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# STANDARDIZED NORTH AMERICAN MARSH BIRD MONITORING PROTOCOLS

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## *Introduction*

The amount of emergent wetland habitat in North America has declined sharply during the past century (Tiner 1984). Populations of many marsh birds that are dependent on emergent wetlands appear to be declining (Tate 1986, Eddleman et al. 1988, Conway et al. 1994, Conway and Sulzman 2007). Despite evidence of population declines and the need to set responsible harvest limits, a monitoring program specifically designed to determine status and estimate population trends of marsh birds is lacking. The Breeding Bird Survey includes survey data on some secretive marsh birds, but does not adequately sample emergent wetlands (Bystrak 1981, Robbins et al. 1986, Gibbs and Melvin 1993, Lawler and O'Connor 2004). Marsh birds include all species that primarily inhabit marshes (i.e., marsh-dependent species), and many of these species are considered "inconspicuous" or "secretive." Primary species of concern in North America include King Rails (*Rallus elegans*), Clapper Rails (*Rallus longirostris*), Virginia Rails (*Rallus limicola*), Soras (*Porzana carolina*), Black Rails (*Laterallus jamaicensis*), Yellow Rails (*Coturnicops noveboracensis*), American Bitterns (*Botaurus lentiginosus*), Least Bitterns (*Ixobrychus exilis*), Pied-billed Grebes (*Podilymbus podiceps*), Limpkins (*Aramus guarauna*), American Coots (*Fulica americana*), Purple Gallinules (*Porphyrula martinica*), and Common Moorhens (*Gallinula chloropus*). The U.S. Fish and Wildlife Service (USFWS) has identified Black Rails, Yellow Rails, Limpkins, and American Bitterns as *Birds of Conservation Concern* because they are relatively rare and we lack basic information on status and trends in most areas (USFWS 2002). Moreover, Yellow Rails, Black Rails, Clapper Rails, and King Rails are 4 of the 139 "Focal" species that USFWS has given management priority because they pose special management challenges (USFWS 2005). Black Rails, Yellow Rails, and Saltmarsh Sharp-tailed Sparrows are 3 of the 20 species on the National Audubon Society's national 'Watchlist' because they are the 'most imperiled' species (National Audubon Society 2007). Many U.S. states consider these species threatened or of special concern for similar reasons. King Rails are federally endangered in Canada, Least Bitterns are federally threatened in Canada (COSEWIC 2002), and Black Rails are federally endangered in Mexico (Diario Oficial de la Federacion 2002).

Populations of marsh birds may be affected by accumulation of environmental contaminants in wetland substrates because they consume a wide variety of aquatic invertebrates (Odom 1975, Klaas et al. 1980, Eddleman et al. 1988, Gibbs et al. 1992, Conway 1995). Marsh birds are also vulnerable to invasion of wetlands by many invasive plant species (e.g., *Lythrum salicaria*, hybrid *Typha*, *Phalaris arundinacea*, *Phragmites*, etc.) (Gibbs et al. 1992, Meanley 1992). Hence, marsh birds may represent "indicator species" for assessing wetland ecosystem quality, and their presence can be used as one measure of the success of wetland restoration efforts. Marsh birds also have high recreational value; many species are highly sought-after by recreational birders. Finally, several rails are hunted in many states yet we lack responsible population surveys on which to base harvest limits. For these reasons, numerous federal agencies are cooperating to monitor marsh bird populations in North America to estimate population trends. Continued monitoring will also allow resource managers to evaluate whether

management actions or activities adversely impact wetland ecosystems. Any management action that alters water levels, alters salinity, reduces mudflat/open-water areas, alters invertebrate communities, or reduces the amount of emergent plant cover within marsh habitats could potentially affect habitat quality for marsh birds (Conway 1995). The survey protocol outlined below is a standardized survey methodology intended for use on National Wildlife Refuges and other protected areas across North America (see website at http://www.cals.arizona.edu/research/azfwru/NationalMarshBird/).

***Objectives of program***

This survey protocol is intended to provide guidance to individuals planning to survey marsh birds to reach different objectives. The most commonly-stated objectives include: 1) document presence or distribution of marsh birds within a defined area, 2) estimate or compare density of secretive marsh birds among management units, wetlands, or regions, 3) estimate population trend for marsh birds at local or regional scale, 4) evaluate effects of management actions (often actions that target other species) on secretive marsh birds, and 5) document habitat types or wetland conditions that influence abundance or occupancy of marsh birds. This standardized monitoring protocol allows data sharing and comparisons among sites. USFWS has a vested interest in marsh bird populations and their habitats because they are a trust species, under the protection of the USFWS. The National Wildlife Refuge System of the USFWS has participated in this program since the outset because the refuge system has a disproportionate amount of wetland within their boundaries, and the management actions employed by refuges have the potential to dramatically affect marsh bird populations.

***Density, abundance, and detection probability***

Abundance is the total number of birds within a defined area of interest. Density is abundance divided by area, or the number of birds/ha of wetland (or birds/ha of emergent vegetation within a wetland) during one season. Surveys rarely count all individuals present in the sampling area because detection probability is typically less than 100%. Estimates of abundance or density rely upon estimates of detection probability and either 1) a **consistent** positive correlation between number of individuals detected during a survey and number of individuals actually present in the area sampled (i.e., low spatial and temporal variation in detection probability), or 2) incorporating environmental covariates into the estimation process that effectively control for most of the variation in detection probability. Few reliable estimates of detection probability during marsh bird surveys are currently available (but see Conway et al. 1993, Legare et al. 1999, Conway and Gibbs 2001, Bogner and Baldassarre 2002). However, these survey protocols incorporate methods for estimating components of detection probability. This aspect will allow validation of counts based on call-broadcast surveys for *focal* marsh bird species. *Focal* marsh bird species are those species for which the Marsh Bird Monitoring Program is designed to monitor well. We will also evaluate the usefulness of distance sampling to provide estimates of density because surveyors will estimate distance to each focal bird detected.

***Population trend***

Population trend is the percent annual change in population size for a particular species at

some defined spatial scale. Estimates of population trend allow managers to determine whether local or regional marsh bird populations are declining. Managers can establish *a priori* population trend thresholds or trigger points below which immediate management action should be taken. Such actions can prevent local extinctions by identifying population problems before they become severe. One can estimate population trends of marsh birds by using weighted linear regression to estimate annual changes in the number of individuals detected per survey point for each target species. The North American Breeding Bird Survey provides estimates of population trends for some species of marsh birds, but has insufficient data to estimate trends of the more secretive/rare species.

***Survey routes***

More detailed guidelines on point placement within a refuge or management area are currently being developed by USFWS and U. S. Geological Survey (USGS). The number of survey points to include within a local refuge or management area (or the size of the survey area selected) is often dictated by personnel time available and other logistical constraints. A survey route is a permanent grouping of points that are surveyed during the same morning (or evening) survey window. All survey points should belong to one (and only one) permanent survey route. The number of points to include on a particular survey route can vary among routes based on the number of survey points that one surveyor can get done in a morning (or evening) survey window (see section below title *Time of day for surveys*). A surveyor may only be able to survey a small number of points (e.g., 6 or 8) in a morning or evening if points are far apart. This would constitute a "survey route". If travel between adjacent points is relatively easy and the wetland is large, a surveyor may be able to complete 15 or more points in one morning/evening and hence have 15 points on that survey route. All the survey points that make up one survey route do not have to be associated with the same marsh. Including fewer points per survey route and surveying an additional morning/evening (rather than fewer routes with lots of points) will typically result in more detections. Remember, marsh birds are typically most vocal in the 2 hours surrounding sunrise and the 2 hours surrounding sunset.

Once you choose the direction with which you conduct a particular survey route, be consistent (e.g., you always survey the points along route #1 in descending order: point 12 is surveyed first and point 1 is surveyed last). Being consistent in this respect will assure that each survey point is completed at approximately the same time of day during each replicate survey. This consistency will help to reduce the bias created by diurnal decreases in vocalization probability of marsh birds as the morning progresses (Conway et al. 2004).

*Location of survey points*

Fixed, permanent survey points are chosen and marked with inconspicuous markers in the field. Each survey point receives a unique identification number. Record the Latitude and Longitude of each survey point using a GPS receiver. If possible, locations of all survey points should also be plotted on maps of each wetland. Maps should include the direction in which the speakers are pointed during the survey at each point. This is not always obvious to someone who has not surveyed the route before, and may create unwanted variation in numbers detected if speaker direction is not consistent. Alternatively, the direction in which speakers are pointed could be indicated on a separate ‘point inventory list’. Survey points are located on either the

upland-emergent vegetation interface or the open water-emergent vegetation interface. Conducting surveys at points within contiguous patches of emergent marsh vegetation may not be practical in many inland wetlands because of the disturbance to emergent plants (and to calling rates of marsh birds) caused by walking through the dense vegetation. However, conducting surveys from upland edges, roadside edges, and open water edges may create some bias in estimation of population trends.

In order to determine the extent to which the placement of points biases results, surveyors should record the local context for each survey point:
1) along a ditch, dike, or berm with emergent vegetation on both sides,
2) along a ditch, dike, or berm with emergent vegetation on only one side,
3) along a public road with emergent vegetation on both sides,
4) along a public road with emergent vegetation on only one side,
5) along an grassland/emergent edge
6) along a scrub-shrub/emergent edge,
7) along a forest/emergent edge,
8) along an open water/emergent edge,
9) within a narrow water channel or tidal creek with emergent vegetation on both sides,
10) within a contiguous patch of emergent vegetation (also record distance from edge), or
11) other (and provide description of point placement).

A point is considered "along a public road" if the surveyor is within 25m of the roadside during the survey. Surveyors should also record the type of road (gravel, dirt, paved, etc.). This information is recorded in the Marsh Bird database when you first enter your points. In the Marsh Bird database, click on Points under 'Describe Marsh Bird Program' on the main menu. This will take you to a list of all your points (if they have already been entered). Click on the icon with green leaves under the Add/Edit column of the Habitat Desc. heading. This will take you to the Point Description page, the last item under 'Description header' is a drop down menu of 'Edge Type'. Select the choice that best describes the placement of the point.

*Point spacing*

Point spacing in previous studies has varied from 40m to 800m (Conway and Gibbs 2001). For setting up new routes associated with this standardized continental monitoring program, we recommend 400m between adjacent survey points to avoid the risk of double-counting individual birds and to increase the total area covered by monitoring efforts. If points are too close together (i.e., <400m apart), then the call-broadcast at one point may affect the distribution of birds at adjacent points (because birds within earshot often approach call-broadcast) and hence cause biases in many analyses. Individual refuges that want closer point spacing for some local reason should space points by an interval that is easily divisible by 400m (i.e., 200m, 100m). Analysts can choose to use data only from a subset of points (those that are 400m apart) at that particular site for the shared (pooled) data set if they choose to do so. In areas where survey routes have already been established and surveyed in past years, retain the original point spacing; do not delete, ignore, or move existing survey points even if spacing between adjacent points is very different than 400m. In marshlands that have access throughout

the marsh, points should be in a 400m grid system (hence, 1 point per 16 ha of marsh). If all possible points in the grid system cannot be surveyed, a random selection of points that can be surveyed should be selected from the potential survey points. Placement of survey points within the wetland is a sampling design issue and observers/survey coordinators should consult a statistician and/or refer to the USFWS' Standard Operating Procedures in the Sampling Protocols (Lor et al. 2008). In many locations, emergent marsh occurs in small patches less than 16 ha in size. In cases like these, include at least one survey point at all marshes >0.5 ha within the management area. Additional survey points should be added at small marsh patches as long as they are 400m away from all other survey points.

*What if area around an existing point is no longer suitable marsh bird habitat?*

Original survey points are never dropped from the survey and are always visited in subsequent years. If no suitable habitat is present at an existing survey point during a particular year (i.e, due to drought or change in water flow), then the surveyors should still make an entry for that point on the datasheet but write in the *Comments* column that "no survey conducted because suitable emergent vegetation is not present". If surveyors do not conduct a survey at one or more existing points, they must record in the database the reason why a survey was not conducted at those points:

1) lack of suitable habitat (due to temporary change such as flooding, drought, mowing, etc)
2) lack of suitable habitat (due to permanent change)
3) survey not attempted due to logistical reasons.

This information should be entered into the online database here:

*Time of day for surveys*

Surveys can either be conducted in the morning or evening. However, once a time period is chosen, that time period for those survey points or points along the survey route cannot be changed. The morning or evening survey period should correspond to when marsh birds are most vocal in your area. Vocalization probability is typically highest in the 2 hours surrounding sunrise and the 2 hours surrounding sunset - choose the optimal daily survey time(s) for your region and stick to them each year. Including both morning and evening surveys into a standardized monitoring protocol provides added flexibility and more potential survey hours for field personnel.

