost over the past 200 years; the primary cause of this loss was conversion for agricultural purposes (Dahl T. E. 1990, p. 9). Wetland losses for the States within the eastern black rail's historical range have been from 9 percent to 90 percent, with a mean of 52 percent (Dahl T. E. 1990, p. 6). Similarly, most of the native grassland/prairie habitats associated with eastern black rail habitat have been lost since European settlement (Sampson and Knopf 1994, pp. 418–421).

The eastern black rail also uses the transition zone (ecotone) between emergent wetlands and upland grasslands. These transitional areas are critical to eastern black rails, as they provide refugia during high-water events caused by precipitation or tidal flooding. These habitat types have also experienced significant declines over time (Sampson and Knopf 1994, pp. 418–421), with many areas within the eastern black rail's historical range losing over 90 percent of their prairie habitat. Most of this loss can be attributed to agricultural conversion (Sampson and Knopf 1994, pp. 419–420). Many of the freshwater wetlands associated with these grasslands were emergent and ephemeral in nature, and would have supported eastern black rails. For example, in Texas, between the 1950s and 1990s, 235,000 acres, or 29 percent, of freshwater wetlands within Gulf coastal prairie were converted primarily to agriculture. This value does not include the numbers of

upland prairie acres that were also converted (Moulton, Dahl, and Dahl 1997, entire).

Despite regulatory efforts to minimize the loss of wetland habitats, losses and alterations continue to occur to habitats occupied by the eastern black rail. Marshes continue to face substantial impacts from dikes, impoundments, canals, altered freshwater inflows, erosion, relative sea level rise, tidal barriers, tropical storm events, and other natural and human-induced factors (Adam 2002, entire; Turner 1990, entire; Kennish 2001, entire; Gedan *et al.* 2009, entire; Tiner 2003, p. 513). Estuarine emergent wetland losses are mostly attributable to conversion to open water through erosion (Dahl and Stedman 2013, p. 37), while freshwater emergent wetland losses appear to be the result of development (Dahl and Stedman 2013, p. 35). Because the rail is a wetland-dependent subspecies, the loss and alteration of palustrine and estuarine wetlands and associated grassland habitats have a negative impact.

Within the range of the eastern black rail, land use in the United States has affected and continues to affect groundwater and surface water resources (Johnston 1997, entire; McGuire 2014, pp. 1–2, 7, 9; Juracek and Eng 2017, pp. 1, 11–16; Barfield 2016, pp. 2–4). The conversion of wetland habitat, largely for agricultural use, was mentioned above. However, habitat conversion and land use directly and indirectly affect water resources, largely tied to the interaction of groundwater and surface water resources (Glazer and Likens 2012, entire; Sophocleous 2002, entire; Tiner R. W. 2003, p. 495; U.S. Geological Survey (USGS) 2016a, unpaginated; Konikow L. F. 2015, entire).

Where groundwater resources are hydraulically connected to surface water resources, these connections can either be unconfined (water table) or confined (springs) aquifers. In unconfined aquifers, locations can support surface features such as wetlands or riparian habitats where groundwater is located near the land surface (Haag and Lee 2010, pp. 16–19, 21–24). Lowering of groundwater through withdrawals via wells or ditches can cause wetlands to shrink or become dry. Withdrawals of confined aquifers can lead to the drying of springs and associated wetland habitats (Weber and Perry 2006, p. 1255; Metz 2011, p. 2). In the central and southcentral United States, high groundwater use, largely attributed to cropland irrigation and other human activities, may affect the long-term sustainability of water resources, including causing wetland loss (McGuire 2014, entire; Juracek 2015, entire; Juracek and Eng 2017, entire; Juracek, Eng, Carlisle, and Wolock 2017, entire; Perkin *et al.* 2017, entire).

Human modifications to the environment have led to significant changes in vegetation. Some of these modifications include water withdrawals and the construction of levees, drainage canals, and dams. Changes to native vegetation can result in changes to the structure of the habitat (*e.g.,* conversion from emergent to scrub-shrub wetlands, wetland into upland habitat, or vice-versa), as well as the introduction of invasive plant species (*e.g., Phragmites australis;* Crain, Gedan, and Dionne 2009, p. 157). Given the narrow habitat preferences of the eastern black rail (*i.e.,* very shallow water and dense emergent vegetation), small changes in the plant community can easily result in habitat that is not suitable for the subspecies.

Subsidence (lowering of the earth's surface) is caused by the withdrawal of liquids from below the ground's surface, which relieves supporting hydraulic pressure of liquids by the long-term compression of unconsolidated, geologically deposited sediments, or by other geologic processes (Day *et al.* 2011, p. 645; Karegar, Dixon, and Engelhart 2016, p. 3129; White and Tremblay 1995, entire). Localized subsidence can occur with groundwater withdrawals where withdrawal rates are greater than the aquifer recharge rates (White and Tremblay 1995, pp. 794–804; Morton, Bernier, and Barras 2006, p. 271) or where liquids associated with hydrocarbon extraction have caused the lowering of ground elevations (Morton, Bernier, and Barras 2006, p. 263). On the Atlantic coast, an area of rapid subsidence exists between Virginia and South Carolina, where the rate of subsidence has doubled due to increased groundwater withdrawals (Karegar, Dixon, and Engelhart 2016, pp. 3131–3132). An extreme example of subsidence in the United States is along the Gulf of Mexico coast, where both subsurface liquid withdrawal and sediment consolidation have significant influence on coastal wetland habitats (Turner 1990, pp. 93–94, 96, 98; Morton, Bernier, and Barras 2006, entire; White and Tremblay 1995, pp. 795–804). Subsidence combined with sea level rise is referred to as relative sea level rise, and the Gulf of Mexico has the highest relative sea level rise rates in the conterminous United States, leading to significant losses in wetland habitats (NOAA 2018, unpaginated).

Subsidence can affect the eastern black rail and its habitat in both fresh and tidal wetlands. Vegetated wetland habitats used by the eastern black rail can be converted to unvegetated open water or mudflats through drowning of vegetation or erosion from increased wave energy. Locations with higher subsidence rates can experience increased tidal flooding sooner than areas with lower subsidence rates. The effect of increased tidal flooding will change black rail habitat over time (*i.e.,* marsh migration) but can have direct impacts on black rail reproduction when flooding occurs during the breeding season.

Extensive drainage features have been created or modified in the United States, primarily to reduce flooding to protect agricultural land or infrastructure. These include excavation of drainage ditches, channelization of rivers and streams, construction of levees and berms, tidal restrictions, and diversions of waterways. Extensive areas of Florida were channelized in an effort to drain wetlands in the early 1900s (Renken *et al.* 2005, pp. 37–56). Most, if not all, of the coastal plain in Texas contains existing drainage features that were either created or modified to reduce flooding of agricultural lands and associated communities. These features can reduce or eliminate the hydroperiod to sustain associated wetlands by removing water rapidly off the landscape (Blann, Anderson, Sands, and Vondracek 2009, pp. 919–924). In glaciated geographies such as the Midwest, drain tiles and other methods have been used to drain wetlands to improve conditions for agricultural production (Blann, Anderson, Sands, and Vondracek 2009, pp. 911–915). Approximately 90 percent of the salt marshes on the northeast United States coast have been ditched to control mosquitoes (Bourn and Cottam 1950, p. 15; Crain, Gedan, and Dionne 2009, pp. 159–161). Ditching increases the area of the marsh that is inundated as well as drained (Crain, Gedan, and Dionne 2009, p. 160; Daiber 1986, in Crain *et al.* 2009, p. 160).

Levees have been constructed in flood-prone areas to minimize damage to crops and local communities. Levees can modify the duration, intensity, and frequencies of hydroperiods associated with riparian and tidal wetlands and thus change the nature and quality of wetland habitat, including that used by marsh-dependent species (Kennish 2001, p. 734; Adam 2002, p. 46; Walker, Coleman, Roberts, and Tye 1987, pp. 197–198; Bryant and Chabreck 1998, p. 421; Kuhn, Mendelssohn, and Reed 1999, p. 624). They also facilitate the movement patterns of mesopredators and improve their access to wetland

habitats (Frey and Conover 2006, pp. 1115–1118). Navigation channels and their management have had extensive impacts to tidal wetlands (*e.g.,* in Louisiana). These channels can modify the vegetation community of associated wetlands and can increase the frequency of extreme high tide or high flow events by providing a more direct connection to the influencing water body (Turner 1990, pp. 97–98; Kennish 2001, pp. 734–737; Bass and Turner 1997, pp. 901–902). Tidal restrictions, such as water control structures, bridges, and culverts built for the purposes of flood protection, restricting salt water intrusion, and modification of vegetation, have also affected coastal salt marshes.

All of these alterations to drainage affect the hydrology, sediment and nutrient transport, and salinities of wetland habitats used by the eastern black rail, which in turn affect the habitat's composition and structure. These changes can lead to instability in the duration and intensity of hydroperiods, affect associated vegetation communities, and impact the ability of marsh habitats to adapt to changing conditions. This ultimately affects the ability of the habitat to support populations of the eastern black rail, by exposing eastern black rails to unsuitable water regimes or converted habitats.

Sea Level Rise and Tidal Flooding

Representative concentration pathways (RCPs) are the current set of scenarios used for generating projections of climate change; for further discussion, please see the SSA report (Service 2018, entire). Recent studies project global mean sea level rise to occur within the range of 0.35 to 0.95 meters (m) (1.14 to 3.11 feet (ft)) for RCP 4.5, and within the range of 0.5 to 1.3 m (1.64 to 4.27 ft) for RCP 8.5, by 2100 (Sweet *et al.* 2017, p. 13). The Northeast Atlantic and western Gulf of Mexico coasts are projected to have amplified relative sea level rise greater than the global average under almost all future sea level rise scenarios through 2100 (Sweet *et al.* 2017, p. 43).

