Summary of Secretive Marsh Bird Surveys in the Atlantic Flyway

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Connecticut - In CT we do 10 marshes a year as an index. We use Conway's protocol and callback surveys.

We surveyed a total of 47 marshes in 2003 and 2004 to assess breeding rail and secretive waterbird distribution. Based upon those survey data, we chose 10 marshes to serve as a barometer of habitat condition and breeding population status of these species. The 10 index marshes were located in salt marsh (n = 5) and freshwater (n = 5) habitats.

Callback surveys were employed to determine presence/absence at each site. Targeted species included: American Bittern (*Botaurus lentiginosus*), black rail (*Laterallus jamaicensis*), clapper rail (*Rallus longirostris)*, common moorhen (*Gallinula cloropus*), king rail (*Rallus elegans*), least bittern (*Ixobrychus exilis*), pied-billed grebe (*Podilymbus podiceps*), sora (*Porzana carolina*), and Virginia rail (*Rallus limicola*).

Fixed survey points were located 400 meters apart and marked with inconspicuous markers along each survey route. The locations of survey points were plotted on maps. Marshes were surveyed by boat when survey points were located on the open water and emergent vegetation interface, and on foot when on the interface between upland and emergent vegetation.

Surveys consisted of a CD playback with an initial passive listening period of three minutes followed by 30 seconds of species calls. Thirty seconds of silence were inserted between each species call period. Calls were broadcast in order of least to most intrusive. Environmental variables such as temperature, wind speed, percentage cloud-cover, and precipitation were recorded at the onset of each survey. Responses from individual birds heard during the callback survey were recorded and a compass bearing taken of their location to limit the recording of repetitive birds.

Surveys were conducted at all of the index marshes, except for Roy Swamp and Stewart B. McKinney. Roy Swamp has grown in and become nearly impossible to survey effectively. Staffing and weather issues precluded the Refuge staff from conducting the survey in 2018. Detections of targeted species occurred at all sites (Table 2). This index has declined every year since 2010. This is particularly the case with Virginia rail and clapper rail. These were the two most abundant species when this survey began. Independent survey work conducted along the coast by our partners and supported by the Program Leader through contract development indicates an annual decline of clapper rail along the Connecticut coast of 13%.

The continued decline of species in this index, particularly the most abundant ones, is troubling. These areas were chosen because of their representativeness of wetlands in the state. If the sensitive species in these habitats are declining, this is indicative of the gradual decline in the quality and functioning of these systems in general. Due to continued staffing issues and time commitments, we may move this survey to a periodic survey rather than an annual survey.

Delaware - In Delaware, we collaborate with the University of Delaware (Dr Greg Shriver) and staff at DNERR St Jones Reserve to conduct SHARP surveys. These are conducted along the shore of the Delaware Bay and some along the southern Atlantic Coast shoreline. This involves secretive marsh bird surveys and vegetation data collection following the established SHARP protocols (http://www.tidalmarshbirds.org) at selected SHARP locations. I believe these originally started in 2011–2014 (before my time), and again from 2018–present.

The state is also funding a University of Delaware PhD student, Elisa Elizondo, to complete a rail demographic and movement study. This online study is focused on clapper rails and began in 2018.

Florida - Currently, only Florida Fish and Wildlife Conservation Commission (FWC) staff on Wildlife Management Areas ("WMAs", n = 8 properties) collect secretive marshbird data using the Standardized North American Marshbird protocol. The species represented and the timing of surveys depends on the region of the state as the WMAs represent both saltwater and freshwater habitats and timing of peak nesting is earlier farther south in the state. Surveys in the southern part of the state start earlier, generally in March, while surveys in north Florida start in April. The FWC also collected state-wide data in 2011-2012 across multiple saltwater and freshwater sites (Enloe et al. 2017). Historic data is also available for some National Wildlife Refuges in the state. Historic FWC data (pre-2013) has been entered into the Avian Knowledge Network (AKN), but we don't believe current data has been submitted.

Georgia - At present Georgia DNR, Wildlife Resources Division (WRD) is not conducting any secretive marshbird surveys. I am not aware of any surveys being conducted by other agencies or organizations in the state.