Morning surveys begin 30 minutes before sunrise and should be completed prior to the time when marsh birds cease calling (this time varies regionally, but is often 2 hours after sunrise in southern latitudes and 3 hours after sunrise in northern latitudes). The time in the morning when marsh birds cease calling also varies with temperature and time of year.

Evening surveys should begin 2 hours before sunset and must be completed by 30 minutes after sunset. When conducting evening surveys, surveyors should start their survey route such that they finish the last point when it is becoming too dark to see their datasheet. The half hour between sunset and complete darkness is often when detection probability is highest.

*Number of surveys per year and seasonal timing of surveys*

Optimal seasonal timing for surveys will vary regionally depending on breeding chronology of the focal marsh birds (Appendix 2) in your area. Conduct at least 3 surveys

annually during the presumed peak of the marsh bird breeding season. The peak breeding season in each location will vary among the coexisting marsh birds in that area. For example, American bitterns often breed earlier than both least bitterns and rails in some regions, and clapper rails and king rails breed earlier than Virginia rails and soras in some regions (also see Rehm and Baldassarre 2007). To account for this variation among coexisting species, at least one survey should be conducted within each of the three 15-day survey windows. The 3 survey windows vary regionally and are based on average minimum temperatures in May (Appendix 1). The 3 survey windows increase your probability of conducting at least one survey during the peak seasonal response period of all focal marsh bird species in your area. In many areas, migrants are still moving through when the breeding season is well underway for local breeders. Hence, some surveys will occur prior to when migration is completed for many marsh birds.

A common goal of marsh bird surveys is to estimate trends over time in the number of breeding adults of each target species, so we want to complete all 3 annual surveys prior to the initiation of juvenile vocalizations. At least three surveys are needed to confirm seasonal presence/absence of some marsh bird species in a wetland with 90% certainty (Gibbs and Melvin 1993). Three replicate surveys per year is also warranted because personnel organizing surveys often do not know the local timing of the breeding cycle of their target species at the outset of their survey effort (Rehm and Baldassarre 2007). Finally, including three or more surveys per year will allow us to estimate the proportion of sites occupied by each species (MacKenzie et al. 2002). However, if for some reason you can not conduct a minimum of 3 surveys on your area, your data can still be used for many purposes (i.e., to estimate detection probability, to compare passive with call-broadcast survey methods, to estimate trend).

Contact the program coordinator (see contact information below) if you feel that the 3 annual survey windows do not adequately capture the peak breeding seasons of the target species in your area.

*Surveys in tidal marshes*

When possible, surveys in tidal marshes should always be conducted at a similar tidal stage for each replicate survey both within and across years. The tidal stage within which to conduct local marsh bird surveys should be based on when highest numbers of marsh birds are likely to be detected in your area; optimal tidal stage for surveys may vary among regions. Many salt marsh passerines are forced to renest during the peak spring high tide, and detection probability is highest during the week after a high spring tide. Clapper rail surveys have been timed to coincide with a high tide since 1972 at San Francisco Bay NWR, but high tide was a period of reduced vocalization probability for clapper rails in southern California (Zembal and Massey 1987) and for black rails in northern California (Spear et al. 1999). Tidal stage did not appear to affect detection probability of clapper rails in Mississippi (S. Rush, pers. comm.).

If no local data are available on optimal tidal stage for conducting marsh bird surveys, surveyors should try to conduct surveys on days when high or low tide does **not** fall within the morning (or evening) survey window (i.e., conduct surveys when tides are coming in or out). Record the following: 1) time of the closest high tide (either the high tide before or after the survey - whichever is closer) for each survey point, and 2) tidal amplitude (difference in water level in meters between the highest and lowest tide on that day) on the day of the survey.

*Survey methods*

These standardized survey methods for marsh birds originated from suggestions during two multi-agency workshops at Patuxent Wildlife Research Center designed to aid agencies developing marsh bird monitoring programs (Ribic et al. 1999, USFWS 2006), and incorporate suggestions from Conway and Gibbs (2001) and recent methodological advances in estimating detection probability and observer bias (Nichols et al. 2000, Farnsworth et al. 2002, MacKenzie et al. 2002). Because many marsh birds are secretive, seldom observed, and vocalize infrequently, we will use broadcast calls to elicit vocalizations during our vocal surveys (Gibbs and Melvin 1993, Conway et al 2004, Conway and Gibbs 2005). However, because we want to estimate detection probability, estimate density using distance estimators, analyze data without the biases associated with call-broadcast (Conway and Gibbs 2001), and survey non-focal species, we will also record birds during a 5-minute passive period prior to broadcasting marsh bird calls. Hence, surveyors will record all focal species (Appendix 2) detected during both a 5-minute passive period prior to broadcasting recorded calls, and during a period in which pre-recorded vocalizations of focal marsh birds are broadcast into the marsh.

The recorded calls should be obtained from the Marsh Bird Survey Coordinator (contact info below); request a CD or MP3 file of the focal species that breed in your area, and we will ensure that it coincides with the protocol. The CD or MP3 file should include exactly 30 seconds of calls of each of the focal marsh bird species that are expected breeders in your area interspersed with 30 seconds of silence between each species' calls. The 30 seconds of calls consist of a series of the most common calls for that species interspersed with approximately 5 seconds of silence. For example, an entire survey sequence might look like this:

5 minutes of silence (include a verbal statement at the end of each minute to alert surveyors)
30 seconds of calls of first focal species configured like this:
- 3 Least Bittern *coo-coo-coo* calls
  - 6 seconds of silence
- 3 Least Bittern *coo-coo-coo* calls
  - 6 seconds of silence
- 4 series of Least Bittern *kak* calls

30 seconds of silence
30 seconds of calls of second focal species configured like this:
- 2 Sora *whinny* calls
  - 5 seconds of silence
- 3 Sora *per-weep* calls
  - 5 seconds of silence
- 4 Sora *keep* calls

30 seconds of silence
30 seconds of calls of third focal species
- etc.

include a verbal "stop" at end of the final 30 seconds of silence so that surveyors know when to stop the CD (and stop the survey at that point).

*Broadcast equipment and placement*

The broadcast player should be placed upright on the ground (or on the bow of the boat), and sound pressure should be 80-90 dB at 1 m in front of the speaker. Use a sound-level meter to adjust volume of the broadcast player at the beginning of each day. If sound quality distorts when volume on your broadcast equipment reaches 80-90 dB, you should obtain higher quality broadcast equipment or obtain a new CD. If the ground is wet, place the speaker on an object as close to the ground as possible. Surveyors should stand 2 m to one side of the speaker while listening for vocal responses (standing too close to the speaker can reduce the surveyor's ability to hear calling birds). Surveyors should point the speaker toward the center of the marsh and should **not** rotate the speaker during the call-broadcast survey. Speakers should be pointed in the same direction for all replicate surveys. At points where it is not obvious which direction to point the speakers (i.e., on a road or in a canal bisecting two marshes), surveyors should record the direction of the speakers at each point on a map and on their data sheets and refer to this information on all replicate surveys. Visit the program website to see a list of suitable CD and MP3 players, and a list of amplified speakers: http://www.cals.arizona.edu/research/azfwru/NationalMarshBird/).

*Species to include in the survey effort*

Surveyors must make 3 decisions regarding the species to include in their survey effort: 1) which species will be recorded on their datasheet, 2) of those species recorded, which species will be recorded during the one-minute segments (i.e., each individual bird of these species will be recorded on a separate row on the datasheet), and 3) of those species recorded, which species calls' will be included in the call-broadcast sequence (Appendix 3). Staff from the USFWS National Wildlife Refuge System has provided guidance on making these decisions for refuges (Appendix 6). The program website provides a map overlaying the breeding range of each focal species by USFWS Region (http://www.cals.arizona.edu/research/azfwru/NationalMarshBird/, then click on *Field Methods* and then *breeding distribution*). Surveyors should examine this map to help determine which focal species likely breed in their area and use this information to determine the species to include in the broadcast sequence. For general inventory to document status and distribution, one would include all possible focal species in their area. For estimating population trends, one might focus on species that are sure to be detected year to year.

*Species to include in the call-broadcast sequence*

In general, surveyors should include in their survey all of the following species that are thought to breed in the marshes in their area: King Rail, Clapper Rail, Virginia Rail, Sora, Black Rail, Yellow Rail, American Bittern, Least Bittern, Pied-billed Grebe, Limpkin, American Coot, Purple Gallinule, and Common Moorhen. The number of species included on the call-broadcast portion of the survey increases the duration of the survey by 1 min per species at each point. So, with 8 species, you will spend 13 minutes (including the initial 5 min passive listening period) at each point. If a surveyor is within the breeding range of the American Coot, Common Moorhen, or Pied-billed Grebe, broadcasting calls of any of these species is considered optional but strongly recommended (Appendix 3). However, all surveyors should still record all detections of these species (see Appendix 3), even if they do not include one (or all 3!) of these "focal" species in their broadcast sequence. Participants conducting surveys on National Wildlife

Refuges should see Appendix 6 for guidance on which focal species to include in their broadcast sequence. Use this Appendix only as guidance and contact the coordinator (see end of document) if you can recommend corrections to this list of suggested species for a particular NWR. The species listed in Appendix 6 are based on maps of the breeding ranges of the focal species, but these maps are not always accurate at identifying the species that breed locally at a particular refuge. If someone has good local knowledge of the species of secretive marsh birds that breed on a particular refuge, they should contact the Program Coordinator to have the species list in Appendix 6 updated or verified (even if no changes are necessary). As that occurs, we will update Appendix 6 to indicate which refuges have had their species lists verified. It is important to keep this list in Appendix 6 up-to-date, so please verify the list of focal species for your refuge by asking people who are familiar with the marsh birds in your area and send any suggested additions or subtractions to the Program Coordinator.

The broadcast sequence includes calls of the focal marsh bird species that are expected breeders in that area and is broadcast using a portable CD or MP3 player with amplified speakers. The marsh birds included in the call-broadcast sequence on the CD will vary among survey areas, but will always be consistent within a particular survey area across replicate surveys and across years. Recommended species to include in the call-broadcast sequence for a particular survey route (ie, at a particular refuge or management area) is attached (Appendix 3). The goal is to include all of the focal species believed to be potential local breeders (species for which you might reasonably expect to get responses during the breeding season). Order of calls start with the least intrusive species first, and follow this chronological order: Black Rail, Least Bittern, Yellow Rail, Sora, Virginia Rail, King Rail, Clapper Rail, American Bittern, Common Moorhen, Purple Gallinule, American Coot, Pied-billed Grebe, Limpkin. The calls used for broadcast include at least the primary advertising call of each species (e.g., '*whinny*' for Sora, '*grunt*' for Virginia Rail, '*clatter*' for Clapper Rail, '*click-click-click-click-click*' for Yellow Rail, '*coo-coo-coo*' for Least Bittern, '*pump-er-lunk*' for American Bittern). Other calls associated with reproduction are also included for many of the species. Including all the common calls associated with reproduction of each species on the broadcast sequence will increase detection probability during different times of the breeding season and can help surveyors learn the less common calls of each target species. A list of common calls for each target species is attached (Appendix 4). Calls given while flying or after being flushed (not associated with reproduction) are probably not useful to include in the broadcast sequence.

*Estimating distance to each focal bird*

Surveyors should estimate the distance from the survey point to each individual bird. Estimate distance to each bird when the bird is first detected (birds will approach the call-broadcast [Legare et al. 1999, Erwin et al. 2002] so surveyors need to record the distance to the bird when the bird was first detected). Recording distance to each individual will allow us to use distance sampling to estimate density for each species in each habitat type. Density indices by habitat type are useful because they allow managers to extrapolate survey data to estimate a minimum number of each marsh bird species on their entire management area. The distance at which most individuals are detected varies among the focal species (Conway and Nadeau 2006a). Surveyors are encouraged to use a range finder to help them determine the distance to specific landmarks surrounding each survey point, which will help estimate the distance to

calling marsh birds. Other methods for improving one's ability to estimate distance include: 1) tying surveyors flagging at 50m and 100m away from each survey point in each cardinal direction, 2) carrying aerial photos of the marsh with 50m-, 100m-, and 200m-radius circles drawn around each survey point. Estimating the distance to some individual birds will involve a lot of uncertainty (i.e., estimating distance to birds 5m from the surveyor is much easier than estimating distance to birds that are >100m away). Surveyors should enter on the datasheet and in the database which of the following distance estimation aides they used: Unaided, Distance Markers, Range Finder, Range Finder and Maps, Maps or Aerial Photos, or Distance Not Recorded. In the Marsh Bird database, you can indicate the distance estimation aid you used on the Bird Data Entry page when you are entering the data for each point.