Sea level rise will amplify coastal flooding associated with both high tide floods and storm surge (Buchanan, Oppenheimer, and Kopp 2017, p. 6). High tide flooding currently has a negative impact on coastal ecosystems and annual occurrences of high tide flooding have increased five- to ten-fold since the 1960s (Reidmiller *et al.* 2018, p. 728). In addition, extreme coastal flood events are projected to increase in frequency and duration, and the annual number of days impacted by nuisance flooding is increasing, along the Atlantic and Gulf Coasts (Sweet *et al.* 2017, p. 23). Storm surges from tropical storms will travel farther inland.

Along the Texas Gulf Coast, relative sea level rise is twice as large as the global average (Reidmiller *et al.* 2018, p. 969). Over the past 100 years, local sea level rise has been between 12.7 to 43.2 cm (5 to 17 in), resulting in an average loss of 73 hectares (180 acres) of coastline per year, and future sea level rise is projected to be higher than the global average (Reidmiller *et al.* 2018, p. 972; Runkle *et al.* 2017b, p. 4). In South Carolina, sea level has risen by 3.3 cm (1.3 in) per decade, nearly double the global average, and the number of tidal flood days has increased (Runkle *et al.* 2017c, p. 4). Projected sea level rise for South Carolina is higher than the global average, with some projections indicating sea level rise of 1.2 m (3.9 ft) by 2100 (Runkle *et al.* 2017c, p. 4). The number of tidal flood days are projected to increase and are large under both high and low emissions scenarios (Runkle *et al.* 2017c, p. 4). Similarly, in Florida, sea level rise has resulted in an increased number of tidal flooding days, which are projected to increase into the future (Runkle *et al.* 2017a, p. 4).

Even with sea level rise, some tidal wetlands may persist at slightly higher elevations (*i.e.,* ''in place'') for a few decades, depending on whether plant primary productivity and soil accretion (which involves multiple factors such as plant growth and decomposition rates, build-up of organic matter, and deposition of sediment) can keep pace with the rate of sea level rise, thus avoiding ''drowning'' (Kirwan, Temmerman, Skeehan, Guntenspergen, and Fagherazzi 2016, entire). Under all future projections, however, the rate of sea level rise increases over time (Sweet, Horton, Kopp, LeGrande, and Romanou 2017, pp. 342–345). A global analysis found that in many locations salt marsh elevation change did not keep pace with sea level rise in the last century and even less so in the past two decades, and concluded that the rate of sea level rise in most areas will overwhelm the capacity of salt marshes to persist (Crosby *et al.* 2016, entire). Under this analysis, based on RCP 4.5 and RCP 8.5 scenarios and assuming continuation of the average rate of current accretion, projected marsh drowning along the Atlantic coast at late century (2081–2100) ranges from about 75 to 90 percent (Crosby *et al.* 2016, p. 96, figure 2). The accretion balance (reported accretion rate minus local sea level rise) is negative for all analyzed sites in the Louisiana Gulf Coast and for all but one site in the mid-Atlantic area (figures 3c and 3d in Crosby *et al.* 2016, p. 97); both of these areas are part of the range of the eastern black rail.

Sea level rise will reduce the availability of suitable habitat for the eastern black rail and overwhelm habitat persistence. Sea level rise and its effects (*e.g.,* increased flooding and inundation, salt water intrusion) may affect the persistence of coastal or wetland plant species that provide habitat for the eastern black rail (Morris, Sundareshwar, Nietch, Kjerfve, and Cahoon 2002, p. 2876; Warren and Niering 1993, p. 96). Increased high tide flooding from sea level rise, as well as the increase in the intensity and frequency of flooding events, will further impact habitat and directly impact eastern black rails through nest destruction and egg loss (Sweet *et al.* 2017, pp. 35–44).

Land Management Practices (Fire Management, Haying and Mowing, and Grazing)

Fire Management

Fire suppression has been detrimental to habitats used by the eastern black rail by allowing encroachment of woody plants. Without fire or alternate surrogate methods of disturbing woody vegetation such as mowing, the amount of preferred habitat for eastern black rails is expected to decrease in some regions, such as coastal Texas (Grace *et al.* 2005, p. 39). Therefore, prescribed (controlled) fire can maintain habitat for this subspecies at the desired seral stage (intermediate stages of ecological succession).

While fire is needed for the maintenance of seral stages for multiple rail species, the timing and frequency of the burns, as well as the specific vegetation types targeted, can lead to undesirable effects on rail habitats in some cases (Eddleman *et al.* 1988, pp. 464–465). Burning salt marshes during drought or while the marshes are not flooded can result in root damage to valuable cover plants (Nyman and Chabreck 1995, p. 138). Controlled burning of peat, or accumulated organic litter, when marshes are dry has resulted in marsh conversion to open water due to the loss of peat soils. Variations in soil type supporting the same plant species may lead to differing recovery times post-burn, and therefore potentially unanticipated delays in the recovery of black rail habitat (McAtee, Scifres, and Drawe 1979, p. 375). Simply shifting the season of burn may alter plant species dominance and the associated structure available to the eastern black rail, as is seen with spring fire conversion of chairmaker's bulrush

(*Schoenoplectus americanus*) to salt meadow cordgrass (*Spartina patens*) (Nyman and Chabreck 1995, p. 135).

Prescribed fire that occurs during critical time periods for the subspecies (*i.e.,* mating, egg-laying and incubation, parental care, and flightless molt) leads to mortality of eggs, chicks, juveniles, and molting birds. Fall and winter burns are more likely to avoid reproductive season impacts (Nyman and Chabreck 1995, p. 138).

Fire pattern can have profound effects on birds. Controlled burns can result in indirect rail mortality, as avian predators attracted to smoke are able to capture rails escaping these fires (Grace *et al.* 2005, p. 6). Because eastern black rails typically prefer concealment rather than flight to escape threats, the birds may attempt to escape to areas not affected by fire, such as wetter areas or adjacent areas not under immediate threat. Ring, expansive, or rapidly moving fires are therefore not conducive to rail survival (Grace *et al.* 2005, p. 9; Legare, Hill, and Cole 1998, p. 114). On the other hand, controlled burns designed to include unburned patches of cover may positively influence eastern black rail survival. For example, burning 90 percent of a 2,400-ac marsh in Florida resulted in direct mortality of at least 39 eastern black rails, whereas a mosaic of unburned vegetation patches 0.1 to 2.0 ac in size facilitated eastern black rail survival during a 1,600-ac controlled burn (Legare, Hill, and Cole 1998, p. 114). Prescribed fires that include patches of unburned habitat scattered throughout provide escape cover for wildlife, including, but not limited to, eastern black rails (Legare, Hill, and Cole 1998, p. 114). Unburned strips of vegetation bordering the inside perimeters of burn units also are believed helpful as escape cover from both fire and avian predators (Grace *et al.* 2005, p. 35). Coastal marshes that are burned in staggered rotations to create a mosaic of different seral stages or are burned less frequently will continue to provide cover for marsh species, such as the eastern black rail (Block *et al.* 2016, p. 16).

Haying and Mowing

Haying and mowing are used throughout the range of the eastern black rail. Haying and mowing maintain grasslands by reducing woody vegetation encroachment. These practices can have detrimental impacts to wildlife when used too frequently or at the wrong time of year. For example, at Quivira NWR in Kansas, haying at a frequency of once or twice per year resulted in no occupancy of hayed habitats by eastern black rails during the following year (Kane 2011, pp. 31–33). Further, haying or mowing timed to avoid sensitive stages of the life cycle (nesting and molt period) would be less detrimental to eastern black rails (Kane 2011, p. 33). Mowing during the spring or summer will disrupt reproductive efforts of migratory birds. Eastern black rails reproduce from approximately mid-March through August, and mowing during this time period disturbs eastern black rail adults and can potentially crush eggs and chicks. As with fire, when mowing is alternated to allow areas of unmown habitat at all times, the site can continue to support cover-dependent wildlife.

Grazing

Cattle grazing occurs on public and private lands throughout the range of the eastern black rail. Because eastern black rails occupy drier areas in wetlands and require dense cover, these birds are believed to be more susceptible to grazing impacts than other rallids (Eddleman, Knopf, Meanley, Reid, and Zembal 1988, p. 463). Based on current knowledge of grazing and eastern black rail occupancy, the specific timing, duration, and intensity of grazing will result in varying impacts to the eastern black rail and its habitat. Light-to-moderate grazing may be compatible with eastern black rail occupancy under certain conditions, while intensive or heavy grazing is likely to have negative effects on eastern black rails and the quality of their habitat. It may benefit black rail habitat (or at least not be detrimental) when herbaceous plant production is stimulated (Allen-Diaz, Jackson, Bartolome, Tate, and Oates 2004, p. 147) and the necessary overhead cover is maintained. In Kansas, eastern black rails were documented in habitats receiving rotational grazing during the nesting season that preserved vegetation canopy cover (Kane 2011, pp. 33–34). Black rails occur in habitats receiving light-to-moderate grazing (*i.e.,* Kane 2011; Richmond, Tecklin, and Beissinger 2012; Tolliver 2017). These results suggest that such grazing is an option for providing disturbance, which may promote black rail occupancy. However, cattle grazing at high intensities may not favor black rail occupancy, as heavy grazing, or overgrazing, reduces the wetland vegetation canopy cover (Richmond, Chen, Risk, Tecklin, and Bessinger 2010, p. 92).

In addition to the loss of vegetation cover and height (Kirby, Fessin, and Clambey 1986, p. 496; Yeargan 2001, p. 87; Martin J. L. 2003, p. 22; Whyte and Cain 1981, p. 66), intensive grazing may also have direct negative effects on eastern black rails by livestock disturbing nesting birds or even trampling birds and nests (Eddleman, Knopf, Meanley, Reid, and Zembal 1988, p. 463). Heavy disturbance from grazing can also lead to a decline in eastern black rail habitat quality.