We did conduct secretive marshbird surveys in 2011, 2012, 2014, and 2016, targeting black rail, king rail, and least bittern, and including purple gallinule and common gallinule. We used the Standardized North American Marsh Bird Protocol for these. Most of the surveys were done at Altamaha WMA, a large freshwater impoundment complex (~3000 acres) along the coast and wetlands along the shore of Lake Seminole (southwest corner of state) at Silver Lake WMA. Several other wetlands on wildlife management areas in the southern third of the state were also surveyed in 2011, 2012, and 2014, but no marshbirds were ever detected at these sites, so they were dropped. All of these survey were conducted from late March through early May. Each survey point was visited three times each year during this time window. Surveys used the Standardized North American Marsh Bird Protocol including the playback sequence. In addition, we conducted targeted surveys for black rails in coastal high saltmarsh in 2013-2015 using a call playback protocol for black rails developed by Maryland and also used by Virginia, North Carolina, South Carolina, and other Atlantic Coast states for their black rail surveys. More intensive surveys for black rails were conducted in 2017 and 2018 and included coastal high marsh, near coastal freshwater, and freshwater marsh in the south central portion of the state. The Maryland protocol was used for these surveys as well. All black rail surveys were conducted at night.

From 2013-2016, a PhD student at the University of Georgia (Elizabeth Hunter) conducted marshbird surveys under contract with WRD as part of her dissertation work. This included clapper rail and seaside sparrow surveys.

Maine - Summary for Maine follows:

- WHO is monitoring
    - State employees and contractors, as well as select Maine Bird Atlas volunteers.
- WHERE is the monitoring
    - Statewide – as part of a 5-year Bird Atlas effort, we have chosen 200 wetlands across the state for sampling by using a GRTS approach selecting wetlands based on size class in the same proportion that those size classes occur statewide.
- HOW are they monitoring
    - Three surveys conducted at each site, one in each of the following time periods: May 15-31, June 1-14, June 15-30. We aim to have 10 days between surveys.
    - Surveys are either conducted in the mornings or evenings, but whichever is chosen for a site is kept the same for all three survey periods. Morning surveys are conducted between ½ hr before sunrise to 3 hrs after sunrise. Evening surveys are conducted between 2 hrs before sunset and ½ hr after sunset.
    - We are using the Standardized North American Marsh Bird Protocol. All survey points within a wetland are at least 400 m apart. We begin with a 5-minute passive survey followed by broadcasting a 9-minute-long marsh bird MP3 file of vocalizations. The MP3 file contains 30 second clips of nine species with 30 seconds of silence following each.
- WHICH species
    - We use a callback array of the following species in this order: least bittern, sora, Virginial rail, green heron, sedge wren, American bittern, common gallinule, American coot, and pied-billed grebe.

Maryland - Summary for Maryland follows:

WHO: To the best of my knowledge the primary secretive marshbird monitoring that has taken place in Maryland comes from two sources, the Maryland DNR Wildlife & Heritage Service (W&HS) and surveys done for a few years under the auspices of the SHARP program. At Monie Bay and Jug Bay, National Estuarine Reserve Reserve staff have also conducted marsh bird surveys.

WHEN: W&HS monitored secretive marshbird guild during 1990-92 and 2005-06. SHARP surveys were conducted during 2011-2012. Black Rail focused surveys were conducted by W&HS during 1990-92, 2007, 2014 and 2019. Secretive marshbirds are not surveyed on any regular schedule. Maryland would be interested in cooperating in regular surveys to better document regional secretive marshbird population trends. Funding might be needed to implement regular surveys. At Monie Bay and Jug Bay, National Estuarine Reserve staff have conducted marsh bird surveys since 2009.

WHERE: All secretive marshbird monitoring in Maryland were conducted in the eastern portion of the state in the extensive tidal wetlands east of the fall line (I-95 corridor). Surveys were primarily roadside surveys and points were located on private, state and federal lands. SHARP surveys were not roadside surveys. At Monie Bay and Jug Bay, National Estuarine Reserve staff have also conducted marsh bird surveys.

WHICH: A diverse community of secretive marshbirds was surveyed- Clapper, Virginia, King and Black Rails, Sora, American and Least Bittern, Common Moorhen and Pied-billed Grebe.