*Filling out the data sheet*

An electronic copy of a data sheet should be obtained from the Survey Coordinator or the program website (http://www.cals.arizona.edu/research /azfwru/NationalMarshBird/) to ensure that all pertinent data are recorded properly. These data sheets can then be tailored by each surveyor to meet local needs as long as none of the standards in this protocol are compromised. The number of species columns on the data sheet will differ across survey areas. For example, if you intend to only broadcast calls of 3 species, then you will have an 8-minute survey sequence at each point (5 minutes of passive listening and 1 minute of call-broadcast for each of 3 species) and will need a data sheet with 8 response columns. If you intend to broadcast calls of 5 species, you will have a 10-minute survey sequence at each point (5 minutes of passive listening and 1 minute of call-broadcast for each of 5 species) and will need a data sheet with 10 response columns. See the example data sheet attached (Appendix 5). Prior to the beginning of the survey, write down the day, month, and year at the top of the data sheet. Write out the month or use a 3-letter acronym to avoid confusion between day and month (i.e., so that 6 May is not confused with 5 June). Also write the full name of all persons present during the survey. If more than one person was present, write down who recorded the data and **all** persons that helped identify calling birds. Using multiple surveyors to detect birds at a point may confound observer bias issues when estimating trend, so its important to record any and all surveyors who contributed to marsh bird detections (see paragraph regarding multiple-observer surveys at end of this protocol). Write down the name of the survey route and the name of the survey area and/or management area.

*Recording detections of focal, broadcast species*

When you arrive at the first survey point, write down the unique identification number of the survey point and the time. Start the survey. When an individual of a focal species (see Appendix 3 for list of focal species) is detected, write the species name in the "Species" column. You can use the 4-letter acronym for the species or write the full species name. A list of 4-letter AOU species acronyms is attached to this protocol (Appendix 2). Put a "**1**" in each detection column in which that individual is detected aurally and put a "**s**" in each column in which the individual is detected visually (including flying overhead). For example, if an individual Virginia Rail vocalizes during the first 1 minute of passive listening, put a "**1**" in the first column. Regardless of whether that individual calls once or many times during the first minute, you only put one "**1**" in the first column. If that same individual bird is still calling during the second minute of passive listening, then also put a "**1**" in the second column. If the same

individual calls during the 30 second when Sora calls are being broadcast or the 30 seconds of silence immediately following the Sora sequence, put a "**1**" in the column for "SORA". If that same individual bird calls again during the Virginia Rail sequence, you also put a "**1**" in the column "VIRA", and so on. Hence, if an individual bird is calling constantly throughout the survey period, you will have a "**1**" in every column for that individual. If the individual is heard **and** seen, put both a "**1**" and a "**s**" in the appropriate column(s). If you hear a call of the same species but from a different individual (or from an individual of another species), you start a new row on the data sheet and follow the same protocol just described for this individual bird. Recording whether each individual bird is or is not detected during each 1-min segment allows us to use removal models (Farnsworth et al. 2002) to estimate detection probability. Surveyors may have difficulty determining whether a call is coming from a new individual or a individual detected earlier at that survey point. Surveyors must often make this decision without seeing the bird by using their best judgement. In general, be conservative and assume that a call is from the same bird if the call came from the same general location (i.e., a similar direction and not too far from the location of the original call). The number of rows filled out on the data sheet will differ among survey points and will correspond to the total number of individual focal marsh birds detected at each point. If no marsh birds are detected at a survey point, record the point number and starting time, and write "no birds" in the *Species* column. A sample data sheet is included as an example of what survey data might look like (Appendix 5). If the surveyor hears a marsh bird but is unsure of its identity, the surveyor should write "unknown" in the *Species* column and record all data for this individual as described above. Make a verbal description of the unknown call in the *Comments* column (e.g., soft "kak-kak-grr" - sounds like BLRA but harsher'). This is for your own use (not entered into database) and will aid your future identification of unknown calls if that call is heard repeatedly. If time permits, the surveyor can return to the point with another expert birder who may be able to help identify that "unknown" bird or with sound recording equipment so that they can send the recording of the call to the Program Coordinator for identification. Some species of marsh birds give paired duets and surveyors can often distinguish pairs of birds during surveys. ALWAYS record both members of a pair on their own individual row of the datasheet. Record "pair" in the *Comments* columns for both of the 2 birds that are thought to be members of a mated pair. To record pairs in the database, you can edit the data entry screen of the Marsh Bird database to allow you to identify pairs. In the Marsh Bird database click on Set Preferences under 'Describe Marsh Bird Program' on the main menu. This will take you to the Edit Preferences page, the seventh item on the page is 'Record mated individuals in marsh bird surveys (Black Rail surveys)'. Select 'Yes' and an extra column is added to the data entry screen that allows you to indicate any two birds as a pair.

*Recording detections of focal, non-broadcast species*

Whenever possible these species (see Appendix 3) are recorded the same way as 'focal, broadcast species' above, but their calls are just not broadcast during the call-broadcast portion of the survey. If surveyors are overwhelmed by the number of focal birds detected, then they record these species differently than the focal, broadcast species (see the section below titled *What to do if the surveyor becomes overwhelmed with too many detections*).

*Recording detections of non-focal species* (OPTIONAL)

Surveyors have the option of recording non-focal species. Some surveyors may want to record all species detected (including passerines, waterfowl, raptors, etc) or perhaps a subset of all species detected (i.e., include marsh-dwelling passerines, wading birds but not all species) during their marsh bird surveys. Others will want to focus their attention only on the focal marsh birds (especially in areas where densities of secretive marsh birds are relatively high). To accommodate this flexibility, each surveyor can record species in addition to the focal species listed in Appendix 3. At each point, record the total number of each non-focal species detected within each of 3 distance categories (≤50m, 51-100m, and >100m). Individual birds of non-focal species do not receive their own line on the data sheet and surveyors do not need to record detections of non-focal birds using the 1-min segments (Conway and Droege 2006), but can if they wish.

The non-focal species included by a surveyor will depend on the marsh birds of interest at that refuge, management area, or physiographic region. For example, surveyors may want to include non-focal species which are thought to be declining or which are not sampled well by other survey efforts. However, analysts will need to know which additional species were being recorded in order to make these data meaningful (i.e., if no YHBLs are recorded at a point, we need to know whether a surveyor detected zero YHBLs or merely did not record YHBLs on their survey). Therefore, each surveyor must enter in the database their list of "non-focal" species that they were recording during their survey. Please take into consideration that the number of "non-focal" species included in your survey effort may reduce your ability to record all the relevant data for the 24 focal species that are the focus of this monitoring protocol. Moreover, many of the non-focal species may be adequately sampled already by the North American Breeding Bird Survey.

*Record types of calls given*

Knowing seasonal patterns of different call types in a local area provides useful information. For example, the frequency of different calls given (e.g., single *clatter*, paired *clatter*, *kek*, or *kek-burr* for a clapper rail) varies throughout the season. Frequency of different calls given may also vary across regions. Different call types have different functions and can indicate pairing status and stages of the nesting cycle in a local area (allowing refinement of local survey windows). Moreover, detection probability and observer bias may differ with different call types (e.g., least bittern '*kak*' and the first part of a Virginia rail '*tick-it*' can be confused with clapper rail '*kek*' calls) and accuracy of distance estimation may vary with call type (Conway and Nadeau 2006a). Hence, incorporating call types into trend analyses can potentially increase power to detect true population trends. For these reasons, surveyors are encouraged to record all types of calls given for each target marsh bird detected in the *Calls* column on the data sheet (see sample data sheet; Appendix 5). Refer to the program website to listen to examples of each common call type: http://www.cals.arizona.edu/research/azfwru/NationalMarshBird/.

*Birds detected at a prior survey point or between points*

If surveyors detect a new bird immediately after the survey period at a particular point (or while walking between points) they should record these birds on a separate row and record "yes" in the *Outside Survey* column. If a surveyor detects a focal bird during a survey and the surveyor

believes that this is the same individual bird that was detected and recorded at a previous survey point, the surveyor should record all the relevant data for that bird and then enter a "Yes" in the *Detected at a Previous Point* column on the datasheet. When in doubt, be conservative as to whether an individual bird detected at the current point was the same individual recorded at a previous point (i.e., record "Yes" when in doubt).

Recording birds that were detected outside of the standardized survey times (i.e, outside of the 10-min survey at a point) can be useful because these birds are secretive and rarely vocalize. For inventory purposes, surveyors do not want to ignore these detections, especially if, for example, that is the only black rail detected all day. However, a problem arises if one of these birds detected outside of the standardized survey period is then detected at a subsequent point **during** the standardized survey period. For example, suppose that: 1) the surveyor detects a black rail after the 10-min survey period at point #3 and records that bird on its own row on the datasheet (and writes "No" in the *Detected at a Previous Point* column and "yes" in the *Outside Survey* column), and 2) the surveyor then detects that very same black rail during the 10-min survey period at point #4. This creates a problem if the surveyor writes "Yes" in the *Detected at a Previous Point* column for the entry at point #4 and here is why: For many analyses (including estimates of population trend) analysts may want to ignore all entries that have a "Yes" in the *Detected at a Previous Point* column so that all individual birds are counted only once. In the scenario above, the black rail would have been ignored from trend analyses. Hence, for the situation described above, the surveyor should write "No" in the *Detected at a Previous Point* column for the entry at point #4, and then go back and change the "No" to "Yes" in the *Detected at a Previous Point* column for the initial entry for this bird at point #3 (when it was detected after the 10-min survey period).

*Recording whether focal birds are within the "target area"*

One goal of this effort is to document the effects of management actions on marsh birds, but often times there may be adjacent areas that have undergone different management actions. This presents a problem if some birds detected at a survey point are within one area but others are within another area (with a different management history). In other words, some participants that use this protocol will have certain survey points that were located specifically to count birds within a certain "target area". For example, 4 points along a survey route were located with the intent to count marsh birds within "impoundment A" and 5 points along that same survey route were located with the intent to count marsh birds within "impoundment B". However, surveyors at these 9 points detect birds both within these impoundments but also in adjacent areas outside these impoundments. We often would like to count all birds detected at each point, but also delineate which ones were within these impoundments. Hence, surveyors should record, to the best of their ability, whether each bird detected was or was not in their "target area". In the example above, the "target area" is impoundment A for points 1-4 and the "target area" is impoundment B for points 5-9. If some (or all) of your points are associated with a "target area", the name of that target area should be identified in the database for each point. Some participants may not have any "target area" associated with any of their survey points, and can therefore leave this column blank on the datasheet (and in the database). For example, you may not have any "target areas" associated with any of your survey points if you are conducting surveys primarily to estimate population trend, determine status and distribution, or to identify

habitat relationships. If the marshes you survey undergo different management actions, then it may be useful to identify a "target area" associated with each survey point and have your surveyors record whether each bird they detect at each point was or was not within that "target area". The "target area" may be different at each survey point along a survey route. If a participant has different management units or specific marshes that some of their survey points are intended to monitor (or if the participant sees value in differentiating among units/marshes), they should add a column to their datasheet titled "*In target area*" and record a Y or a N for each focal bird detected (see example in Appendix 5).

*What to do if the surveyor becomes overwhelmed with too many detections*

Because many of the focal species occur at relatively low densities through much of their range, many surveyors will detect few or no individual birds at any given survey point. However, some survey points within a survey area will have so many marsh birds calling that surveyors will find it impossible to record each 1-min segment during which each individual focal bird is detected. For example, a surveyor may see/hear >20 coots at one survey point. When many birds are calling simultaneously, it can be difficult for the surveyor to 1) decide whether they are hearing new individuals or previously-detected ones, 2) write new individuals on a new line of the datasheet, and 3) find the correct line where they wrote down previously-detected birds. In these situations, here are a few comments, observations, and suggested remedies. First, individual surveyors do get better at this with practice even with relatively high numbers of calling birds at a point. However, everyone has a threshold when the numbers of calling marsh birds get too high at a particular point. This problem occurs more frequently when a surveyor has many species in their call-broadcast sequence (and hence many detection columns on their datasheet). Below is a list of solutions to this problem in decreasing order of preference. A surveyor often does not know until after the survey has started at a particular point that he/she is becoming overwhelmed and is not effectively assigning the correct calls to the correct columns (individuals).