Stochastic Events (Extreme Weather Events)

Extreme weather effects, such as storms associated with frontal boundaries or tropical disturbances, can also directly affect eastern black rail survival and reproduction, and can result in direct mortality. Tropical storms and hurricanes are projected to increase in intensity and precipitation rates along the North Atlantic coast and Gulf Coast (Kossin *et al.* 2017, pp. 259–260; Bender *et al.* 2010, p. 458). The frequency of Category 4 and 5 tropical storms is predicted to increase despite an overall decrease in the number of disturbances (Bender *et al.* 2010, pp. 457–458). Storms of increased intensity, which will have stronger winds, higher storm surge, and increased flooding, cause significant damage to coastal habitats by destroying vegetation and food sources, as well as resulting in direct mortality of birds. For example, Hurricane Harvey flooded San Bernard NWR in Texas with storm surge, which was followed by runoff flooding from extreme rainfall. This saltmarsh, occupied by eastern black rails, was inundated for several weeks (Woodrow 2017, pers. comm.). Increases in storm frequency, coupled with sea level rise, may result in increased predation exposure of adults and juveniles if they emerge from their preferred habitat of dense vegetation (Takekawa *et al.* 2006, p. 184). Observations show predation upon California black rails during high tides when the birds had minimal vegetation cover in the flooded marsh (Evens and Page 1986, p. 108).

Weather extremes associated with climate change can have direct effects on the eastern black rail, leading to reduced survival of eggs, chicks, and adults. Indirect effects on the eastern black rail are likely to occur through a variety of means, including long-term degradation of both inland and coastal wetland habitats. Other indirect effects may include loss of forage base of wetland-dependent organisms. Warmer and drier conditions will most likely reduce overall habitat quality for the eastern black rail. Because eastern black rails tolerate a narrow range of water levels and variation within those water levels, drying as a result of extended droughts may result in habitat becoming unsuitable, either on a permanent or

temporary basis (Watts 2016, p. 120). Extreme drought or flooding conditions may also decrease bird fitness or reproductive success by reducing the availability of the invertebrate prey base (Davidson L. M. 1992a, p. 129; Hands, Drobney, and Ryan 1989, p. 5). Lower rates of successful reproduction and recruitment lead to further overall declines in population abundance and resiliency to withstand stochastic events such as extreme weather events. The vulnerability of the eastern black rail to the effects of climate change depends on the degree to which the subspecies is susceptible to, and unable to cope with, adverse environmental changes due to long-term weather trends and more extreme weather events.

Human Disturbance

Human disturbance can stress wildlife, resulting in changes in distribution, behavior, demography, and population size (Gill 2007, p. 10). Activities such as birding, birdwatching, and hiking, have been shown to disturb breeding and nesting birds. Disturbance may result in nest abandonment, increased predation, and decreased reproductive success, and in behavioral changes in non-breeding birds. Singing activity of male birds declines in sites that experience human intrusion, although the response varies among species and level of intrusion (Gutzwiller *et al.* 1994, p. 35). At the Tishomingo NWR in Oklahoma, recreational disturbances of migratory waterbirds accounted for 87 percent of all disturbances (followed by natural disturbances (10 percent) and unknown disturbances (3 percent)) (Schummer and Eddleman 2003, p. 789).

Many birders strive to add rare birds to their ''life list,'' a list of every bird species identified within a birder's lifetime. Locations of rare birds are often posted online on local birding forums or eBird, leading to an increased number of people visiting the location in an attempt to see or hear the bird. Due to its rarity, the eastern black rail is highly sought after by birders (Beans and Niles 2003, p. 96). Devoted birders may go out of their way to add an eastern black rail to their life list (McClain 2016, unpaginated). The efforts of birders to locate and identify rare birds, such as the eastern black rail, can have both positive and negative impacts on the bird and its habitat. Birders play an especially important role in contributing to citizen science efforts, such as the eBird online database, and have helped further our understanding of species' distributions and avian migration ecology in crucial ways (Sullivan *et al.* 2014, entire). Birders have provided valuable location information for eastern black rails that might have otherwise gone undetected and have made these records publicly available (see eBird's black rail account; eBird 2017, unpaginated).

While amateur and professional birding have made important contributions to our understanding of rare species like the eastern black rail, some birders may be more likely to pursue a sighting of a rare bird, as they may perceive the benefits of observing the bird to outweigh the impacts to the bird (Bireline 2005, pp. 55–57). As a result, methods may be employed to increase the likelihood of observing a rare bird, including the use of vocalized calls or audio recordings, as is the case for eastern black rails, or approaching birds in order to get a sighting (Beans and Niles 2003, p. 96; Bireline 2005, p. 55). These methods have the potential to disturb nesting birds or trample nests or eggs, and may lead to increased predation (Beans and Niles 2003, p. 96).

With the prevalence of smartphones, the use of playback calls has increased as recordings of birds are readily available on the internet, and birding websites and geographic site managers (State, Federal, or nongovernmental organizations) often provide guidance on the use of playback calls (Sibley 2001, unpaginated). The American Birding Association's Code of Birding Ethics encourages limited use of recordings and other methods of attracting birds, and recommends that birders never use such methods in heavily birded areas or for attracting any species that is endangered, threatened, of special concern, or rare in the local area (American Birding Association 2018, unpaginated). While most birders likely follow these ethical guidelines, using playback calls of eastern black rail vocalizations in attempts to elicit responses from the birds and potentially lure them into view is commonly done outside of formal eastern black rail surveys (see comments for eastern black rail detections on eBird; eBird 2017, unpaginated). Due to the rarity of the eastern black rail, a few cases of trespassing are known from people looking for the bird. Trespassing has been documented on private lands and in areas on public lands specifically closed to the public to protect nesting eastern black rails (Hand 2017, pers. comm.; Roth 2018, pers. comm.). Trespassing may not only disturb the bird, but can also result in trampling of the bird's habitat, as well as of eggs and nests. Some State resource managers and researchers have expressed concern that releasing locations of eastern black rail detections may increase human disturbance and harassment of the subspecies.

Synergistic Effects

It is likely that several of these stressors are acting synergistically or additively on the subspecies. The combination of multiple stressors may be more harmful than a single stressor acting alone. For the eastern black rail, a combination of stressors result in habitat loss, reduced survival, reduced productivity, and other negative impacts on the subspecies. Sea level rise, coupled with increased tidal flooding, results in the loss of the high marsh habitat required by the subspecies. Land management activities, such as prescribed burning, that occur in these habitats will further exacerbate impacts, especially if conducted during sensitive life-history periods (nesting, brood-rearing, or flightless molt). If these combined stressors occur too often within and across generations, they will limit the ability of the subspecies to maintain occupancy at habitat sites, which would become lost or unsuitable for the subspecies and limit its ability to colonize other previously occupied sites or new sites. For example, tidal marshes in Dorchester County, Maryland, in the Chesapeake Bay (specifically the areas of Blackwater NWR and Elliott Island) served as a former stronghold for the eastern black rail. These marshes have and continue to experience marsh erosion from sea level rise, prolonged flooding, a lack of a sufficient sediment supply, and land subsidence, as well as habitat destruction from nutria (now eradicated) and establishment of the invasive common reed (*Phragmites australis*). On Elliott Island, high decadal counts of eastern black rails have declined from the hundreds in the 1950s to the single digits in recent years (one eastern black rail detected from 2012–2015, and zero in 2016) (Watts 2016, p. 61).

Regulations and Conservation Efforts

Federal Protections

The Migratory Bird Treaty Act of 1918 (MBTA; 16 U.S.C. 703 *et seq.*) provides specific protection for the eastern black rail, which is a migratory bird under the statute. The MBTA makes it illegal, unless permitted by Federal regulation, ''by any means or in any manner, to pursue, hunt, take, capture, kill, attempt to take, capture, or kill, possess, offer for sale, sell, offer to barter, barter, offer to purchase, purchase, deliver for shipment, ship, export, import, cause to be shipped, exported, or imported, deliver for transportation, transport or cause to be transported, carry or cause

to be carried, or receive for shipment, transportation, carriage, or export, any migratory bird, [or] any part, nest, or egg of any such bird . . . '' (16 U.S.C. 703(a)). Through issuance of permits for scientific collecting of migratory birds, the Service ensures that best practices are implemented for the careful capture and handling of eastern black rails during banding operations and other research activities. However, the December 22, 2017, Solicitor's Opinion, Opinion M–37050, concludes that consistent with the text, history, and purpose of the MBTA, the statute's prohibitions on pursuing, hunting, taking, capturing, killing, or attempting to do the same apply only to direct and affirmative actions that have as their purpose the taking or killing of migratory birds, their nests, or their eggs. Therefore, take of an eastern black rail, its chicks, or its eggs that is incidental to another lawful activity does not violate the MBTA. Furthermore, the MBTA does not address the major stressors affecting the eastern black rail, which include habitat alteration and sea level rise. Given that only intentional take is prohibited under the MBTA and the habitat-based stressors to the black rail are not regulated, this law does not provide sufficient substantive protections to the eastern black rail.

Section 404 of the Clean Water Act (CWA; 33 U.S.C. 1251 *et seq.*) and section 10 of the Rivers and Harbors Appropriation Act of 1899 (33 U.S.C. 403) are intended to protect jurisdictional wetlands from excavation and filling activities. The U.S. Army Corps of Engineers, in conjunction with the U.S. Environmental Protection Agency, administers permits that require avoidance, minimization and compensation for projects affecting wetlands. Projects that cannot avoid impacts to wetlands must compensate for their impacts through a restoration enhancement or preservation action for the equivalent functional loss. Mitigation banks are often used, in which actions at a specific location compensate for impacts in a considerably wider service area. However, the wetland types affected are not always the same types that are restored or enhanced, and there is considerable uncertainty that current mitigation practices would support the presence of black rails.