HOW: All Maryland surveys have been breeding season point count surveys. The 1990-92 Maryland surveys were conducted using a playback response protocol that was designed specific to Maryland and to address survey needs such as philology, time of day and survey effectiveness because there were no similar protocols that were widely accepted at that time. During the W&HS surveys all points were surveyed twice per season. During the 1990-92 surveys a subset of points was surveyed weekly to document phenology, time of night variation and detection probability. All 1990-92 surveys were conducted from dusk through the night to dawn. During the 2005-2006 surveys the National Marshbird Monitoring protocol was used for the same set of nine species. The SHARP surveys obviously followed SHARP protocols. On the National Estuarine Reserve, surveys have been breeding season point count surveys using a playback response protocol. From 2009-2017 we used the Standardized North American Marsh Bird survey protocol. 2018-2019 we switched to the SHARP protocol to better align with other NERR sites and for logistical reasons. We have also conducted surveys on the Patuxent (Jug Bay Component, 10 points) for most of the same time period, always using the Standardized North American Marsh Bird survey protocol.

DATA: Maryland secretive marshbird monitoring data is maintained in an Access database within the W&HS. Some of the Maryland monitoring data was placed in an early representation of the AKN, but I do not believe that all Maryland data has been properly imported to AKN.

Massachusetts - Summary for Massachusetts follows:

Who is monitoring:

Recent monitoring for marshbirds in Massachusetts has been conducted by the Massachusetts Division of Fisheries and Wildlife (MADFW) and the Saltmarsh Habitat and Avian Research

Project (SHARP). MADFW does not conduct annual marshbird surveys, but will periodically undertake marshbird surveys in selected watersheds or regions. Marshbird surveys by MADFW were conducted within the Housatonic River watershed (western MA) in 2008-2009 and in the Miller's River watershed (north-central MA) in 2017. The SHARP group began conducting marshbird surveys throughout salt marsh habitat along coastal Massachusetts in 2011 and these are ongoing. Between 2011-2012, 257 survey points were sampled. State-wide marshbird surveys were completed between 1991-1993 by a M.S. student at the University of Massachusetts, and this effort resulted in 177 wetland sites being sampled.

Where is monitoring:

Current efforts are focused on coastal salt marsh habitat but future inland marshbird surveys are expected to be conducted by the MADFW.

How are they monitoring:

The SHARP group and the MADFW use the North American Marsh Bird Monitoring Protocol (Conway 2011).

MADFW

The MADFW surveys included playback for least bittern, Virginia rail, sora, king rail, American bittern, pied-billed grebe and common moorhen. There was an initial five minute passive listening period, approximately one-minute of call per target species separated by 30-second blocks of silence between each species call, and a final one-minute post-playback passive listening period. Calls were arranged to broadcast the least intrusive calls first. The total length of the broadcast was twelve minutes. Surveys were conducted between 30 minutes before sunrise until 3 hrs after sunrise or from 2 hours before sunset until 30 minutes after sunset. The great majority of surveys are conducted during the morning period.

The SHARP group also uses the North American Marsh Bird Monitoring Protocol (Conway 2011) to estimate the distribution and abundance of tidal marsh birds. At all survey points during the 2011-12 breeding seasons, they conducted 5-minute passive point-counts divided into 1-minute intervals followed immediately by a sequence of 30-second marsh bird broadcasts coupled with 30-seconds of silence. They selected call-broadcast species based on the species thought to breed in marshes in the region and from additional recommendations by federal and state wildlife biologists. A single observer conducted surveys in the morning from 30 minutes before sunrise to approximately 1100 hours and visited each sampling point 2 - 3 times from April 15 to July 31. They did not survey during high winds, sustained rain, or heavy fog. During each survey they estimated the number of individuals for each species detected in three distance categories: 0–50 m, 50–100 m, and >100 m.

Which species:

The MADFW surveys included playback for least bittern, Virginia rail, sora, king rail, American bittern, pied-billed grebe and common moorhen. The SHARP surveys include playback for black rail, sora, Virginia rail, and clapper rail.

New Hampshire -There are currently no secretive marshbird surveys going on in NH, and the most recent half-hearted attempt was over a decade ago. There WERE SHARP surveys conducted in the state during the last round, and presumably these included Clapper Rail, but since CLRA doesn't occur in the state with any regularity it hardly counts. Occasional marshbird surveys have been conducted at the Lake Umbagog NWR, including some last year, but the latter appear to have been compromised by high water levels and likely didn't yield any useful data.

New Jersey - In NJ there are no additional or special surveys (eg: other than BBS) for webless game birds that are secretive marshbirds (eg: gallinule, sora, VA rail).