1) Include a circle on each row of the datasheet and make a 'tick' on each circle identifying the general direction of that individual (this will help you differentiate one individual from other individuals of that species as more are detected at that point - see the column titled "Direction" on Appendix 5 for an example).
2) If the problem is common on a particular survey route, reduce the number of species in your call-broadcast sequence (e.g., eliminate American coots, common moorhens, and pied-billed grebes from your call-broadcast sequence so that you have fewer species on your call-broadcast sequence). In other words, still record data for all individuals of all focal marsh bird species in the same way, but just reduce the # of columns on the datasheet (and length of the call-broadcast sequence).
3) For those focal species that are of lower management/conservation interest in your survey area (e.g., American coots, common moorhens, pied-billed grebes), simply write down an estimate of the total number of individuals detected within each of 3 distance categories ($\leq$50m, 51-100m, >100m) for that particular species at that point (e.g., write "AMCO: 0; 12; 23" on one line of the data sheet - see example on sample data sheet attached; Appendix 5). Only use the 1-min segments for the focal species of higher management concern (e.g., black rails, yellow rails, king rails, clapper rails, bitterns). It is important

that surveyors record on the datasheet (and in the database) times when they were overwhelmed and could not record data for individual birds on separate rows of the data sheet (for focal species).

*Distinguishing King Rails from Clapper Rails*

King rails breed in freshwater marshes and clapper rails breed in saltwater marshes (except the Yuma clapper rail that breeds in freshwater marshes in Arizona and California; Conway et al. 1993). Both species have similar calls. In marshes near coastal areas, surveyors may not be able to determine whether birds heard calling are king rails or clapper rails. In those situations, surveyors should record these individuals as KCRA (King-Clapper Rails).

*Recording ambient noise level at each point*

Surveyors should record the level of background noise during the survey at each survey point. This information can be used as a covariate in future analyses because level of background noise varies spatially and temporally and influences detection probability. Categorize the background noise at each point on a scale from 0 to 4 (or 9):

*0 = no background noise during virtually all of the survey,*
*1 = faint background noise during at least half of the survey,*
*2 = moderate background noise (probably can not hear some birds beyond 100m during >30 seconds of the survey),*
*3 = loud background noise (probably can not hear some birds beyond 50m during >30 seconds of the survey),*
*4 = intense background noise (probably can not hear some birds beyond 25m during >30 seconds of the survey).*
*9 = not recorded.*

*Weather restrictions*

Surveys should only be conducted when wind speed is <20 km/hr, and not during periods of sustained rain or heavy fog. Even winds <20 km/hr (12 mph) affect the detection probability of marsh birds. Surveyors should postpone surveys if they believe winds are affecting calling probability of marsh birds. Recommendations for conducting surveys in very windy locations include:

1) determine what time(s) of day have the least wind in your area. The daily survey windows in the protocol are recommendations; survey times should be modified under conditions where wind regularly affects vocalization frequency or observer detection rates. The important thing is that surveys are conducted during the same daily time window each year at a particular location, and the survey windows at a particular location should be the time of day or night that has the highest detection probability for your target species in your area. In some locations, surveys conducted after sunset (or before sunrise) may have higher detection probability compared to the morning and evening survey windows recommended in the protocol because strong winds are less frequent during the middle of the night. In these situations, surveys should be conducted at night.

2) try to be flexible with your schedule if you can. For example, plan to conduct a survey on a particular day but postpone to the following day if it is too windy, and keep postponing until you get a day that meets the acceptable weather criteria to complete the survey.

If wind speed increases to above 20 km/hr during the survey (or sustained rain begins while the survey is already underway), surveyors should stop the survey and repeat the entire survey route another day (i.e., don't just go back and repeat the remaining points on the route).

*Record weather conditions*

Record ambient temperature, wind speed, and sky condition at each survey point. We use the same wind speed codes and sky condition codes as the North American Breeding Bird Survey (see below). Record whether you measured the ambient temperature in degrees Celsius ($^{o}$C) or degrees Fahrenheit ($^{o}$F).

WIND SPEED CODES: (Enter Beaufort Numbers on data sheet, not mi/hr or km/hr)

| **Beaufort Number** | **Wind Speed Indicators** | **Wind Speed** | |
|---|---|---|---|
| | | **mi/hr** | **km/hr** |
| 0 | Smoke rises vertically | <1 | <2 |
| 1 | Wind direction shown by smoke drift | 1-3 | 2-5 |
| 2 | Wind felt on face; leaves rustle | 4-7 | 6-12 |
| 3 | Leaves & small twigs in constant motion; light flag extended | 8-12 | 13-19 |
| 4 | Raises dust and loose paper; small branches are moved | 13-18 | 20-29 |
| 5 | Small trees with leaves sway; crested wavelets on inland waters | 19-24 | 30-38 |

SKY CODES: (Enter these National Weather Service code numbers on data sheet)
0 - Clear or a few clouds
1 - Partly cloudy (scattered clouds) or variable sky
2 - Cloudy (broken) or overcast
3 - Sandstorm or dust storm, or drifting or blowing snow
4 - Fog or smoke or thick dust haze
5 - Drizzle
6 - Rain
7 - Snow or sleet (rain and snow mixed)
8 - Showers
9 - Thunderstorm (with or without precipitation)

*Recording water conditions associated with each survey point (or each management unit)*

Water level influences abundance and distribution of marsh birds. Water levels vary annually and even daily in some marshes and these fluctuations can explain spatial and temporal changes in marsh bird abundance. Some National Wildlife Refuges control water levels in some of their management units and have the ability to directly benefit marsh birds via water management. Hence, surveyors should place one or more water gauges for measuring water

level in permanent locations at points that have the same hydrologic regime (i.e., the same daily and annual fluctuations in water level) as the marshes being surveyed. If all marshes along a survey route are subject to the same hydrologic regime (i.e., all survey points are in the same river system or are in a single management unit with the same hydrologic regime), then only one water gauge is needed for that entire route. If a survey route has points split between ≥2 management units (or ≥2 areas with different hydrologic regimes), then ≥2 water gauges are necessary and surveyors should record on the data sheet the water gauge associated with each survey point. Water level at each water gauge should be recorded immediately before or immediately after a morning or evening survey route is completed. Each water gauge must be "re-set" (recalibrated) each year because freezing and thawing can cause gauges to move laterally. Water gauges should be placed in an area where the water is deepest to avoid zero readings when there is still water in other parts of the marsh. These water gauges are not meant to explain differences in birds detected among points along a route, but rather the readings from these water gauges will help explain variation in numbers of marsh birds detected across years and across the 3 annual surveys along each route. Hence, these water depths can be used as covariates in many analyses of marsh bird survey data (i.e, in estimates of trend).

Surveyors should record the type of water gauge used for measuring water depth (i.e., bathymetry, monitoring wells, piezometer, river readings at gauge, staff gauge stuck into the wetland, etc.). In the Marsh Bird database, you can indicate how you are measuring water depth by clicking on Points under 'Describe Marsh Bird Program' on the main menu. This will take you to a list of all your points (if they have already been entered). Click on the icon with green leaves under the Add/Edit column of the Habitat Desc. heading. This will take you to the Point Description page, scroll down until you reach the "Water Characteristic" section. Select the water measurement device from the 'Water Measurement Method' drop down menu.

*Recording salinity content of water*

In coastal marshes or any marshes with varying salinity levels, surveyors are encouraged to record the salinity content of the water directly in front of each point on each survey. Salinity levels affect habitat suitability for many species of marsh birds and such information is relatively easy to collect and can be used as a covariate to control for variation in models estimating population change. Moreover, salinity levels in coastal marshes may change with changes in sea levels as a result of climate change, so documenting changes in salinity levels over time will help document the effects of sea level rise. Surveyors can get a Portable Salinity Refractometer at Forestry Suppliers for $90 (http://www.forestry-suppliers.com/product_pages/View_Catalog_Page.asp?mi=5079).

*Record date of last natural disturbance*

Record the month and year of the last flood, wild fire, hurricane, monsoon, tornado, straightline winds, or other major disturbance that occurred in the 'target' area associated with each survey point. Record the month and year for each of those disturbance events that potentially affected marsh bird abundance or marsh bird habitat structure. Record these dates for each survey point, once per year (or more often if a natural disturbance occurs between 2 replicate surveys during the same year).

In the Marsh Bird database, you can record natural and man-made disturbances by clicking on Points under 'Describe Marsh Bird Program' on the main menu. This will take you to a list of all your points (if they have already been entered). Click on the icon with green leaves under the Add/Edit column of the Habitat Desc. heading. This will take you to the Point Description page, the fourth item under 'Classification & Disturbance' is a drop down menu of disturbances. Select the choice that best describes the disturbance that occurred at the point. The following is a list of the choices, as well as, the option of selecting 'other' and entering another type of disturbance:

| | | |
|---|---|---|
| chemical treatment | drained (drained wetland) | road construction |
| clear-cut | fire | selective harvest |
| building construction | ice damage | trail construction |
| destructive use (non-harvest) | insect damage | blow down / wind event |

*Record date of last management action*

Many common wetland management activities (i.e., prescribed fire, drawdown, flooding, disking, mowing, grazing, herbicide application) may affect abundance of marsh birds. For example, periodic burning of emergent marshes benefits Clapper Rails and Black Rails along the Lower Colorado River (Conway and Nadeau 2006b). Indeed, several refuges are involved with local studies examining the effects of fire on marsh birds. Hence, it would be useful for all surveyors to record the month and year of the last time each of the above management activities occurred in the 50-m radius area surrounding each survey point. This information will allow us to evaluate the effects of common management actions on marsh bird abundance at a large (continental) spatial scale with the pooled data.

The U.S. Fish and Wildlife Service has developed a web-based Refuge Management Actions Database (RMAD) specifically to store, retrieve, query, sort, and deliver National Wildlife Refuge System management actions. One of the purposes of RMAD is to enable managers and biologists to link management action data with wildlife and habitat monitoring data to facilitate science-based management. The USFWS Biological Monitoring Team provides periodic web-based training for RMAD and has posted a user's manual on their website (http://www.fws.gov/bmt/rmad.htm ). Access to RMAD can be gained by contacting Jennifer Casey or Todd Sutherland (jennifer_casey@fws.gov, todd_sutherland@fws.gov ).

*Wetland Habitat Measurements* (OPTIONAL)

Refer to the stand-alone document titled "Wetland Habitat Measurements associated with Marsh Bird Surveys", available on the following website: http://www.cals.arizona.edu/research/azfwru/NationalMarshBird/.

*Inclusion of an initial settling period* (NOT RECOMMENDED)

When surveyors are using a motorized boat or airboat to travel between survey points, the noise generated by the boat may cause birds to stop calling. In these situations, surveyors may choose to include a "settling" period of a fixed amount of time (e.g., 1 minute) prior to starting the 5-minute passive count at each point. Otherwise, we recommend that **no** settling period be included. If a surveyor includes an initial settling period prior to each survey, the

surveyor should keep that settling period constant for all future surveys at those points. If included, make the settling period a part of a written survey protocol for future surveyors and part of the datasheets for that site so that individuals wishing to repeat the effort in future years will know that a settling period was included.

*Multiple-observer surveys* (OPTIONAL)

Estimating detection probability associated with a particular survey protocol is essential when attempting to interpret count data produced from a monitoring program. The extent to which trends in count data represent the underlying trend in true abundance depends on detection probability and observer bias. One way to estimate observer bias associated with our survey effort is using the double-observer method (Nichols et al. 2000). This approach involves 2 or more trained surveyors recording data independently at a series of survey points (Conway et al. 2004, Nadeau et al. 2008). Hence, whenever possible, surveys should be conducted by 2 or more surveyors simultaneously. Each surveyor should fill out a separate data sheet and should record their data separately without discussing anything with the other surveyor. Surveyors should not point out a call or a bird to the other during the survey period. Each surveyor should stand 1-2 meters away from each other and should keep their pen on their data sheet at all times so that one surveyor is not cued by the sudden writing activity of another surveyor. Once the survey for that morning/evening is completed, the surveyors can look over each others data and discuss discrepancies, but the data should not be altered; obvious mistakes should be noted in the *Comments* column **but not changed** (the differences between the surveyors in number of birds detected at each point is what allows us to estimate surveyor bias so these differences should not be altered). For those conducting multiple-observer surveys, contact the Program Coordinator to obtain a form so that surveyors can record which birds were detected by both surveyors and which were only detected by one of the surveyors. Multiple-observer surveys will obviously not be possible at all times and at all locations, but try to use multiple surveyors whenever possible so that we can obtain sufficient data to estimate observer bias.

*Hearing tests* (OPTIONAL)

Surveyors are strongly encouraged to have a hearing test (audiogram) at a qualified hearing or medical clinic before, during, or immediately after the survey season each year. We encourage surveyors or potential surveyors to discuss the results of their hearing with their doctor and with their supervisor (or the Program Coordinator) to determine whether the quality of the data they collect may be compromised. Remember, ~90% of marsh bird detections are aural, and many calls are very faint or are given by birds a long way off. For example, 43% of clapper rails detected during surveys along the Lower Colorado River were detected at distances ≥100m from the surveyor. Hearing ability could be included as a covariate and would help control for observer bias in trend analyses.