State Protections

The black rail is listed as endangered under State law by seven States within the subspecies' range: Delaware, Illinois, Indiana, Maryland, New Jersey, New York, and Virginia. The species was formerly listed as endangered in Connecticut, but was considered extirpated during the last listing review based on extant data and was subsequently delisted. Protections are afforded to wildlife listed as either endangered or threatened by a State, but those protections vary by State. Although we have no information as to the effectiveness of these State regulations as they pertain to the conservation of the eastern black rail, one benefit of being State-listed is to bring heightened public awareness of the bird's existence.

In Delaware, the importation, transportation, possession, or sale of any endangered species or parts of endangered species is prohibited, except under license or permit (title 7 of the Delaware Code, sections 601–605). Illinois also prohibits the possession, take, transport, selling, and purchasing, or giving, of a listed species, and allows incidental taking only upon approval of a conservation plan (Illinois Compiled Statutes, chapter 520, sections 10/1–10/11). Indiana prohibits any form of possession of listed species, including taking, transporting, purchasing, or selling, except by permit (title 14 of the Indiana Code, article 22, chapter 34, sections 1–16 (I.C. 14–22–34–1 through 16)). Listed species may be removed, captured, or destroyed only if the species is causing property damage or is a danger to human health (I.C. 14–22–34–16). Similar prohibitions on the possession of a listed species in any form, except by permit or license, are in effect in Maryland (Code of Maryland, Natural Resources, section 10–2A–01–09), New Jersey (title 23 of the New Jersey Statutes, sections 2A–1 to 2A–15), New York (New York's Environmental Conservation Law, article 11, title 5, section 11–0535; title 6 of the New York Codes, Rules and Regulations, chapter I, part 182, sections 182.1–182.16), and Virginia (Code of Virginia, title 29.1, section 29.1, sections 563–570 (29.1–563–570)). Violations of these statutes typically are considered misdemeanor, generally resulting in fines or forfeiture of the species or parts of the species and the equipment used to take the species. Some States also have provisions for nongame wildlife and habitat preservation programs (*e.g.,* title 7 of the Delaware Code, sections 201–204; Code of Maryland, Natural Resources, section 1–705). For example, in Maryland, the State Chesapeake Bay and Endangered Species Fund (Code of Maryland, Natural Resources, section 1–705) provides funds to promote the conservation, propagation, and habitat protection of nongame, threatened, or endangered species.

Black rail is listed as a ''species in need of conservation'' in Kansas, which requires conservation measures to attempt to keep the species from becoming a State-listed endangered or threatened species (Kansas Department of Wildlife, Parks and Tourism 2018, unpaginated). Black rail also is listed as a species of ''special concern'' in North Carolina and requires monitoring (North Carolina Wildlife Resources Commission 2014, p. 6). The species is identified as a ''species of greatest conservation need'' in 19 State wildlife action plans as of 2015 (U.S. Geological Survey (USGS) 2017, unpaginated). However, no specific conservation measures for black rail are associated with these listings, and most are unlikely to address habitat alteration or sea level rise.

Other Conservation Efforts

The Atlantic Coast Joint Venture (ACJV) recently decided to focus efforts on coastal marsh habitat and adopted three flagship species, one being the eastern black rail, to direct conservation attention in this habitat. As part of this initiative, the ACJV Black Rail Working Group has drafted population goals for the eastern black rail and is developing habitat delivery options within the Atlantic Flyway. In addition, the ACJV is coordinating the development of a ''saltmarsh conservation business plan.'' The business plan will identify stressors to Atlantic and Gulf Coast tidal marshes and the efforts needed to conserve these habitats to maintain wildlife populations. The business plan is expected to be completed in late 2018.

The Gulf Coast Joint Venture (GCJV) has had the eastern black rail listed as a priority species since 2007 (Gulf Coast Joint Venture 2005). As a priority species, the black rail is provided consideration during the review of North American Wetland Conservation grant applications (Vermillion 2018, pers. comm.). Although detailed planning for the eastern black rail is not yet complete, the subspecies is considered in coastal marsh habitat delivery efforts discussed by GCJV Initiative Teams. Eastern black rails are believed to benefit from a plethora of coastal marsh habitat delivery efforts of GCJV partners, including projects authorized under the North American Wetland Conservation Act (16 U.S.C. 4401 *et seq.*), the Coastal Wetlands Planning, Protection and Restoration Act (16 U.S.C. 3951 *et seq.*), and the Service's Coastal Program, as well as management actions on State and Federal refuges and wildlife

management areas. Eastern black rails will benefit when projects conserve, enhance, or restore suitable wetland habitat and when management practices, such as the timing of prescribed burns and brush-clearing activities, are compatible with the life history of the subspecies.

In November 2016, the Texas Parks and Wildlife Department, in partnership with the Texas Comptroller's Office, initiated the Texas Black Rail Working Group (Shackelford 2018, pers. comm.). The main purpose of the group is to provide a forum for collaboration between researchers and stakeholders to share information about what is known about the species, identify information needs, and support conservation actions (see discussion under Critical Habitat, below).

Future Scenarios

As discussed above, we define viability as the ability of a species to sustain populations in the wild over time. To help address uncertainty associated with the degree and extent of potential future stressors and their impacts on the eastern black rail's needs, we applied the 3Rs using five plausible future scenarios. We devised these five scenarios by identifying information on the primary stressors anticipated to affect the subspecies into the future: habitat loss, sea level rise, groundwater loss, and incompatible land management practices. These scenarios represent a realistic range of plausible future scenarios for the eastern black rail.

We used the results of our occupancy model to create a dynamic site-occupancy, projection model that allowed us to explore future conditions under these scenarios for the Mid-Atlantic, Great Plains, Southeast Coastal Plain, and Southwest Coastal Plain analysis units. We did not project future scenarios for the New England, Appalachian, or Central Lowlands analysis units because, as discussed earlier in this document, we consider these analysis units to be currently effectively extirpated and do not anticipate that this will change in the future. Our projection model incorporated functions to account for changes in habitat condition (positive and negative) and habitat loss over time. The habitat loss function was a simple reduction in the total number of possible eastern black rail sites at each time step in the simulation by a randomly drawn percentage that was specified under different scenarios to represent habitat loss due to development or sea level rise. We used the change in ''developed'' land cover from the National Land Cover Database (NLCD 2011) to derive an annual rate of change in each region, and we used National Oceanic and Atmospheric Administration (NOAA) climate change and sea level rise projections to estimate probable coastal marsh habitat loss rates; storm surge was not modeled directly (Sweet *et al.*, 2017, p. entire; Parris, *et al.*, 2012, p. entire). In the Great Plains analysis unit, we used ground water loss rates, instead of sea level rise data, to represent permanent habitat loss in the region. The overall groundwater depletion rate was based on the average over 108 years (1900–2008) (Konikow L.F., 2013, p. entire).

Our five scenarios reflected differing levels of sea level rise and land management, and the combined effects of both. These future scenarios forecast site occupancy for the eastern black rail out to 2100, with time steps at 2043 and 2068 (25 and 50 years from present, respectively). Each scenario evaluates the response of the eastern black rail to changes in three primary risks we identified for the subspecies: habitat loss, sea level rise, and land management (grazing, fire, and haying). The trends of urban development and agricultural development remain the same, *i.e.,* follow the current trend, for all five scenarios. We ran 5,000 replicates of the model for each scenario. For a detailed discussion of the projection model methodology and the five scenarios, please refer to the SSA report (Service 2018, entire).

The model predicted declines in all analysis units across all five plausible future scenarios. Specifically, they predicted a high probability of complete extinction for all four analysis units under all five scenarios by 2068. The model predicted that, depending on the scenario, the Southeast Coastal Plain and Mid-Atlantic Coastal Plain analysis units would reach complete extinction between 35 and 50 years from the present; the Great Plains analysis unit would reach complete extinction between 15 to 25 years from the present; and the Southwest Coastal Plain analysis unit would reach complete extinction between 45 to 50 years from the present. Most predicted occupancy declines were driven by habitat loss rates that were input into each scenario. The model results exhibited little sensitivity to changes in the habitat quality components in the simulations for the range of values that we explored. For a detailed discussion of the model results for the five scenarios, please refer to the SSA report (Service 2018, entire).

Under our future scenarios, the Mid-Atlantic Coastal Plain, Great Plains, Southwest Coastal Plain, and Southeast Coastal Plain analysis units generally exhibited a consistent downward trend in the proportion of sites remaining occupied after the first approximately 25 years for all scenarios. Given that most of the predicted declines in eastern black rail occupancy were driven by habitat loss rates, and future projections of habitat loss are expected to continue and be exacerbated by sea level rise or groundwater loss, resiliency of the four remaining analysis units is expected to decline further. We expect all eastern black rail analysis units to have no resiliency by 2068, as all are likely to be extirpated by that time. We have no reason to expect the resiliency of eastern black rail outside the contiguous United States to improve in such a manner that will substantially contribute to its viability within the contiguous U.S. portion of the subspecies' range. Limited historical and current data, including nest records, indicate that resiliency outside of the contiguous United States will continue to be low into the future, or decline if habitat loss or other threats continue to impact these areas.

We evaluated representation by analyzing the latitudinal variability and habitat variability of the eastern black rail. Under our future scenarios, the Great Plains analysis unit is projected to be extinct within the next 15 to 25 years, which will result in the loss of that higher latitudinal representative unit for the subspecies. In addition, the three remaining analysis units (Mid-Atlantic Coastal Plain, Southwest Coastal Plain, and Southeast Coastal Plain) are predicted to decline and reach extinction within the next 50 years. Thus, the subspecies' representation will continue to decline.

The eastern black rail will have very limited redundancy in the future. The Great Plains analysis unit will likely be extirpated in 15 to 25 years, leading to further reduction in redundancy and resulting in only coastal populations of the eastern black rail remaining. Having only coastal analysis units remaining (and with even lower resiliency than at present) will further limit the ability of the eastern black rail to withstand catastrophic events, such flooding from hurricanes and tropical storms.