For Black Rails:

- WHO is monitoring
  - NJ Div of Fish and Wildlife, ENSP. New Jersey Audubon has been part of some of these efforts
- WHERE is the monitoring
  - Concentrated in high marsh on the Atlantic Coast and Delaware Bayshore in areas where there have been historical records. This is primarily on the Tuckahoe and Mullica Rovers (and their mouths) and some limited areas on Del Bay.
- HOW are they monitoring
  - Call Playback - timing : May-mid-July, schedule each point 3x, separated by 7-10 days and methodology - roughly the Conway protocol, but with a playback specific to rails and surveys taking place nocturnally (10p-3a)
  - Acoustic Recording Units (ARUs) - timing : May-mid-July, schedule each point for at least one 2week period and up to 3 2-week periods, recorded ~4 hours/night methodology - there is not a standard for this, so have just made our own decisions. In addition to what wa already noted, the ARUs listen passively as we do not currently have the resources to pair with recordings to try and elicit calls. In 2020, we may change this a bit, but we do not know what that looks like yet.
- WHICH species
  - Black Rail

New York - Since 2004 state biologists, technicians, and cooperators have been monitoring secretive marsh birds. From 2009-2011 NY participated in the National Marsh bird Monitoring Program Pilot Study conducted by the USFWS. Since then NY has implemented a Marsh Bird Monitoring program that includes sites from the original survey effort (i.e., priori to 2009) as well as some of those designed for the National Marsh bird Monitoring Program. We have

implemented the National Marshbird monitoring program methodology on randomly selected wetlands and wetlands that NYS DEC has been monitoring long term. NY has also added randomly selected routes at managed wetlands to assess management questions. Species targeted during the surveys include: Virginia rail, sora, king rail, American bittern, least bittern , black rail, clapper rail and pied-billed grebe as primary focal species. Secondary focal species included marsh wren, willow flycatcher, swamp sparrow, black tern, American coot, common gallinule, and Wilson's snipe. We have historically uploaded data into the AKN but recent years may be absent. New York has interest in assessing our current study design to understand how accurately we can track changes in the status (e.g, abundance and/or occupancy) of species and management implications.

North Carolina -The NC Wildlife Resources Commission contracted the Center for Conservation Biology to carry out surveys of Black Rails along the North Carolina Coastal Plain during the breeding seasons of 2014, 2015, 2017, and 2018. The protocol for 2017 and 2018 was based on the Secretive Marshbird Survey, Southeast Region protocol written by Smith and Wiest. Data are stored with NCWRC and the CCB, and have been shared with the ACJV. Currently there are no plans for additional large scale surveys. Future surveys are likely to focus on NCWRC properties where Black Rails have been detected.

Pennsylvania - Summary for Pennsylvania follows:

WHO: State biologists, contracted NGOs, and volunteers in Pennsylvania.

WHERE: Statewide secretive marshbird survey in 2014-2015 included wetlands > 3 hectares in size (a similar effort is scheduled for 2020 and every 5 years thereafter). Historically, intermittent surveys conducted as far back as 1991 and focused on the northwestern region of the state (Crawford and Erie Counties).

HOW: Standardized North American Marsh Bird Protocol is used from May-June; in 2014/2015: 2 replicate surveys were conducted, in 2020: 3 replicates will be completed.

WHICH: We use a playback to target species: American bittern, least bittern, pied-billed grebe , sora, king rail, black rail, Virginia rail, American coot, and common gallinule.

Quebec - Here is some information from Québec concerning marshbird surveys and other initiatives that cover marshbirds.

- WHO is monitoring?

Birds Canada has been coordinating the Marsh Monitoring Program (in English) / Programme de surveillance des marais (in French) in the province since 2004. This citizen science effort is funded through major support from Environment and Climate Change Canada. There was a pilot year in 2003. The data are available through Birds Canada's Nature Counts portal (https://www.birdscanada.org/birdmon/default/main.jsp), which is part of the Avian Knowledge Network. Annual trend analyses are done.

Environment and Climate Change Canada's Canadian Wildlife Service also conducts a species-specific survey for the Least Bittern, which has been running at least since the early 2000s. If you need more detailed information about this survey, please reach out to Benoît Jobin (benoit.jobin@canada.ca) of the Canadian Wildlife Service.

The Second Atlas of the Breeding Birds of Southern Québec (https://www.atlas-oiseaux.qc.ca/index_en.jsp) was a joint project between Environment and Climate Change Canada, QuébecOiseaux and Birds Canada. It was published in April 2019 and is based on data collected from 2010 to 2014. The results are compared with those from the first atlas, which was based on data collected between 1984-1989. Data from both atlases are available through Birds Canada's Nature Counts portal. This work provides up-to-date information on the distribution and conservation status of marshbirds in southern Québec.