*Personnel and training*

All surveyors should have the ability to identify all common calls of focal and non-focal marsh bird species in their local area. Regularly listening to the recorded calls used for surveys can help you learn calls, but surveyors should also practice call identification at marshes (outside the intended survey area if necessary) where the focal species are frequently heard calling.

Annual training workshops occur, so contact the Program Coordinator for information on upcoming training workshops. All surveyors should also be trained to accurately determine distance to calling marsh birds, and to identify the common species of wetland plants within the survey area. Methods for training surveyors to accurately estimate distance include: 1) place a CD player in the marsh at an known distance and have surveyors estimate distance, 2) choose a piece of vegetation in the marsh where the bird is thought to be calling from and use a range-finder to determine distance, 3) have a surveyor estimate the distance to a bird that is calling with regularity and is near a road or marsh edge, then have a second surveyor walk along the road/edge until they are adjacent from that calling bird, and then measure this distance (by pacing or use of a GPS) and see how accurate the surveyor was at estimating distance. *Multiple-observer surveys* (see below) are very useful here - after the survey is complete have the 2 surveyors discuss what they heard and their distance estimates to each bird. Periodic multiple-observer surveys not only produce estimates of detection probability (see below) but also allow surveyors to determine whether one person is constantly underestimating or overestimating distance to calling birds. First-time surveyors can tag along on surveys conducted by more experienced surveyors in their region prior to starting their own surveys. They should do at least one "trial run" before their first data collection window begins because it takes time to get used to the data sheet and recording the data appropriately. Another training tool is the Western Great Lakes Birder Certification Program (http://www.uwgb.edu/birds/certification/index-1.htm).

*Supplies needed for surveys*

- surveyor flagging (to mark survey points)
- GPS receiver
- clipboard, datasheets, pencils
- CD (obtained from the program coordinator - see contact info below)
- CD player
- amplified speakers
- batteries for CD player and amplified speakers
- sound level meter with ±5 dB precision (e.g., Radio Shack model #33-2050 for $34.99; or EXTECH sound level meter, $99 from Forestry Suppliers, Inc.)
- thermometer
- water gauge(s)
- salinity meter (e.g., Portable Salinity Refractometer from Forestry Suppliers for $90)

Batteries should be changed or re-charged frequently (before sound quality declines). Surveyors should routinely ask themselves if the quality of the broadcast sound is high. Request a new CD if quality declines. Surveyors should always carry replacement batteries on all surveys. A spare CD player should be kept close-by in case the primary unit fails to operate.

*Data entry*

Surveyors are urged to enter their data to the pooled database online at: http://www.pwrc.usgs.gov/point/mb/. Each surveyor needs to request a Username and Password from Mark Wimer (mwimer@usgs.gov) in order to enter their data on this website. The

database was specifically built to accommodate procedures of this protocol and it was designed to facilitate data management. Surveyors will be able to proof their data on the website after its been entered, and will be able to obtain an electronic copy of their data (in MS Access) immediately after entry. The database enables efficient entry and storage of marsh bird survey data and ensures that data entered are done so in a consistent way that minimizes data entry errors. In addition to entering your marsh bird survey data, you can also export data. Soon you will be able to obtain data summaries and simple data summary reports on your marsh bird survey data.

*Data from previous years*

For those surveyors/participants that have collected marsh bird survey data in years prior to 2008, your data should have been imported to the new web-based database. However, to ensure that data transfer was successful, we need survey coordinators/surveyors to double-check the status of their data on the website (i.e., check whether the data on the website for their area were transferred correctly, and there are no missing data or mistakes, etc.). If your survey data from prior years is not on the web-based database, please contact the Program Coordinator (see contact info below) to discuss how best to have your past data entered into the data management system.

*Organizational information*

Visit the following website for additional information on these protocols, obtaining data sheets, obtaining CDs, and marsh bird monitoring in general: http://www.cals.arizona.edu/research/azfwru/NationalMarshBird/). Send or email the name, address, phone#, and email address of all surveyors to the address below. This list will be used to disseminate information to each surveyor at the end of each field season and to send results of annual data analyses. Several USFWS National Wildlife Refuges and several other surveyors began using these marsh bird survey methods in 1999 (Conway and Nadeau 2006a). Over 200 refuges and management areas have used this protocol and submitted data to a pooled database which includes data from over 30,000 marsh bird surveys (Conway and Nadeau 2006a). For assistance obtaining appropriate CDs, additional information, or questions regarding standardized marsh bird survey methods, please contact:

Dr. Courtney J. Conway
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LITERATURE CITED

Bystrak, D. 1981. The North American breeding bird survey. Studies in Avian Biology 6:34-41.

Bogner, H. E., and G. A. Baldassarre. 2002. The effectiveness of call-response surveys for detecting least bitterns. Journal of Wildlife Management 66:976-984.

Conway, C. J. 1995. Virginia Rail. In The Birds of North America, No. 173 (A. Poole, P. Stettenheim, and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA.

Conway, C. J., and S. Droege. 2006. A Unified Strategy for Monitoring Changes in Abundance of Birds Associated with North American Tidal Marshes. Studies in Avian Biology 32:382-397.

Conway, C. J., W. R. Eddleman, S. H. Anderson. 1994. Nesting success and survival of Virginia Rails and Soras. Wilson Bulletin 106:466-473.

Conway, C. J., W. R. Eddleman, S. H. Anderson, and L. R. Hanebury. 1993. Seasonal changes in Yuma Clapper Rail vocalization rate and habitat use. J. Wildlife Management 57:282-290.

Conway, C. J., and J. P. Gibbs. 2001. Factors influencing detection probabilities and the benefits of call-broadcast surveys for monitoring marsh birds. Final Report, USGS Patuxent Wildlife Research Center, Laurel, MD. 58 pp.

Conway, C. J., and J. P. Gibbs. 2005. Effectiveness of call-broadcast surveys for monitoring marsh birds. The Auk 122:26-35.

Conway, C. J., and C. Nadeau. 2006a. Development and field-testing of survey methods for a continental marsh bird monitoring program in North America. Wildlife Research Report # 2005-11. USGS Arizona Cooperative Fish and Wildlife Research Unit, Tucson, Arizona.

Conway, C. J., and C. P. Nadeau. 2006b. Fire effects on Yuma Clapper Rails and California Black Rails on the Lower Colorado River. Arizona Cooperative Fish and Wildlife Research Unit, Wildlife Research Report Number 2006-07, Tucson, Arizona.

Conway, C. J., and C. Sulzman. 2007. Status and habitat use of the California black rail in the southwestern U.S.A. Wetlands 27:987-998.

Conway, C. J., C. Sulzman, and B. A. Raulston. 2004. Factors affecting detection probability of California Black Rails. Journal of Wildlife Management 68:360-370.

COSEWIC. 2002. Canadian Species at Risk, May 2002. Committee on the Status of Endangered Wildlife in Canada. Canadian Wildlife Service, Ottawa, Ontario, Canada.

Diario Oficial de la Federacion. 2002. Norma Oficial Mexicana NOM-059-ECOL-2001, Proteccion ambiental-Especies nativas de Mexico de flora y fauna silvestres-Categoriosde riesgo y especificaciones para su inclusion, exclusion o cambio-Lista de especies en riesgo. Secretaria de Medio Ambiente y Recursos Naturales, 6 Marzo 2002.

Eddleman, W. R., F. L. Knopf, B. Meanley, F.A. Reid, and R. Zembal. 1988. Conservation of North American rallids. Wilson Bull. 100:458-475.

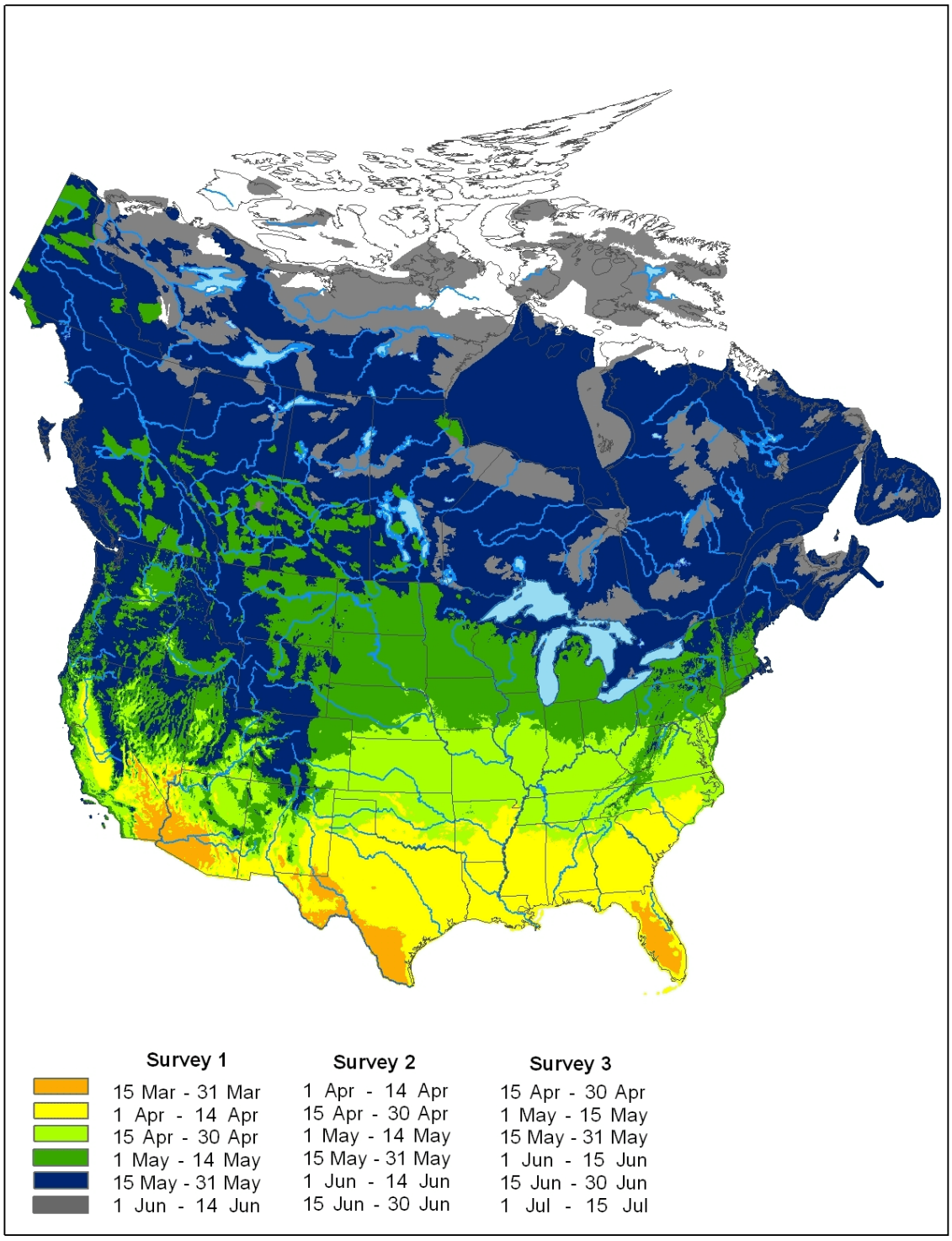
Erwin, R. M., C. J. Conway, and S. W. Hadden. 2002. Species occurrence of marsh birds at Cape Code National Seashore, Massachusetts. Northeastern Naturalist 9:1-12.