Please refer to the SSA report (Service 2018, entire) for a more detailed discussion of our evaluation of the biological status of the eastern black rail, the influences that may affect its continued existence, and the modeling efforts undertaken to further inform our analysis.

Determination

We have carefully assessed the best scientific and commercial information available regarding the past, present, and future threats to the eastern black rail. We propose to list the species as a threatened species throughout its range given the threats acting upon the subspecies currently and into the future.

When viewing historical occurrences on the State level compared to what is known of present distribution, the range contraction (from Massachusetts to New Jersey) and site abandonment (patchy coastal distribution) noted by Watts (2016, entire) appear to be occurring throughout the eastern United States. Over the past 10 to 20 years, reports indicate that populations have declined by 75 percent or greater. North of South Carolina, occupancy has declined by 64 percent and the number of birds detected has declined by 89 percent, equating to a 9.2 percent annual rate of decline (Watts 2016, p. 1). In relative terms, regional strongholds still exist for this subspecies; however, the best available scientific data suggest that the remaining strongholds support a relatively small total population size: an estimated 1,299 individuals on the upper Texas coast within protected areas prior to Hurricane Harvey, and an estimated 355 to 815 breeding pairs on the Atlantic Coast from New Jersey to Florida (including the Gulf Coast of Florida). There are no current population estimates from the interior States (Colorado, Kansas, or Oklahoma), although there are consistent populations of eastern black rails at Quivira NWR in Kansas and at least four sites in Colorado where the subspecies is encountered in the spring and summer. We have no information to indicate that the eastern black rail is present in large numbers in the Caribbean or Central America.

Based on our review of the available science, we identified the current threats to eastern black rail. Habitat loss and degradation (Factor A) as a result of sea level rise along the coast and ground and surface water withdrawals are having a negative impact on the eastern black rail now and will continue to impact this subspecies into the future. Incompatible land management techniques (Factor E), such as the application of prescribed fire, haying, mowing, and grazing, have negative impacts on the bird and its habitat, especially when conducted at sensitive times, such as the breeding season or the flightless molt period. Stochastic events (Factor E), such as flood events and hurricanes, can have significant impacts on populations and the subspecies' habitat. For example, the impacts of Hurricane Harvey on the Texas coastal populations of eastern black rail likely caused direct mortality as well as short-term habitat loss, as the hurricane occurred during the flightless molt period and resulted in the habitat being flooded for a long period of time. Human disturbance (Factor B) to the eastern black rail occurs throughout the bird's range and is driven by the bird's rarity and interest by the birding community to add this bird to individual life lists.

As we consider the future risk factors to the eastern black rail, we recognize that a complex interaction of factors have synergistic effects on the subspecies as a whole. In coastal areas, sea level rise, as well as increasing storm frequency and intensity and increased flood events (which are both associated with high tides and storms), will have both direct and indirect effects on the subspecies. Extensive patches of high marsh required for breeding are projected to be lost or converted to low marsh as a result of sea level rise. Demand for groundwater is increasing, which will reduce soil moisture and surface water, and thus negatively impact wetland habitat. We expect to see localized subsidence, which can occur when groundwater withdrawal rates are greater than the aquifer recharge rates. Also, warmer and drier conditions (associated with projected drought increases) will reduce overall habitat quality for the eastern black rail. Further, incompatible land management (such as fire application and grazing) will continue to negatively impact the subspecies throughout its range, especially if done during the breeding season or flightless molt period.

These stressors contribute to the subspecies' occupancy at sites and thus its population numbers. Some stressors have already resulted in permanent or long-term habitat loss, such the historical conversion of habitat to agriculture, while other factors may only affect sites temporarily, such as a fire or annually reduced precipitation. Even local but too frequent intermittent stressors, such as unusual high tides or prescribed fire, can cause reproductive failure or adult mortality, respectively, and thus reduce eastern black rail occupancy at a site and the ability of a site to allow for successful reproduction of individuals to recolonize available sites elsewhere. While these intermittent stressors allow for recolonization at sites, recolonization is based on productivity at other sites within a generational timescale for the subspecies. If these stressors, combined, occur too often within and across generations, they limit the ability of the subspecies to maintain occupancy at habitat sites and also limit its ability to colonize other previously occupied sites or new sites.

It is likely that several of these stressors are acting synergistically on the subspecies. Sea level changes, together with increasing peak tide events and higher peak flood events, wetland subsidence, past wetland filling and wetland draining, and incompatible land management (*e.g.,* prescribed fire and grazing), all limit the ability of the eastern black rail to persist in place or to shift to newly lightly flooded, ''just-right'' areas as existing habitats are impacted. These interacting threats all conspire to limit the ability of this subspecies to maintain and expand populations now and in the foreseeable future.

Our estimates of future resiliency, redundancy, and representation for the eastern black rail are further reduced from the current condition, consistent with this analysis of future threats. Currently, three analysis units are effectively extirpated, and four analysis units that continue to support populations of the eastern black rail all have low levels of resiliency. Given the projected future decreases in resiliency for these four analysis units, the eastern black rail will become more vulnerable to extirpation from ongoing threats, consequently resulting in concurrent losses in representation and redundancy. The range of plausible future scenarios of the eastern black rail all predict extirpation for all four analysis units by mid-century (2068) with the Great Plain analysis unit blinking out within 15 to 25 years (depending on the scenario). In short, our analysis of the subspecies' current and future conditions show that the population and habitat factors used to determine the resiliency, representation, and redundancy for the subspecies will continue to decline so that it is likely to become in danger of extinction throughout its range within the foreseeable future.

The term foreseeable future extends only so far as the Services can reasonably rely on predictions about the future in making determinations about the future conservation status of the species. Those predictions can be in the form of extrapolation of population or threat trends, analysis of how threats will affect the status of the species, or assessment of future events that will have a significant new impact on the species. The foreseeable future described here, uses the best available data and takes into account considerations such as the species' life

history characteristics, threat projection timeframes, and environmental variability, which may affect the reliability of projections. We also considered the time frames applicable to the relevant threats and to the species' likely responses to those threats in view of its life history characteristics. The foreseeable future for a particular status determination extends only so far as predictions about the future are reliable.

In cases where the available data allow for quantitative modelling or projections, the time horizon for such analyses does not necessarily dictate what constitutes the ''foreseeable future'' or set the specific threshold for determining when a species may be in danger of extinction. Rather, the foreseeable future can only extend as far as the Service can reasonably explain reliance on the available data to formulate a reliable prediction and avoid reliance on assumption, speculation, or preconception. Regardless of the type of data available underlying the Service's analysis, the key to any analysis is a clear articulation of the facts, the rationale, and conclusions regarding foreseeability.

We identify the foreseeable future for the eastern black rail to be 25 to 50 years from the present. We consider 25 to 50 years ''foreseeable'' in this case because this timeframe includes projections from our modeling efforts and takes into account the threats acting upon the eastern black rail and its habitat and how we consider the eastern black rail will respond to these threats in the future. For all five plausible scenarios, all analysis units exhibited a consistent downward trend in the proportion of sites remaining occupied after the first 25 years (by 2043), with extirpation for all analysis units by 2068. The Great Plains analysis unit is predicted to be extirpated by 2043. Given that future projections of habitat loss are expected to continue and be exacerbated by sea level rise and tidal flooding, resiliency of the four remaining analysis units is expected to decline further over the next 25 to 50 years.

Under the Act, the term ''species'' includes any subspecies of fish or wildlife or plants, and any distinct population segment of any species of vertebrate fish or wildlife which interbreeds when mature. The Act defines an endangered species as any species that is ''in danger of extinction throughout all or a significant portion of its range'' and a threatened species as any species that ''is likely to become an endangered species within the foreseeable future throughout all or a significant portion of its range.'' We find that the eastern black rail is likely to become endangered throughout all of its range within the foreseeable future. The eastern black rail meets the definition of threatened because it is facing threats across its range that have led to reduced resiliency, redundancy, and representation. Although the eastern black rail is not in danger of extinction throughout its range at present, we expect the subspecies to continue to decline into the future. We did not find that it is currently in danger of extinction throughout its range. Although the eastern black rail has experienced reductions in its numbers and seen a range contraction, this subspecies is still relatively widespread. It continues to maintain a level of representation in four analysis units, which demonstrates continued latitudinal variability across its range. These four analysis units are spread throughout most of the subspecies' range, providing for some level of redundancy. Although the resiliency in the four currently occupied analysis units is low, Florida and Texas remain strongholds for the subspecies in the Southeast and Southwest. The current condition of the subspecies still provides for resiliency, redundancy, and representation such that it is not at risk of extinction now throughout its range.

Under the Act and our implementing regulations, a species may warrant listing if it is endangered or threatened throughout all or a significant portion of its range. Because we have determined that the eastern black rail is likely to become an endangered species within the foreseeable future throughout its range, we find it unnecessary to proceed to an evaluation of potentially significant portions of the range. Where the best available information allows the Services to determine a status for the species rangewide, that determination should be given conclusive weight because a rangewide determination of status more accurately reflects the species' degree of imperilment and better promotes the purposes of the statute. Under this reading, we should first consider whether listing is appropriate based on a rangewide analysis and proceed to conduct a ''significant portion of its range'' analysis if, and only if, a species does not qualify for listing as either endangered or threatened according to the ''all'' language. We note that the court in *Desert Survivors* v. *Department of the Interior,* No. 16–cv–01165–JCS, 2018 WL 4053447 (N.D. Cal. Aug. 24, 2018), did not address this issue, and our conclusion is therefore consistent with the opinion in that case.

Therefore, on the basis of the best available scientific and commercial information, we propose to list the eastern black rail as a threatened species in accordance with sections 3(20) and 4(a)(1) of the Act.

Available Conservation Measures

Conservation measures provided to species listed as endangered or threatened species under the Act include recognition, recovery actions, requirements for Federal protection, and prohibitions against certain practices. Recognition through listing results in public awareness, and conservation by Federal, State, Tribal, and local agencies; private organizations; and individuals. The Act encourages cooperation with the States and other countries and calls for recovery actions to be carried out for listed species. The protection required by Federal agencies and the prohibitions against certain activities are discussed, in part, below.