- WHERE is the monitoring

Birds Canada's Marsh Monitoring Program is a citizen science and as such covers the more densely settled southern parts of the province, particularly in the St-Lawrence Lowlands.

The Canadian Wildlife Service Least Bittern Survey focuses on sites in southern Québec that are more difficult for citizen scientists to access.

The Second Atlas of the Breeding Birds of Southern Québec covered the part of Québec located south of 50.5 degrees N.

- HOW are they monitoring

Birds Canada's Marsh Monitoring Program survey window is from May 27 to July 12, with two visits to survey birds at least 10 days apart. The survey uses a semi-circular survey station with a 100 m radius. Playback is used and the birds present (seen or heard) are recorded as being within or outside the station. The survey lasts 15 minutes. The first five minutes are passive followed by five minutes with call playback, followed by another five-minute passive period. During the first ten minutes, focal species (see below) are recorded minute by minute. During playback, the broadcast call of each species or species group (Common Gallinule & American Coot) is 30 seconds long, followed by 30 seconds of silent listening. Last year's Participant Guide is attached. At the moment somewhere in the region of 150 stations are monitored each year.

For more detailed information about the Canadian Wildlife Service Least Bittern Survey, you will need to contact Benoît Jobin.

The Second Atlas of the Breeding Birds of Southern Québec was largely a citizen science based effort that used 10 km by 10 km survey squares . Most participants probably surveyed passively, though some will have used playback. Data from Birds Canada's Marsh Monitoring Program collected between 2010 and 2014 supplemented the Atlas database.

- WHICH species

Birds Canada's Marsh Monitoring Program has the following suite of focal species: the Pied-billed Grebe, American Bittern, Least Bittern, Yellow Rail, Virginia Rail, Sora, Common Gallinule and American Coot. However, all bird species present are recorded. Individuals of non-focal species are placed in the first of the three five minute periods in which they were recorded, rather than being recorded minute by minute. Two of the focal species, the American Bittern and Yellow Rail, do not feature on the broadcast calls. During the call playback period, the call are played in the following order: Least Bittern, Sora, Virginia Rail, Common Gallinule & American Coot, and Pied-billed Grebe.

The Canadian Wildlife Service Least Bittern Survey is species-specific

The Second Atlas of the Breeding Birds of Southern Québec focused on all species present.

Rhode Island - State biologists and volunteers conducted marsh bird surveys in the early 1980's to establish baselines (areas of occurrence and population estimates) and contribute to the first RI Breeding Bird Atlas. Surveys were conducted primarily from early May to early June. Several freshwater habitats were visited but multiple visits per year were not possible. Some sites were visited across several years. Playbacks were used but not with systematic protocols. Target species were American Bittern, Least Bittern, Virginia Rail, and Sora but information on other species (Marsh Wren etc.) were collected ancillary to main surveys.

Biologists from the Rhode Island National Wildlife Refuge Complex conducted secretive marshbirds surveys from 2006 to 2008 on federal lands in the towns of Narragansett, South Kingstown, Charlestown, and Middletown. Surveys used playbacks following protocols from the Standardized North American Marsh Bird Protocol (SNAMBP). Conway provided a playback recording based on the species most likely to occur [Clapper Rail (CLRA), King Rail (KIRA), Virginia Rail (VIRA), Sora (SORA), Black Rail (BLRA), Common Moorhen (COMO), Pied Billed Grebe (PBGR), American Bittern (AMBI), Least Bittern (LEBI)].

As part of the RI DEM's RI Breeding Bird Atlas 2.0, a coordinator from URI and trained biological technicians surveyed 34 fresh and saltwater sites across the state during the period 2015-2019. These were sites that either a) had detections of secretive marsh birds in the first state bird atlas and no detections in the second atlas by volunteers or, b) were sites deemed to be of appropriate habitat to support target species. At these sites, surveyors used a hybrid point-count methodology adapted from the SHARP project—a series of silent periods followed by broadcasts were used and all species detected were recorded in a distance bin from the observer. Additionally, 21 point locations were visited at control and restoration sites along the southern Rhode Island coast, at which surveyors strictly followed SHARP point-count methodology.