Farnsworth, G. L., K. H. Pollock, J. D. Nichols, T. R. Simons, J. E. Hines, and J. R. Sauer. 2002. A removal model for estimating detection probabilities from point-count surveys. Auk

119:414-425.
Gibbs, J. P., and S. M . Melvin. 1993. Call-response surveys for monitoring breeding waterbirds. J. Wildl. Manage. 57:27-34.
Gibbs, J. P., S. Melvin, and F. A. Reid. 1992. American Bittern. In The Birds of North America, No. 18 (A. Poole, P. Stettenheim, and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA.
Klaas, E. E., H. M. Ohlendorf, and E. Cromartie. 1980. Organochlorine residues and shell thicknesses in eggs of the Clapper Rail, Common Gallinule, Purple Gallinule, and Limpkin (Class Aves), eastern and southern United States, 1972-74. Pestic. Monitor. J. 14:90-94.
Lawler, J. J., and R. J. O'Connor. 2004. How well do consistently monitored breeding bird survey routes represent the environments of the conterminous United States? Condor 106:801-814.
Legare, M. L., W. R. Eddleman, P.A. Buckley, and C. Kelly. 1999. The effectiveness of tape playback in estimating Black Rail density. J. Wildl. Management 63:116-125.
MacKenzie, D. I., J. D. Nichols, G. B. Lachman, S. Droege, J. A. Royle, and C. A. Langtimm. 2002. Estimating site occupancy rates when detection probabilities are less than one. Ecology 83:2248-2255.
Meanley, B. 1992. King Rail. In The Birds of North America, No. 3 (A. Poole, P. Stettenheim, and F. Gill, eds.). The Academy of Natural Sciences, Philadelphia, PA.
Nadeau, C. P., C. J. Conway, B. S. Smith, and T. E. Lewis. 2008. Maximizing detection probability of wetland-dependent birds during point-count surveys in northwestern Florida. Wilson Journal of Ornithology 120:*in press.*
National Audubon Society. 2007. The 2007 Audubon Watchlist. National Audubon Society, New York, New York. Accessed online at: www.audubon.org.
Nichols, J.D., J.E. Hines, J.R. Sauer, F.W. Fallon, J.E. Fallon, and P.J. Heglund. 2000. A double-observer approach for estimating detection probability and abundance from avian point counts. Auk 117:393–408.
Odom, R. R. 1975. Mercury contamination in Georgia rails. Proc. Ann. Conf. Southeast. Assoc. Game & Fish Comm. 28:649-658.
Rehm, E. M., and G. A. Baldassarre. 2007. Temporal variation in detection of marsh birds during broadcast of conspecific calls. Journal of Field Ornithology 78:56-63.
Robbins, C. S., D. Bystrak, and P. H. Geissler. 1986. The breeding bird survey: its first fifteen years, 1965-1979. U.S. Dept. of the Interior, Fish and Wildlife Serv. Resour. Publ. 157. Washington, D.C.
Ribic, C.A., S. Lewis, S. Melvin, J. Bart, and B. Peterjohn. 1999. Proceedings of the Marsh bird monitoring workshop. USFWS Region 3 Administrative Report, Fort Snelling, MN.
Spear, L. B., S. B. Terrill, C. Lenihan, and P. Delevoryas. 1999. Effects of temporal and environmental factors on the probability of detecting California black rails. J. Field Ornithol. 70:465-480.
Tate, J. 1986. The blue-list for 1986. Am. Birds 40:227-236.
Tiner, R. W., Jr. 1984. Wetlands of the United States: current status and recent trends. U. S. Fish and Wildl. Serv., National Wetlands Inventory, Washington, DC.
U.S. Fish and Wildlife Service. 2002. Birds of conservation concern 2002. Division of

Migratory Bird Management, Arlington, Virginia.
U.S. Fish and Wildlife Service. 2005. The U.S. Fish and Wildlife Service's Focal Species Strategy for Migratory Birds. Division of Migratory Bird Management, Arlington, Virginia.
U.S. Fish and Wildlife Service. 2006. Proceedings of the 2006 Marsh Bird Monitoring Technical Workshop, March 6-8, 2006. Patuxent Wildlife Research Center, Laurel, Maryland. Accessed online: www.fws.gov/birds/waterbirds/monitoring/marshmonitoring.html.
Zembal, R., and B. W. Massey. 1987. Seasonality of vocalizations by light-footed clapper rails. J. Field Ornithol. 58:41-48.

Appendix 1. Dates of 3 annual survey windows for different areas in North America. The isoclines are based on average maximum temperatures in May, from PRISM at Oregon State University (for the U.S.) and Environment Canada (for Canada).



Appendix 2. AOU 4-letter species acronyms for the marsh birds that are the focus of these protocols.

| | |
|---|---|
| BLRA | black rail |
| YERA | yellow rail |
| SORA | sora |
| VIRA | Virginia rail |
| KIRA | king rail |
| CLRA | clapper rail |
| KCRA | king/clapper rail |
| YBCR | yellow-breasted crake |
| LEBI | least bittern |
| AMBI | American bittern |
| LIMP | limpkin |
| PUGA | purple gallinule |
| COMO | common moorhen |
| AMCO | American coot |
| CARC | Caribbean coot |
| PBGR | pied-billed grebe |
| LEGR | least grebe |
| EAGR | eared grebe |
| RNGR | red-necked grebe |
| HOGR | horned grebe |
| CLGR | Clark's grebe |
| WISN | Wilson's snipe |
| BLTE | black tern |
| SSTS | saltmarsh sharp-tailed sparrow |
| NSTS | Nelson's sharp-tailed sparrow |
| SESP | seaside sparrow |
| WILL[1] | willet (Eastern) |

*Examples of Non-focal Species* (these are just some examples - there are other wetland birds that a surveyor may want to include; each cooperator should decide which non-focal species to include in their surveys in advance and list these species on their datasheet and in the database so that analysts (and surveyors in future years) will know the list of species recorded in prior years. One caution to remember - choosing too many non-focal species may cause surveyors to become overwhelmed with data collection and non-focal species should not be recorded at the expense of data on the focal species. Once a station decides to include certain non-focal species, every surveyor at that station should record them in the same manner each year so that the data for that species from that station are valid.

| | |
|---|---|
| GRHE | green heron |
| GBHE | great blue heron |
| GLIB | glossy ibis |
| FOTE | Forster's tern |
| SEWR | sedge wren |
| MAWR | marsh wren |
| LCSP | LeConte's sparrow |
| SWSP | swamp sparrow |
| YHBL | yellow-headed blackbird |

Appendix 3. List of the focal marsh bird species and their field data requirements for conducting marsh bird monitoring using the North American Marsh Bird Monitoring Protocol for NWRS. These are the species for which the Marsh Bird Monitoring Program is designed to monitor well. Surveyors should always record at least total # detected at each point for all these species.

| | Species | Broadcast Required?[1] | Record One Individual/Line? |
|---|---|---|---|
| **Broadcast** | BLRA | YES | YES |
| | YERA | YES | YES |
| | SORA | YES | YES |
| | VIRA | YES | YES |
| | KIRA | YES | YES |
| | CLRA | YES | YES |
| | YBCR | YES | YES |
| | LEBI | YES | YES |
| | AMBI | YES | YES |
| | LIMP | YES | YES |
| | PUGA | YES | YES |
| | COMO | Recommended | YES, except[2] |
| | AMCO | Recommended | YES, except[2] |
| | CARC | Recommended | YES, except[2] |
| | PBGR | Recommended | YES, except[2] |
| **Non-broadcast** | WILL (Eastern) | NO | YES, except[2] |
| | RNGR | NO | YES, except[2] |
| | EAGR | NO | YES, except[2] |
| | HOGR | NO | YES, except[2] |
| | CLGR | NO | YES, except[2] |
| | LEGR | NO | YES, except[2] |
| | WISN | NO | YES, except[2] |
| | SSTS | NO | YES, except[2] |
| | NSTS | NO | YES, except[2] |
| | SESP | NO | YES, except[2] |
| | BLTE | NO | YES, except[2] |

[1]*BROADCAST REQUIRED: species for which surveyors must broadcast calls if they are conducting surveys within the breeding range of that species. Recommended= use of broadcast is optional (BUT strongly encouraged) for these species even if surveyor is within the breeding range of that species.*

[2]*Record each individual on one row of the data form except at points where the surveyor is overwhelmed because too many focal birds are being detected at that point (see page 16 of the protocol).*

Appendix 4. List of the most common calls for the focal species of marsh birds.

| Species | Standardized Call Name | Sibley Name(s) | BNA Name(s)[1] | possible function | sample on BNA[1] website |
|---|---|---|---|---|---|
| AMBI | pump-er-lunk | bloonk-adoonk | pump-er lunk and dunk-a-doo | mate attraction, territorial signal | |
| AMBI | chu-peep | chu-peep | chu-peep | during copulation ceremony | |
| AMBI | kok | kok-kok-kok | kok-kok-kok or haink | when flushed | |
| AMCO | burr-up | | puhk-cowah; cooah | perturbation (puhk-cowah male, cooah female) | y |
| AMCO | hic-up | priKI | pow-ur | perturbation (pow-ur male) | y |
| AMCO | honk | | | | |
| BLRA | kic-kic-kerr | keekeedrr, deedeedunk | kickee-doo or kic-kic-kerr, or ki-ki-do | mate attraction, territorial signal | y |
| BLRA | grr | krr-krr-krr, growling | Growl, grr-grr-grr, brrrr or churr-churr-churr | alarm call, territorial defense | y |
| BLRA | churt | | churt ; curt; yip, bip or kik ; yelp ; kek, ki | alarm call | |
| BLRA | tch | ink-ink-ink | kik-kik-kik or kuk-kuk-kuk-kuk; ink-ink-ink | when on the nest? | |
| CLRA | clatter | clapper | Clapper or Clatter; chock-chock ; cac-cac-cac or jupe-jupe-jupe | mate communication | y |
| CLRA | kek | ket | kek-kek-kek, kik-kik-kik, bup-bup-bup | mate attraction | y |
| CLRA | kek-burr | ket-ket-karr | kek-burr | | y |
| CLRA | kek-hurrah | grunting | kek-hurrah | | y |
| CLRA | hoo | | Hoo; oom-oom-oom | | |
| CLRA | squawk | | Screech or Shriek; Chase Squeal or kak | alarm call, territorial disputes | |
| CLRA | purr | | purr; agitated purrrr; churr | | |
| COMO | wipe-out | pep-pep-pehr-peehr | cackle - ka-ka-ka-ka-ka-kee-kree-kree-kree | | y |
| COMO | keep | kulp, keek | squawk, yelp, cluck | | y |
| COMO | giddy-up | | | | |
| KIRA | clatter | clapper | cheup-cheup-cheup, jupe-jupe-jupe, gelp-gelp-gelp-gelp- ; chac-chac-chac | mate communication | y |
| KIRA | kek | ket | kik-kik-kik | mate attraction | y |
| KIRA | kek-hurrah | grunting | | | |
| KIRA | kek-burr | ket-ket-karr | | | y |
| KIRA | squawk | | | | |
| LEBI | coo | poopoopoo | coo or cooing ; tut-tut-tut | mate attraction | y |
| LEBI | kak | rick-rick-rick | gack-gack | mate communication, alarm call | y |
| LEBI | ert | kuk | tut-tut-tut; quoh, hah or cackle | alarm call | y |
| LEBI | ank-ank | | ank-ank | when flushed | |
| LIMP | kreow | kwEEEeeer, KIAAAar | kreow | mate attraction | y |
| LIMP | gon | | gon | | |
| PBGR | owhoop | ge ge gadum gadum gwaaaaow | series of wut, whut or kuk notes followed by 4-20 kaow or cow notes | courtship, communication btwn pair, territorial | y |
| PBGR | hyena | chatter | ek-ek-ek, hn-hn-hn | greeting call | y |
| PUGA | cackle | pep-pep-pePAA-pePAA, to-to-terp | Cackle | | y |
| PUGA | squawk | | gheeek! | | y |
| PUGA | cac-cac | grunt | Slow Clucking and Grunt Call; cac-cac-cac | | |
| SORA | whinny | whinny | decending whinny | territorial defense, mate communication | y |
| SORA | per-weep | kooEE | per-weep; ker-wee; ter-ee | mate attraction? | y |
| SORA | keep | keek | kee or weep | alarm call | y |
| VIRA | grunt | grunt | grunt | mate communication | y |

| | | | | | |
|---|---|---|---|---|---|
| VIRA | tick-it | gik gik gik gik gidik gidik gidik gidik | tick-it | mate attraction | y |
| VIRA | kicker | chi chi chi chi treerrr | kicker | solicitation | y |
| VIRA | squawk | skew; kweek | kiu | alarm call, territorial dispute | y |
| VIRA | kikik | kikik ik-ik, pit-ti-ti-tip | | | y |
| YERA | click-click | clicking, tic-tic tictictic | click-click, click-click-click | mate attraction | y |
| YERA | cackle | cackle | cackle | | |
| YERA | wheeze | wheezing, clucking | wheezes | hostility | |

[1]Name(s) of calls as listed in The Birds of North America (http://bna.birds.cornell.edu/bna/).

Appendix 5. Example of a completed data sheet for a survey that followed the Standardized North American Marsh Bird Monitoring Protocols.