The primary purpose of the Act is the conservation of endangered and threatened species and the ecosystems upon which they depend. The ultimate goal of such conservation efforts is the recovery of these listed species, so that they no longer need the protective measures of the Act. Subsection 4(f) of the Act calls for the Service to develop and implement recovery plans for the conservation of endangered and threatened species. The recovery planning process involves the identification of actions that are necessary to halt or reverse the species' decline by addressing the threats to its survival and recovery. The goal of this process is to restore listed species to a point where they are secure, self-sustaining, and functioning components of their ecosystems.

Recovery planning includes the development of a recovery outline shortly after a species is listed and preparation of a draft and final recovery plan. The recovery outline guides the immediate implementation of urgent recovery actions and describes the process to be used to develop a recovery plan. Revisions of the plan may be done to address continuing or new threats to the species, as new substantive information becomes available. The recovery plan also identifies recovery criteria for review of when a species may be ready for reclassification from endangered to threatened (''downlisting'') or removal from the Lists of Endangered and Threatened Wildlife and Plants (''delisting''), and methods for monitoring recovery progress. Recovery plans also establish a framework for agencies to coordinate their recovery efforts and provide estimates of the cost of implementing recovery tasks. Recovery teams

(composed of species experts, Federal and State agencies, nongovernmental organizations, and stakeholders) are often established to develop recovery plans. When completed, the recovery outline, draft recovery plan, and the final recovery plan will be available on our website (*http://www.fws.gov/endangered*), or from our South Carolina Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Implementation of recovery actions generally requires the participation of a broad range of partners, including other Federal agencies, States, Tribes, nongovernmental organizations, businesses, and private landowners. Examples of recovery actions include habitat restoration (*e.g.,* restoration of native vegetation), research, captive propagation and reintroduction, and outreach and education. The recovery of many listed species cannot be accomplished solely on Federal lands because their range may occur primarily or solely on non-Federal lands. To achieve recovery of these species requires cooperative conservation efforts on private, State, and Tribal lands.

If this species is listed, funding for recovery actions will be available from a variety of sources, including Federal budgets, State programs, and cost share grants for non-Federal landowners, the academic community, and nongovernmental organizations. In addition, pursuant to section 6 of the Act, the U.S. States and territories of Alabama, Arkansas, Colorado, Connecticut, Delaware, Florida, Georgia, Illinois, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maryland, Massachusetts, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, Puerto Rico, Rhode Island, South Carolina, Tennessee, Texas, Virginia, U.S. Virgin Islands, and West Virginia would be eligible for Federal funds to implement management actions that promote the protection or recovery of the eastern black rail. Information on our grant programs that are available to aid species recovery can be found at: *http://www.fws.gov/grants.*

Although the eastern black rail is only proposed for listing under the Act at this time, please let us know if you are interested in participating in recovery efforts for this subspecies. Additionally, we invite you to submit any new information on this subspecies whenever it becomes available and any information you may have for recovery planning purposes (see **FOR FURTHER INFORMATION CONTACT**).

Section 7(a) of the Act requires Federal agencies to evaluate their actions with respect to any species that is proposed or listed as an endangered or threatened species and with respect to its critical habitat, if any is designated. Regulations implementing this interagency cooperation provision of the Act are codified at 50 CFR part 402. Section 7(a)(4) of the Act requires Federal agencies to confer with the Service on any action that is likely to jeopardize the continued existence of a species proposed for listing or result in destruction or adverse modification of proposed critical habitat. If a species is listed subsequently, section 7(a)(2) of the Act requires Federal agencies to ensure that activities they authorize, fund, or carry out are not likely to jeopardize the continued existence of the species or destroy or adversely modify its critical habitat. If a Federal action may affect a listed species or its critical habitat, the responsible Federal agency must enter into consultation with the Service.

Federal agency actions within the eastern black rail's habitat that may require conference or consultation or both as described in the preceding paragraph include management and any other landscape-altering activities on Federal lands administered by the U.S. Fish and Wildlife Service and National Park Service; issuance of section 404 Clean Water Act (33 U.S.C. 1251 *et seq.*) permits by the U.S. Army Corps of Engineers; and construction and maintenance of roads or highways by the Federal Highway Administration.

Provisions of Section 4(d) of the Act

The Act and its implementing regulations set forth a series of general prohibitions and exceptions that apply to threatened wildlife. Under section 4(d) of the Act, the Secretary of the Interior has the discretion to issue such regulations as he deems necessary and advisable to provide for the conservation of threatened species. The Secretary also has the discretion to prohibit, by regulation with respect to any threatened species of fish or wildlife, any act prohibited under section 9(a)(1) of the Act.

The regulations at 50 CFR 17.31(a) provide that the prohibitions set forth for endangered wildlife at 50 CFR 17.21 also apply to threatened wildlife, except as discussed below. The regulations at 50 CFR 17.21, which codify the prohibitions in section 9(a)(1) of the Act, make it illegal for any person subject to the jurisdiction of the United States to take (which includes harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect; or to attempt any of these) endangered wildlife within the United States or on the high seas. In addition, it is unlawful to import; export; deliver, receive, carry, transport, or ship in interstate or foreign commerce in the course of commercial activity; or sell or offer for sale in interstate or foreign commerce endangered wildlife. It is also illegal to possess, sell, deliver, carry, transport, or ship any such wildlife that has been taken illegally. To the extent the section 9(a)(1) prohibitions apply only to endangered species, this proposed rule would apply those same prohibitions to the eastern black rail.

Instead of generally applying the same prohibitions to threatened wildlife that apply to endangered wildlife, in accordance with section 4(d) of the Act, the Service may instead develop a protective regulation (''4(d) rule'') that is specific to the conservation needs of any threatened species. Such a regulation would contain all of the protections applicable to that species (50 CFR 17.31(c)); this may include some of the general prohibitions and exceptions set forth at 50 CFR 17.31 and 17.32, but would also include species-specific protections that may be more or less restrictive than the general provisions at 50 CFR 17.31.

For the eastern black rail, the Service has developed a proposed 4(d) rule that is tailored to the specific threats and conservation needs of this subspecies. The proposed 4(d) rule contains specific prohibitions and exceptions to those prohibitions. It would not remove or alter in any way the consultation requirements under section 7 of the Act.

Proposed 4(d) Rule for the Eastern Black Rail

Under this proposed 4(d) rule, the following activities would be prohibited unless otherwise noted:

Fire Management Activities

Prescribed fire can be used to re-initiate succession and seral sequencing on public and private lands, which is important to ensure suitable habitat for the eastern black rail. However, the application of prescribed fire should avoid burning during the nesting, brood rearing, and flightless molt periods (mid-March through September 30) where eastern black rails are present. Prescribed fire that takes place during critical time periods for the subspecies (*i.e.,* mating, egg-laying, and incubation; parental care; and flightless molt) will lead to mortality of eggs, chicks, juveniles, and molting birds. We recognize that there is latitudinal variability of these life-history events across the range of the eastern black rail. For example, in Texas, eastern black rails begin to nest in March, whereas in

Kansas and Colorado, nesting begins around May 1. Therefore, the timing of prohibitions would coincide with when the eastern black rail is using the habitat for breeding and nesting, and with the flightless molt period.

We realize that prohibiting prescribed fire during the months these activities take place may conflict with land management goals, for example, the use of prescribed fire to control shrub or tree encroachment and improve habitat suitability for species such as the eastern black rail. However, prescribed fire during this period will reduce survival of eggs, chicks, juveniles, and adults and will reduce recruitment of individuals into the next generation. Opportunities to reach management goals still remain available during a significant period of the year.

For prescribed fires outside of the nesting, brood rearing, and flightless molt period, best management practices (BMPs) can minimize the take of eastern black rails. Therefore, we propose to allow prescribed burns that follow identified BMPs; this would not adversely affect the likelihood of survival of the eastern black rail in occupied areas that are burned. BMPs include:

- The application of prescribed fire should avoid perimeter fires, ring fires, or fires that have long, unbroken boundaries that prevent species dependent on dense cover from escaping a fire.
- Prescribed fire should be employed to move slowly across a tract. Fast fires can cause significant mortality for eastern black rails.
- Prescribed fire should be applied in a patchy manner or with small patches to allow eastern black rails a place of refuge. Patches can be small but numerous enough to support multiple eastern black rails.

This provision of the proposed 4(d) rule for fire management activities would promote conservation of the eastern black rail by encouraging continued management of the landscape in ways that meet management needs while simultaneously ensuring the continued survival of the eastern black rail and providing suitable habitat.

Haying, Mowing, and Other Mechanical Treatment Activities

Haying and mowing can maintain grasslands by reducing woody vegetation encroachment and also for the production of forage for livestock. Mechanical treatment activities include disking (using a disk harrow or other tool) and brush clearing (using a variety of tools that may be attached to a tractor or a stand-alone device). While these practices are used to enhance eastern black rail habitat, when done at the wrong time, they can impact recruitment and survival.

Haying, mowing, and mechanical treatment activities in emergent wetlands should be avoided during the nesting, brood rearing, and flightless molt periods (mid-March through September 30) where eastern black rail are present. We define emergent wetlands as areas where ''emergent plants—*i.e.,* erect, rooted, herbaceous hydrophytes, excluding mosses and lichens—are the tallest life form with at least 30 percent areal coverage. This vegetation is present for most of the growing season in most years. These wetlands are usually dominated by perennial plants'' (Federal Geographic Data Committee 2013, p. 33). For more information on emergent wetlands, please visit the Service's National Wetlands Inventory website: *https://www.fws.gov/wetlands/.*

Haying, mowing, and mechanical treatment activities in emergent wetlands that take place during critical time periods for the subspecies (*i.e.,* mating, egg-laying, and incubation; parental care; and flightless molt) will lead to disturbance of nesting birds; destruction of nests; and mortality of eggs, chicks, juveniles, and adults. As discussed above, we recognize that there is latitudinal variability of these life-history events across the range of the eastern black rail. Therefore, the timing of prohibitions would coincide with when the eastern black rail is using the habitat for breeding and nesting, and with the flightless molt period.