South Carolina - Secretive marsh bird surveys were last conducted on a state-wide scale during 1991-1992 by state biologists and technicians. These call-response surveys included American Bittern, Least Bittern, Black Rail, King Rail, Purple Gallinule and Pied-billed Grebe. During 2013, a Clemson University student and technician completed surveys in the Winyah Bay/Santee Rivers and ACE Basin areas using the Standardized North American Marsh Bird Protocol

(broadcasting Black Rail, Clapper Rail, and Least Bitterns, Roach thesis). Marsh bird survey during 2014 – 2019 focused nearly exclusively on detecting Black Rails in coastal counties. Protocols evolved between 2014 and 2017 as the behavior of the rails and local environmental conditions were better understood, but all included the playback of Black Rail vocalizations and at least three repetitions at each survey point between April and July, spaced at least 10 days apart. Surveyors included state and federal biologists and a variety of other partners including volunteers. Other marsh bird species were not recorded during most of the Black Rail survey efforts, and the habitat surveyed for Black Rails was not representative of the available habitat for other species in the state. Although coast-wide efforts ended in 2016, state biologists and technicians have continued to conduct targeted surveys for Black Rails at two SCDNR wildlife management areas. Detailed protocols from 2014-2020 are available upon request. Federal biologists and technicians completed marsh bird surveys on federal properties throughout the southeast during the past few years however I am not familiar with the protocol details.

Vermont - Vermont's marsh bird monitoring efforts have been very limited. There are no ongoing monitoring efforts, though folks are interested in the idea. I believe Allan Strong (PhD, Professor at University of Vermont) has some data (early-mid 2000s?) from surveys using North American Marsh Bird Protocol or something similar. Allan also had a graduate student that surveyed for least bittern (29 sites in multiple areas of the state, using both playback and passive listening). Results published: Cherukuri, A., A. M. Strong, and T. M. Donovan. 2018. Monitoring Least Bitterns (Ixobrychis exilis) in Vermont: Detection Probability and Occupancy Modeling. Northeastern Naturalist 25:56-71.

Virginia - Although no formal monitoring of secretive marsh birds is taking place in Virginia, individual research and survey projects have been implemented in the past few years. These include surveys by the Center for Conservation Biology at the College of William and Mary at Plum Island NWR (focused on LEBI, KIRA, VIRA, CLRA, COGA); surveys associated with research by Eastern Carolina University at Back Bay NWR (focused on BLRA and KIRA); and surveys associated with research on KIRA and CLRA in tidal marshes near the confluence of the Mattaponi and Pamunkey Rivers by West Virginia University in collaboration with the Virginia Department of Game and Inland Fisheries (DGIF). In 2020, DGIF is coordinating a new round of secretive marsh bird surveys (focused on KIRA, VIRA, LEBI and AMBI) that will include various freshwater/oligohaline tidal marshes along the Rappahannock and Potomac Rivers. These surveys are a collaboration with various entities, including USFWS refuges, VA Department of Conservation and Recreation's Natural Heritage Program, and NOVA Parks. The purpose of the surveys is not to monitor, but rather to establish better baseline data on distribution and abundance of these priority marsh bird species. It is hoped that the surveys can be expanded in future years. The surveys will use the Standardized North American Marsh Bird Protocol with some modifications to survey period (mid-May into mid-June) and number of repetitions (two survey rounds rather than three). Given the current situation with COVID-19, the ability of the various partners to lead or participate in the surveys may vary in 2020.

In 2020, breeding black rail surveys will be conducted in an effort to mitigate the mortality of a female in breeding condition found under a 750 ft. tall instrumentation tower on Wallops Island, VA during a routine mortality survey in late May, 2019. The cause of death was attributed a tower strike. The black rail is a state endangered species and the discovery of the carcass on Wallops Island has led to questions about a possible residual seaside population of black rails in northern Accomack County. Systematic survey of habitats within ten kilometers of the tower will be conducted from May 1 – July 15, 2020.

West Virginia - In WV, marshbird monitoring has not been conducted for many years, in part because of resources diverted to complete our 2nd atlas. We are at present assembling equipment, forms, etc. to restart the program per the Standardized NA Marsh Bird Protocol. Surveys will be point-count type. Will be coordinated by WVDNR.

Suitable marshbird habitat in WV is extremely local and small in size. In 2020 surveys will be conducted at a subset of sites, with expanded surveys to come. Examples include Canaan Valley National Wildlife Refuge, Tucker County; Green Bottom Wildlife Management Area, Cabell County; and Altona Marsh, Jefferson County.

Species targeted: King Rail, Sora, Virginia Rail, American Bittern, Least Bittern, Common Gallinule, and Pied-billed Grebe