# National Marsh Bird Monitoring Program Survey Data Sheet

**Date** *(eg 10-May-04)* **:** *20 April 2006*

**Name of marsh or route :** *Hidden Shores Marsh*

**Observer(s)** *(list all)** **:**

*Chris Nadeau, Bob Blabla*

**Multiple Observer Survey: Y / N** (N circled)

**Boat type:** *John boat (20 hp)*

**High tide time:**

**Water depth:**

location: *Mallard Marsh* depth (in) *10*

location: *Duck Pond* depth (in) *15*

location: depth (in)

**List all non-focal species surveyed:**

*SNEG*

**list all observers in order of their contribution to the data collected*

*put an "S" in the appropriate column if the bird was seen, a "1" if the bird was heard, and "1S" if both heard and seen*

| Station# | Start Time (military) | Temp (F) | Sky | Wind (Beaufort) | Salinity (ppt) | Background noise | Species | Responded During: Pass 0-1 | Pass 1-2 | Pass 2-3 | Pass 3-4 | Pass 4-5 | BLRA | LEBI | SORA | VIRA | Outside survey period | Call Type(s) | Direction | In target area | Distance (meters) | Distance Aide | Detected at a Previous Point | Comments |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| *HSM1* | *1710* | *66* | *0* | *1* | | *0* | *BLRA* | *1* | *1* | | | | *1* | | | | *1* | *grr* | | *Y* | *95* | *1* | *N* | |
| | | | | | | | *BLRA* | | *1* | | | | *1* | *1* | *1* | *1* | | *kic-kic-kerr* | | *N* | *110* | *1* | *N* | |
| | | | | | | | *VIRA* | | | *1S* | | | | | | | | *tick-it,grunt* | | *N* | *30* | *1* | *N* | |
| *HSM2* | *1721* | *67* | *0* | *3* | | *2* | *no birds* | | | | | | | | | | | | | | | | | |
| *HSM3* | *1750* | *68* | *1* | *2* | | *1* | *CLRA* | *1* | *1* | | | | | | | | *1S* | *clatter* | | *Y* | *40* | *0* | *N* | *pair* |
| | | | | | | | *CLRA* | | | | | | | | | | *S* | *clatter* | | *N* | *45* | *0* | *N* | *pair* |
| | | | | | | | *VIRA* | | *1* | *1* | *1* | | | | | *1* | | *grunt* | | *Y* | *100* | *0* | *Y* | |
| | | | | | | | *CLRA* | | | | | | | | | *1* | | *throaty hoo* | | *Y* | *10* | *0* | *N* | |
| | | | | | | | *AMCO (0;10;12)* | | | | | | | | | | | | | | | | | |
| | | | | | | | *SNEG (1;0;0)* | | | | | | | | | | | | | | | | | |
| *HSM4* | | | | | | | | | | | | | | | | | | | | | | | | *Not surveyed unsuitable habitat* |
| *HSM5* | *1810* | *72* | *1* | *2* | | *1* | *COMO* | *1* | *1* | *1* | | *1* | | *1* | *1* | | | *wipeout* | | *Y* | *150* | *3* | *N* | |
| | | | | | | | *SORA* | | | | *1* | *1* | | | *1* | | | *per-weep* | | *Y* | *210* | *3* | *N* | |
| | | | | | | | *SESP (2;3;12)* | | | | | | | | | | | | | | | | | |

**Background noise:** 0 = *no noise;* 1 = *faint noise;* 2 = *moderate noise (probably can't hear some birds beyond 100m);* 3 = loud noise (probably can't hear some birds beyond 50m); 4 = *intense noise (probably can't hear some birds beyond 25m);* 9 = *not recorded.*

**Beaufort scale:** 0=*smoke rises vertically;* 1=*wind direction shown by smoke drift;* 2=*wind felt on face; leaves rustle;* 3=*leaves & small twigs in constant motion and light flag extended;* 4=*raises dust and loose paper -- small branches are moved;* 5=*small trees with leaves sway --crested wavelets on inland waters*

**Sky:** 0=*clear or a few clouds;* 1=*partly cloudy or variable sky;* 2=*cloudy or overcast;* 3=sand or dust storm; 4=*fog/smoke;* 5=*drizzle;* 6=*snow;* 7=snow/sleet; 8=*showers*

**Distance Aide**: 0 = *none;* 1 = r*ange finder;* 2 = *distance bands on aerial photo;* 3 = *surveyor flags tied to vegetation*

Appendix 6. List of focal species to include in the broadcast sequence for each National Wildlife Refuge in North America. These lists are meant to be a preliminary suggestion when more detailed information/knowledge is not available. The final list of species included in the call-broadcast sequence at a particular refuge should be verified based on local expertise and information (or after an initial year or two of surveys). Participants who have local knowledge of the focal species that breed at a local refuge should contact the Program Coordinator so that we can update the list of appropriate focal species for that refuge in this document.