We recognize mowing or mechanical treatment activities may need to be used for maintenance requirements to ensure safety and operational needs for existing infrastructure, and understand that these maintenance activities may need to take place during the nesting, brooding, or post-breeding molt period. These include maintenance of existing fire breaks, roads, transmission corridors rights-of-way, and fence lines. These activities are an exception to this prohibition.

We do not propose to prohibit mowing, haying, or mechanical treat activities outside of the nesting, brood rearing, and flightless molt time periods. However, we encourage land managers to employ voluntary BMPs outside of these time periods. BMPs for haying, mowing, and mechanical treatment activities include avoidance of emergent wetlands; providing untreated (*i.e.,* unmown or avoided) areas that provide refugia for species dependent on dense cover, such as the eastern black rail; and using temporary markers to identify where birds occur, for example wetland areas, so that these areas may be avoided.

This provision of the proposed 4(d) rule for haying, mowing, and mechanical treatment activities in emergent wetlands would promote conservation of the eastern black rail by prohibiting activities that would reduce survival and limit recruitment during the period when breeding and flightless molt takes place.

Grazing Activities

Based on current knowledge of grazing and eastern black rail occupancy, the specific timing, duration, and intensity of grazing will result in varying impacts to the eastern black rail and its habitat. Light-to-moderate grazing may be compatible with eastern black rail occupancy under certain conditions, while intensive or heavy grazing is likely to have negative effects on eastern black rails and the quality of their habitat. Grazing densities should allow for the maintenance of the dense vegetative cover required by the eastern black rail.

Intensive or heavy grazing should be avoided during the nesting, brood rearing, and flightless molt periods (mid-March through September 30) in emergent wetlands where eastern black rail are present. Intensive or heavy grazing that takes place during critical time periods for the subspecies (*i.e.,* mating, egg-laying and incubation; parental care; and flightless molt) will lead to disturbance of nesting birds, as well as possible destruction of nests and mortality of eggs and chicks due to trampling. As discussed above, we recognize that there is latitudinal variability of these life-history events across the range of the eastern black rail. Therefore, the timing of prohibitions would coincide with when the eastern black rail is using the habitat for breeding or nesting, and with the flightless molt period. We propose to limit this prohibition to public lands, given our knowledge of where grazing activities and the presence of eastern black rails overlap.

Although we are not proposing to prohibit year-round light to moderate grazing, or intensive grazing outside of the nesting season, we do recommend that land managers follow voluntary BMPs to provide for additional conservation of the eastern black rail and its habitat. BMPs to avoid negative impacts to the eastern black rail from grazing activities include the use of fences to exclude grazing from emergent wetland areas during the breeding and flightless molt periods, and rotational grazing practices so that a mosaic

pattern of cover density is present across fenced tracts of land.

This provision of the proposed 4(d) rule for grazing activities would promote conservation of the eastern black rail by encouraging land managers to continue managing the landscape in ways that meet their needs while simultaneously providing suitable habitat for the eastern black rail.

Other Forms of Take

Protecting the eastern black rail from direct forms of take, such as physical injury or killing, whether incidental or intentional, will help preserve and recover the remaining populations of the subspecies. Protecting the eastern black rail from indirect forms of take, such as harm that results from habitat degradation, will likewise help preserve the subspecies' populations and also decrease synergistic, negative effects from other stressors impeding recovery of the subspecies. We propose to extend the Act's section 9(a)(1)(A), 9(a)(1)(D), 9(a)(1)(E), and 9(a)(1)(F) prohibitions to the eastern black rail throughout its range.

We may issue permits to carry out otherwise prohibited activities involving threatened wildlife under certain circumstances. Regulations governing permits are codified at 50 CFR 17.32. With regard to threatened wildlife, a permit may be issued for the following purposes: for scientific purposes, to enhance propagation or survival, for economic hardship, for zoological exhibition, for educational purposes, for incidental taking, or for special purposes consistent with the purposes of the Act. There are also certain statutory exemptions from the prohibitions, which are found in sections 9 and 10 of the Act.

Critical Habitat

Background

Critical habitat is defined in section 3 of the Act as:

(1) The specific areas within the geographical area occupied by the species, at the time it is listed in accordance with the Act, on which are found those physical or biological features:

(a) Essential to the conservation of the species, and

(b) Which may require special management considerations or protection; and

(2) Specific areas outside the geographical area occupied by the species at the time it is listed, upon a determination that such areas are essential for the conservation of the species.

Conservation, as defined at section 3 of the Act, means to use and the use of all methods and procedures that are necessary to bring an endangered or threatened species to the point at which the measures provided pursuant to the Act are no longer necessary. Such methods and procedures include, but are not limited to, all activities associated with scientific resources management such as research, census, law enforcement, habitat acquisition and maintenance, propagation, live trapping, and transplantation, and, in the extraordinary case where population pressures within a given ecosystem cannot be otherwise relieved, may include regulated taking.

Critical habitat receives protection under section 7 of the Act through the requirement that Federal agencies ensure, in consultation with the Service, that any action they authorize, fund, or carry out is not likely to result in the destruction or adverse modification of critical habitat. The designation of critical habitat does not affect land ownership or establish a refuge, wilderness, reserve, preserve, or other conservation area. Such designation does not allow the government or public to access private lands. Such designation does not require implementation of restoration, recovery, or enhancement measures by non-Federal landowners. Where a landowner requests Federal agency funding or authorization for an action that may affect a listed species or critical habitat, the consultation requirements of section 7(a)(2) of the Act would apply, but even in the event of a destruction or adverse modification finding, the obligation of the Federal action agency and the landowner is not to restore or recover the species, but to implement reasonable and prudent alternatives to avoid destruction or adverse modification of critical habitat.

Section 4 of the Act requires that we designate critical habitat on the basis of the best scientific data available. Further, our Policy on Information Standards Under the Endangered Species Act (published in the **Federal Register** on July 1, 1994 (59 FR 34271)), the Information Quality Act (section 515 of the Treasury and General Government Appropriations Act for Fiscal Year 2001 (Pub. L. 106–554; H.R. 5658)), and our associated Information Quality Guidelines, provide criteria, establish procedures, and provide guidance to ensure that our decisions are based on the best scientific data available. They require our biologists, to the extent consistent with the Act and with the use of the best scientific data available, to use primary and original sources of information as the basis for recommendations to designate critical habitat.

Prudency Determination

Section 4(a)(3) of the Act, as amended, and implementing regulations (50 CFR 424.12), require that, to the maximum extent prudent and determinable, the Secretary designate critical habitat at the time the species is determined to be endangered or threatened. Our regulations (50 CFR 424.12(a)(1)) state that the designation of critical habitat is not prudent when one or both of the following situations exist: (1) The species is threatened by taking or other human activity, and identification of critical habitat can be expected to increase the degree of threat to the species, or (2) such designation of critical habitat would not be beneficial to the species.

Increased Degree of Threat to the Eastern Black Rail

Designation of critical habitat requires the publication of maps and a narrative description of specific critical habitat areas in the **Federal Register**. We are concerned that designation of critical habitat would more widely announce the exact location of eastern black rails (and highly suitable habitat) to overzealous birders and further facilitate disturbance. As discussed above, the eastern black rail is highly sought after by the birding community due to its rarity. We anticipate that listing the eastern black rail under the Act will further interest in this bird and increase the likelihood that eastern black rails will be sought out for birders' ''life lists'' and general birding trips.

Eastern black rails are unique in they are extremely secretive; they walk or run under dense vegetation and are rarely seen in flight. They are generally detected by employing playback calls. As the eastern black rail is difficult to see, birders generally record an eastern black rail on their life list by documenting the bird's call. Because the eastern black rail is highly sought after, birders will play calls repeatedly to garner a response and sometimes to lure a bird in an attempt to see the individual. The constant playing of a call to the bird for days, if not weeks, at a time is a form of harassment to the bird. The use of playback calls has been documented to alter the behavior of eastern black rails, resulting in a threats display that includes spreading the wings and charging the tape recorder (Taylor and Van Perlo 1998, p. 223; Eddleman, Flores, and Legare 1994, unpaginated). The American Birding Association Code of Birding Ethics

states that birders should limit the use of recordings and other methods of attracting birds, and never use such methods for attracting listed or rare species; however, the singular method used to detect eastern black rails is by playback calls (as opposed to passive listening) and a listing designation is unlikely to abate this disturbance.

The eastern black rail is highly vulnerable to disturbance, especially during the brooding and nesting season. Birders attempting to see or hear the bird by using vocalized calls or recordings has the potential to disturb nesting birds and to trample nests or eggs, and may lead to increased predation (Beans and Niles 2003, p. 96). We believe that the threat of disturbance will be exacerbated by the publication of maps and descriptions outlining the specific locations of this secretive bird in the **Federal Register** and local newspapers.

Identification and publication of critical habitat may also increase the likelihood of inadvertent or purposeful habitat destruction. As discussed above, trespassing has been documented on private lands and in areas on public lands specifically closed to the public to protect nesting eastern black rails (Roth 2018, pers. comm.; Hand 2017, pers. comm.). Trespassing may not only disturb the bird, but can also result in trampling of the bird's habitat, as well as eggs and nests. State resource managers and researchers are concerned that releasing locations of eastern black rail detections may increase human disturbance and harassment to the subspecies. Trespassing on private land is also a concern, as it likely results in increased harassment to the rails and to the private landowners who are providing habitat to the rails (Hand 2017, pers. comm.). We recognize with the advent of eBird that locations of rare birds, including the eastern black rail, are widely distributed and readily available if those location data are posted to this website. Given the eastern black rail's rarity and near grail-like status in the birding community, when a location has been published on eBird, birders often flock to the site in large numbers in an attempt to see or hear the bird. For example, in June 2010, an eastern black rail was detected at the Parker River NWR in Massachusetts, and the detection was posted on eBird (eBird 2018, unpaginated). On June 2, a birder posted on eBird that he assembled with a group of 34 birders to hear the one or two eastern black rails at the site (eBird 2018, unpaginated). On June 4, another birder posted that he waited more than 2 hours with about 50 other individuals to hear the eastern black rail call (eBird 2018, unpaginated). On June 8, a birder noted that about 30 people heard the eastern black rail (eBird 2018, unpaginated). The 2010 record is the only eastern black rail occurrence recorded in eBird for this specific coordinate location and demonstrates the great interest an eastern black rail generates among the birding community.

To minimize harmful disturbances, eBird identifies a list of birds it considers ''sensitive species.'' This list is developed in collaboration with partners to identify birds for which demonstrable harm, such as targeted capture, targeted hunting, or targeted disturbance of nests or individual birds from birders or photographers, may occur from publicly posting location records. In most cases, these birds identified as ''sensitive species'' are species that have been listed by a local entity or that appear on the International Union for Conservation of Nature (IUCN) Red List. These birds have a customized display in eBird that omits checklist details, such as date and location, among other restrictions. While researchers have access to this information, the general public is not able to view more specific information on the record. Although the eastern black rail is not currently on eBird's ''sensitive species'' list, given the increased risk of harassment to the eastern black rail from posting location data, we will request that it be added if we list the subspecies.

We acknowledge that general location information is provided within this proposed rule, and more-specific location information can be found through other sources. However, we maintain that designation of critical habitat would more widely publicize the potential locations of the eastern black rail and its habitat, and lead to an increased threat of disturbance to the bird from birders. We believe that identification and advertisement of critical habitat may exacerbate the threat of disturbance, thus making sensitive areas more vulnerable to purposeful harmful impacts from humans. Certain life stages, including eggs, chicks, nesting/brooding adults, and adults experiencing the flightless molt period, are particularly vulnerable. Identification and publication of detailed critical habitat information and maps would likely increase exposure of sensitive habitats and increase the likelihood and severity of threats to both the subspecies and its habitat. Identification and publication of critical habitat may lead to increased attention to the subspecies, or increased attempts to observe or hear it.

Benefits to the Subspecies From Critical Habitat Designation

Under our regulations at 50 CFR 424.12(a)(1)(i), this finding that designating critical habitat is likely to increase the threat of disturbance to the subspecies provides a sufficient basis for making a not-prudent finding. As demonstrated by the use of the word ''or'' in 50 CFR 424(a) between subsections (1)(i) and (1)(ii), the regulations do not require that we also determine that designating critical habitat would not be beneficial to the subspecies.

Summary

Based on the above discussion, we preliminarily conclude that the designation of critical habitat is not prudent, in accordance with 50 CFR 424.12(a)(1), because the eastern black rail and its habitat face a threat by overzealous birders, and designation can reasonably be expected to increase the degree of these threats to the subspecies and its habitat by making location information more readily available. However, we seek public comment on threats of taking or other human activity, including the impacts of birders to the eastern black rail and its habitat, and the extent to which designation might increase those threats.

Required Determinations

Clarity of the Rule

We are required by Executive Orders 12866 and 12988 and by the Presidential Memorandum of June 1, 1998, to write all rules in plain language. This means that each rule we publish must:

(1) Be logically organized;

(2) Use the active voice to address readers directly;

(3) Use clear language rather than jargon;

(4) Be divided into short sections and sentences; and

(5) Use lists and tables wherever possible.

If you feel that we have not met these requirements, send us comments by one of the methods listed in **ADDRESSES**. To better help us revise the rule, your comments should be as specific as possible. For example, you should tell us the numbers of the sections or paragraphs that are unclearly written, which sections or sentences are too long, the sections where you feel lists or tables would be useful, etc.

National Environmental Policy Act (42 U.S.C. 4321 et seq.)

We have determined that environmental assessments and environmental impact statements, as defined under the authority of the National Environmental Policy Act, need not be prepared in connection with listing a species as an endangered or threatened species under the Endangered Species Act. We published a notice outlining our reasons for this determination in the **Federal Register** on October 25, 1983 (48 FR 49244).

Government-to-Government Relationship With Tribes

In accordance with the President's memorandum of April 29, 1994 (Government-to-Government Relations with Native American Tribal Governments; 59 FR 22951), Executive Order 13175 (Consultation and Coordination With Indian Tribal Governments), and the Department of the Interior's manual at 512 DM 2, we readily acknowledge our responsibility to communicate meaningfully with recognized Federal Tribes on a government-to-government basis. In accordance with Secretarial Order 3206 of June 5, 1997 (American Indian Tribal Rights, Federal-Tribal Trust Responsibilities, and the Endangered Species Act), we readily acknowledge our responsibilities to work directly with tribes in developing programs for healthy ecosystems, to acknowledge that tribal lands are not subject to the same controls as Federal public lands, to remain sensitive to Indian culture, and to make information available to tribes. Although we have no records of the eastern black rail occurring on tribal lands, the range of the eastern black rail overlaps with tribal lands.

References Cited

A complete list of references cited in this proposed rule is available on the internet at *http://www.regulations.gov* and upon request from the South Carolina Ecological Services Field Office (see **FOR FURTHER INFORMATION CONTACT**).

Authors

The primary authors of this proposed rule are the staff members of the Species Assessment Team, U.S. Fish and Wildlife Service.

List of Subjects in 50 CFR Part 17

Endangered and threatened species, Exports, Imports, Reporting and recordkeeping requirements, Transportation.

Proposed Regulation Promulgation

Accordingly, we propose to amend part 17, subchapter B of chapter I, title 50 of the Code of Federal Regulations, as set forth below:

PART 17—ENDANGERED AND THREATENED WILDLIFE AND PLANTS

■ 1. The authority citation for part 17 continues to read as follows:

Authority: 16 U.S.C. 1361–1407; 1531–1544; and 4201–4245, unless otherwise noted.

■ 2. Amend § 17.11(h) by adding an entry for ''Rail, eastern black'' to the List of Endangered and Threatened Wildlife in alphabetical order under BIRDS to read as set forth below:

§ 17.11 Endangered and threatened wildlife.

* * * * *

(h) * * *

Common name	Scientific name	Where listed	Status	Listing citations and applicable rules
*	*	*	*	*
BIRDS				
*	*	*	*	*
Rail, eastern black	*Laterallus jamaicensis jamaicensis*.	Wherever found	T	[**Federal Register** citation when published as a final rule]; 50 CFR 17.41(f).[4d]
*	*	*	*	*

■ 3. Amend § 17.41 by adding a paragraph (f) to read as follows:

§ 17.41 Special rules—birds.

* * * * *

(f) Eastern black rail (*Laterallus jamaicensis jamaicensis*). (1) *Prohibitions.* The following activities are prohibited:

(i) Purposeful take of an eastern black rail, including capture, handling, or other activities.

(ii) Prescribed burn activities that result in the incidental take of eastern black rails when the activity occurs:

(A) During the nesting, brooding, or post-breeding flightless molt period; or

(B) Outside of the nesting, brooding, or post-breeding flightless molt period, unless best management practices that minimize effects of the prescribed burn on the eastern black rail are employed. Examples of best management practices include employing slow burn fires, limiting the block of land burned to ensure suitable dense cover habitat remains for the eastern black rail, employing patch or refugia techniques to allow for eastern black rails to survive or escape fire, and avoiding the use of ring fires or perimeter fires.

(iii) Mowing, haying, and mechanical treatment activities in emergent wetlands that result in the incidental take of eastern black rails when the activity occurs during the nesting, brooding, or post-breeding flightless molt period, except in accordance with paragraph (f)(2)(iii) of this section.

(iv) Grazing activities on public lands that result in the incidental take of eastern black rails when the activity:

(A) Occurs during the nesting, brooding, or post-breeding flightless molt period;

(B) Involves intensive or high-density grazing that occurs on suitable occupied eastern black rail habitat; and

(C) Does not support the maintenance of appropriate dense vegetation cover for the eastern black rail.

(v) Possession and other acts with unlawfully taken eastern black rails. It is unlawful to possess, sell, deliver, carry, transport, or ship, by any means whatsoever, any eastern black rail that was taken in violation of section 9(a)(1)(B) and 9(a)(1)(C) of the Act or State laws.

(vi) Import and export of the eastern black rail.

(vii) Delivery, receipt, carry for transport, or shipment in interstate or

foreign commerce, by any means whatsoever, and in the course of a commercial activity, of any eastern black rail.

(viii) Sale or offer for sale in interstate or foreign commerce of any eastern black rail.

(2) *Exceptions from prohibitions.* (i) All of the provisions of § 17.32 apply to the eastern black rail.

(ii) Any employee or agent of the Service, of the National Marine Fisheries Service, or of a State conservation agency that is operating a conservation program for the eastern black rail pursuant to the terms of a cooperative agreement with the Service in accordance with section 6(c) of the Act, who is designated by his agency for such purposes, may, when acting in the course of his official duties, take eastern black rails.

(iii) Mowing or mechanical treatment activities in emergent wetlands that:

(A) Occur during the nesting, brooding, or post-breeding flightless molt period; and

(B) Are maintenance requirements to ensure safety and operational needs for existing infrastructure. Existing infrastructure may include existing fire breaks, roads, transmission corridor rights-of-way, and fence lines.

* * * * *

Dated: September 20, 2018.

James W. Kurth,

Deputy Director, U.S. Fish and Wildlife Service, Exercising the Authority of the Director, U.S. Fish and Wildlife Service.

[FR Doc. 2018–21799 Filed 10–5–18; 8:45 am]

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