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ACE BASIN NWR | 42511 | SC | 4 | 27 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| AGASSIZ NWR | 32510 | MN | 3 | 11 | 4 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | S. Lor |
| ALAMOSA NWR | 65510 | CO | 6 | 16 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| ALLIGATOR RIVER NWR | 41630 | NC | 4 | 27 | 3 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | |
| AMAGANSETT NWR | 52562 | NY | 5 | 30 | 5 | | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| ANAHO ISLAND NWR | 14591 | NV | 1 | 9 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| ANAHUAC NWR | 21521 | TX | 2 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| ANKENY NWR | 13588 | OR | 1 | 5 | 4 | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| ANTIOCH DUNES NWR | 11646 | CA | 1 | 32 | 3 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| APPERT LAKE NWR | 62511 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| ARANSAS NWR | 21532 | TX | 2 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| ARAPAHO NWR | 65520 | CO | 6 | 16 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| ARCHIE CARR NWR | 41575 | FL | 4 | 31 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ARDOCH NWR | 62585 | ND | 6 | 11 | 4 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| AROOSTOOK NWR | 53630 | ME | 5 | 14 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| ARROWWOOD NWR | 62510 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| ARTHUR MARSHALL LOXAHATCHEE NWR | 41560 | FL | 4 | 31 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | |
| ASH MEADOWS NWR | 14554 | NV | 1 | 33 | 1 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | D. Weisser |
| ASSABET RIVER NWR | 53513 | MA | 5 | 30 | 4 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| ATCHAFALAYA NWR | 43614 | LA | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| ATTWATER PRAIRIE CHICKEN NWR | 21560 | TX | 2 | 21 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| AUDUBON NWR | 62540 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BACA NWR | 65512 | CO | 6 | 16 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BACK BAY NWR | 51510 | VA | 5 | 27 | 3 | | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| BALCONES CANYONLANDS NWR | 21561 | TX | 2 | 20 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| BALD KNOB NWR | 43522 | AR | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| BAMFORTH NWR | 65521 | CO | 6 | 10 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BANDON MARSH NWR | 13596 | OR | 1 | 5 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BANKS LAKE NWR | 41591 | GA | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | |
| BASKETT SLOUGH NWR | 13587 | OR | 1 | 5 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BAYOU COCODRIE NWR | 43530 | LA | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| BAYOU SAUVAGE NWR | 43595 | LA | 4 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| BAYOU TECHE NWR | 43628 | LA | 4 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BEAR BUTTE NWR | 64542 | SD | 6 | 17 | 4 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BEAR LAKE NWR | 14613 | ID | 1 | 10 | 5 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BEAR RIVER MIGRATORY BIRD REFUGE | 65530 | UT | 6 | 9 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BEAR VALLEY NWR | 11666 | CA | 1 | 9 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| BENTON LAKE NWR | 61510 | MT | 6 | 11 | 5 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BIG BOGGY NWR | 21542 | TX | 2 | 37 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| BIG BRANCH MARSH NWR | 43558 | LA | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| BIG LAKE NWR | 43515 | AR | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| BIG MUDDY NF&WR | 33590 | MO | 3 | 22 | 3 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| BIG OAKS NWR | 31531 | IN | 3 | 24 | 3 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| BIG STONE NWR | 32640 | MN | 3 | 11 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| BILL WILLIAMS RIVER NWR | 22551 | AZ | 2 | 33 | 1 | | **1** | 1 | 0 | 0 | 1 | 0 | **1** | 0 | 1 | 0 | 1 | 1 | 0 | C. Conway |
| BITTER CREEK NWR | 11672 | CA | 1 | 32 | 3 | 2, 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| BITTER LAKE NWR | 22510 | NM | 2 | 35 | 2 | | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| BLACK BAYOU LAKE NWR | 42652 | LA | 4 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| BLACK COULEE NWR | 61581 | MT | 6 | 11 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BLACKBEARD ISLAND NWR | 41626 | GA | 4 | 27 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| BLACKWATER NWR | 51531 | MD | 5 | 0 | 3 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| BLOCK ISLAND NWR | 53541 | RI | 5 | 30 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| BLUE RIDGE NWR | 11671 | CA | 1 | 32 | 4 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| BOGUE CHITTO NWR | 43616 | LA | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| BOMBAY HOOK NWR | 51550 | DE | 5 | 30 | 3 | | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| BON SECOUR NWR | 43630 | AL | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| BOND SWAMP NWR | 41685 | GA | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| BONE HILL NWR | 62632 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BOSQUE DEL APACHE NWR | 22520 | NM | 2 | 35 | 2 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| BOWDOIN NWR | 61580 | MT | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BOYER CHUTE NWR | 64640 | NE | 6 | 22 | 3 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BRAZORIA NWR | 21543 | TX | 2 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| BRETON NWR | 43556 | LA | 4 | 0 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| BROWNS PARK NWR | 65550 | CO | 6 | 10 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BRUMBA NWR | 62582 | ND | 6 | 11 | 5 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BUENOS AIRES NWR | 22530 | AZ | 2 | 34 | 1 | 2, 3, 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUFFALO LAKE NWR | 62622 | ND | 6 | 11 | 2 | 3, 4 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BUFFALO LAKE NWR | 21570 | TX | 2 | 18 | 2 | 3, 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| BUTTE SINK WMA | 81624 | CA | 6 | 32 | 2 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| CABEZA PRIETA NWR | 22571 | AZ | 2 | 33 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| CACHE RIVER NWR | 43513 | AR | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| CADDO LAKE NWR | 21594 | OK | 2 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| CAHABA RIVER NWR | 43665 | AL | 4 | 28 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| CALOOSAHATCHEE NWR | 41546 | FL | 4 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| CAMAS NWR | 14611 | ID | 1 | 9 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CAMERON PRAIRIE NWR | 43612 | LA | 4 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| CAMP LAKE NWR | 62543 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CANAAN VALLEY NWR | 51630 | WV | 5 | 28 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| CANFIELD LAKE NWR | 62513 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CAPE MAY NWR | 52515 | NJ | 5 | 30 | 4 | | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| CAPE MEARES NWR | 13593 | OR | 1 | 5 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CAPE ROMAIN NWR | 42510 | SC | 4 | 27 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| CARLTON POND WPA | 53561 | ME | 5 | 14 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | |
| CAROLINA SANDHILLS NWR | 42520 | SC | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| CASTLE ROCK NWR | 11647 | CA | 1 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| CAT ISLAND NWR | 43697 | LA | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| CATAHOULA NWR | 43525 | LA | 4 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| CEDAR ISLAND NWR | 42531 | NC | 4 | 27 | 3 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | |
| CEDAR KEYS NWR | 41511 | FL | 4 | 0 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| CEDAR POINT NWR | 31541 | OH | 3 | 22 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| CHARLES M. RUSSELL NWR | 61520 | MT | 6 | 17 | 4 | 5 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CHASE LAKE NWR | 62514 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CHASSAHOWITZKA NWR | 41510 | FL | 4 | 0 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | |
| CHAUTAUQUA NWR | 33650 | IL | 3 | 22 | 3 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| CHICKASAW NWR | 42526 | TN | 4 | 26 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| CHINCOTEAGUE NWR | 51570 | VA | 5 | 30 | 4 | | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| CHOCTAW NWR | 43535 | AL | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | |
| CIBOLA NWR | 22540 | AZ | 2 | 33 | 1 | | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | |
| CLARENCE CANNON NWR | 33643 | MO | 3 | 22 | 3 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLARKS RIVER NWR | 42622 | KY | 4 | 24 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| CLEAR LAKE NWR | 11661 | CA | 1 | 9 | 5 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| COACHELLA VALLEY NWR | 11632 | CA | 1 | 33 | 1 | | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | |
| COKEVILLE MEADOWS NWR | 65581 | WY | 6 | 10 | 5 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| COLD SPRINGS NWR | 13581 | WA | 1 | 9 | 3 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| COLDWATER RIVER NWR | 43676 | MS | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| COLUMBIA NWR | 13510 | WA | 1 | 9 | 3 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| COLUSA NWR | 11621 | CA | 1 | 32 | 2 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| CONBOY LAKE NWR | 13522 | WA | 1 | 9 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CONSCIENCE POINT NWR | 52564 | NY | 5 | 30 | 5 | | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| COPALIS NWR | 13536 | WA | 1 | 0 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| COTTONWOOD LAKE NWR | 62623 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CRAB ORCHARD NWR | 33610 | IL | 3 | 24 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| CRANE MEADOWS NWR | 32555 | MN | 3 | 23 | 4 | | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| CREEDMAN COULEE NWR | 61582 | MT | 6 | 11 | 4 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CRESCENT LAKE NWR | 64510 | NE | 6 | 19 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CROCODILE LAKE NWR | 41581 | FL | 4 | 31 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | |
| CROSS CREEKS NWR | 42515 | TN | 4 | 24 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| CROSS ISLAND NWR | 53535 | ME | 5 | 14 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| CRYSTAL RIVER NWR | 41516 | FL | 4 | 0 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | |
| CURRITUCK NWR | 41631 | NC | 4 | 0 | 3 | | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| CYPRESS CREEK NWR | 32630 | IL | 3 | 24 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| DAHOMEY NWR | 43635 | MS | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| DAKOTA LAKE NWR | 62633 | ND | 6 | 11 | 4 | | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| D'ARBONNE NWR | 43545 | LA | 4 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| DEEP FORK NWR | 21592 | OK | 2 | 25 | 3 | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| DEER FLAT NWR | 14560 | ID | 1 | 9 | 4 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| DELEVAN NWR | 11622 | CA | 1 | 32 | 2 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| DELTA NWR | 43555 | LA | 4 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| DES LACS NWR | 62570 | ND | 6 | 11 | 5 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| DESERT NATIONAL WILDLIFE RANGE | 14555 | NV | 1 | 33 | 3 | 1;2;4;5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| DESOTO NWR | 33510 | IA | 3 | 22 | 3 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| DETROIT RIVER INTNTL. WR | 31521 | MI | 3 | 0 | 4 | 5 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DON EDWARDS SAN FRANCISCO BAY NWR | 11648 | CA | 1 | 32 | 4 | | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | |
| DRIFTLESS AREA NWR | 32596 | IA | 3 | 23 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| DUNGENESS NWR | 13539 | WA | 1 | 5 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| EASTERN NECK NWR | 51590 | MD | 5 | 30 | 3 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| EASTERN SHORE OF VIRGINIA NWR | 51650 | VA | 5 | 30 | 3 | | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| EDWIN B. FORSYTHE NWR | 52510 | NJ | 5 | 30 | 4 | | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| EGMONT KEY NWR | 41562 | FL | 4 | 0 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ELIZABETH ALEXANDRA MORTON NWR | 52566 | NY | 5 | 30 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ELLICOTT SLOUGH NWR | 11643 | CA | 1 | 32 | 4 | | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| EMIQUON NWR | 33654 | IL | 3 | 22 | 3 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| ERIE NWR | 52520 | PA | 5 | 13 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| EUFAULA NWR | 43560 | AL | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | |
| FALLON NWR | 14592 | NV | 1 | 9 | 3 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| FARALLON NWR | 11641 | CA | 1 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| FEATHERSTONE NWR | 51612 | VA | 5 | 29 | 3 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| FELSENTHAL NWR | 43579 | AR | 4 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| FERN CAVE NWR | 43662 | AL | 4 | 24 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| FISH SPRINGS NWR | 65540 | UT | 6 | 9 | 3 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| FISHERMAN ISLAND NWR | 51651 | VA | 5 | 0 | 3 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| FLATTERY ROCKS NWR | 13537 | WA | 1 | 0 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| FLINT HILLS NWR | 64580 | KS | 6 | 22 | 3 | | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| FLORENCE LAKE NWR | 62516 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| FLORIDA PANTHER NWR | 41545 | FL | 4 | 31 | 1 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | |
| FORT NIOBRARA NWR | 64520 | NE | 6 | 17 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| FOX RIVER NWR | 32524 | WI | 3 | 23 | 4 | | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| FRANKLIN ISLAND NWR | 53533 | ME | 5 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| FRANZ LAKE NWR | 13558 | WA | 1 | 5 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| GLACIAL RIDGE NWR | 32580 | MN | 3 | 11 | 4 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| GRAND BAY NWR | 43617 | MS | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| GRAND COTE NWR | 43696 | LA | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| GRASSLANDS WMA | 81653 | CA | 6 | 32 | 2 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| GRAVEL ISLAND NWR | 32521 | WI | 3 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| GRAYS HARBOR NWR | 13534 | WA | 1 | 0 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GRAYS LAKE NWR | 14612 | ID | 1 | 10 | 5 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| GREAT BAY NWR | 53570 | NH | 5 | 30 | 4 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | |
| GREAT DISMAL SWAMP NWR | 51580 | VA | 5 | 27 | 3 | | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| GREAT MEADOWS NWR | 53511 | MA | 5 | 30 | 4 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| GREAT RIVER NWR | 33640 | MO | 3 | 22 | 3 | 3 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| GREAT SWAMP NWR | 52530 | NJ | 5 | 29 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| GREAT WHITE HERON NWR | 41582 | FL | 4 | 0 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| GREEN BAY NWR | 32522 | WI | 3 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| GRULLA NWR | 21591 | TX | 2 | 18 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| GUADALUPE-NIPOMO DUNES NWR | 11673 | CA | 1 | 32 | 5 | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| HAGERMAN NWR | 21580 | TX | 2 | 21 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| HAILSTONE NWR | 61521 | MT | 6 | 17 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HALFBREED LAKE NWR | 61522 | MT | 6 | 17 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HALF-WAY LAKE NWR | 62517 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HAMDEN SLOUGH NWR | 32600 | MN | 3 | 23 | 4 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HANDY BRAKE NWR | 43567 | LA | 4 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| HARBOR ISLAND NWR | 31512 | MI | 3 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| HARRIS NECK NWR | 41627 | GA | 4 | 27 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| HART MOUNTAIN NATL ANTELOPE REFUGE | 14622 | OR | 1 | 9 | 5 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HATCHIE NWR | 42525 | TN | 4 | 27 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| HAVASU NWR | 22550 | CA | 2 | 33 | 1 | | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | |
| HEWITT LAKE NWR | 61583 | MT | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HIDDENWOOD NWR | 62544 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HILLSIDE NWR | 43580 | MS | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| HOBART LAKE NWR | 62518 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HOBE SOUND NWR | 41561 | FL | 4 | 31 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | |
| HOLLA BEND NWR | 43590 | AR | 4 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| HOLT COLLIER NWR | 43684 | MS | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| HOPPER MOUNTAIN NWR | 11674 | CA | 1 | 32 | 3 | 4 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| HORICON NWR | 32520 | WI | 3 | 23 | 4 | | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| HUMBOLDT BAY NWR | 11590 | CA | 1 | 0 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HURON NWR | 31511 | MI | 3 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| HUTCHINSON LAKE NWR | 62519 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| ACE BASIN NWR | 42511 | SC | 4 | 27 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| AGASSIZ NWR | 32510 | MN | 3 | 11 | 4 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | S. Lor |
| ALAMOSA NWR | 65510 | CO | 6 | 16 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| ALLIGATOR RIVER NWR | 41630 | NC | 4 | 27 | 3 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | |
| AMAGANSETT NWR | 52562 | NY | 5 | 30 | 5 | | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| ANAHO ISLAND NWR | 14591 | NV | 1 | 9 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| ANAHUAC NWR | 21521 | TX | 2 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| ANKENY NWR | 13588 | OR | 1 | 5 | 4 | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| ANTIOCH DUNES NWR | 11646 | CA | 1 | 32 | 3 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| APPERT LAKE NWR | 62511 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| ARANSAS NWR | 21532 | TX | 2 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| ARAPAHO NWR | 65520 | CO | 6 | 16 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| ARCHIE CARR NWR | 41575 | FL | 4 | 31 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ARDOCH NWR | 62585 | ND | 6 | 11 | 4 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| AROOSTOOK NWR | 53630 | ME | 5 | 14 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | |
| ARROWWOOD NWR | 62510 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| ARTHUR MARSHALL LOXAHATCHEE NWR | 41560 | FL | 4 | 31 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | |
| ASH MEADOWS NWR | 14554 | NV | 1 | 33 | 1 | 2 | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | D. Weisser |
| ASSABET RIVER NWR | 53513 | MA | 5 | 30 | 4 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| ATCHAFALAYA NWR | 43614 | LA | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| ATTWATER PRAIRIE CHICKEN NWR | 21560 | TX | 2 | 21 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| AUDUBON NWR | 62540 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BACA NWR | 65512 | CO | 6 | 16 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BACK BAY NWR | 51510 | VA | 5 | 27 | 3 | | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| BALCONES CANYONLANDS NWR | 21561 | TX | 2 | 20 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| BALD KNOB NWR | 43522 | AR | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| BAMFORTH NWR | 65521 | CO | 6 | 10 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BANDON MARSH NWR | 13596 | OR | 1 | 5 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BANKS LAKE NWR | 41591 | GA | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | |
| BASKETT SLOUGH NWR | 13587 | OR | 1 | 5 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BAYOU COCODRIE NWR | 43530 | LA | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| BAYOU SAUVAGE NWR | 43595 | LA | 4 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| BAYOU TECHE NWR | 43628 | LA | 4 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BEAR BUTTE NWR | 64542 | SD | 6 | 17 | 4 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BEAR LAKE NWR | 14613 | ID | 1 | 10 | 5 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BEAR RIVER MIGRATORY BIRD REFUGE | 65530 | UT | 6 | 9 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BEAR VALLEY NWR | 11666 | CA | 1 | 9 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| BENTON LAKE NWR | 61510 | MT | 6 | 11 | 5 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BIG BOGGY NWR | 21542 | TX | 2 | 37 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| BIG BRANCH MARSH NWR | 43558 | LA | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| BIG LAKE NWR | 43515 | AR | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| BIG MUDDY NF&WR | 33590 | MO | 3 | 22 | 3 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| BIG OAKS NWR | 31531 | IN | 3 | 24 | 3 | 4 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| BIG STONE NWR | 32640 | MN | 3 | 11 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| BILL WILLIAMS RIVER NWR | 22551 | AZ | 2 | 33 | 1 | | **1** | 1 | 0 | 0 | 1 | 0 | **1** | 0 | 1 | 0 | 1 | 1 | 0 | C. Conway |
| BITTER CREEK NWR | 11672 | CA | 1 | 32 | 3 | 2, 4 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| BITTER LAKE NWR | 22510 | NM | 2 | 35 | 2 | | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| BLACK BAYOU LAKE NWR | 42652 | LA | 4 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| BLACK COULEE NWR | 61581 | MT | 6 | 11 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BLACKBEARD ISLAND NWR | 41626 | GA | 4 | 27 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| BLACKWATER NWR | 51531 | MD | 5 | 0 | 3 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| BLOCK ISLAND NWR | 53541 | RI | 5 | 30 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| BLUE RIDGE NWR | 11671 | CA | 1 | 32 | 4 | 5 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| BOGUE CHITTO NWR | 43616 | LA | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| BOMBAY HOOK NWR | 51550 | DE | 5 | 30 | 3 | | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| BON SECOUR NWR | 43630 | AL | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| BOND SWAMP NWR | 41685 | GA | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| BONE HILL NWR | 62632 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BOSQUE DEL APACHE NWR | 22520 | NM | 2 | 35 | 2 | 3 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| BOWDOIN NWR | 61580 | MT | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BOYER CHUTE NWR | 64640 | NE | 6 | 22 | 3 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BRAZORIA NWR | 21543 | TX | 2 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| BRETON NWR | 43556 | LA | 4 | 0 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| BROWNS PARK NWR | 65550 | CO | 6 | 10 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BRUMBA NWR | 62582 | ND | 6 | 11 | 5 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BUENOS AIRES NWR | 22530 | AZ | 2 | 34 | 1 | 2, 3, 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| BUFFALO LAKE NWR | 62622 | ND | 6 | 11 | 2 | 3, 4 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| BUFFALO LAKE NWR | 21570 | TX | 2 | 18 | 2 | 3, 4 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| BUTTE SINK WMA | 81624 | CA | 6 | 32 | 2 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| CABEZA PRIETA NWR | 22571 | AZ | 2 | 33 | 1 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| CACHE RIVER NWR | 43513 | AR | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| CADDO LAKE NWR | 21594 | OK | 2 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| CAHABA RIVER NWR | 43665 | AL | 4 | 28 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| CALOOSAHATCHEE NWR | 41546 | FL | 4 | 0 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| CAMAS NWR | 14611 | ID | 1 | 9 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CAMERON PRAIRIE NWR | 43612 | LA | 4 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| CAMP LAKE NWR | 62543 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CANAAN VALLEY NWR | 51630 | WV | 5 | 28 | 4 | 5 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| CANFIELD LAKE NWR | 62513 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CAPE MAY NWR | 52515 | NJ | 5 | 30 | 4 | | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| CAPE MEARES NWR | 13593 | OR | 1 | 5 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CAPE ROMAIN NWR | 42510 | SC | 4 | 27 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| CARLTON POND WPA | 53561 | ME | 5 | 14 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | |
| CAROLINA SANDHILLS NWR | 42520 | SC | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| CASTLE ROCK NWR | 11647 | CA | 1 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| CAT ISLAND NWR | 43697 | LA | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| CATAHOULA NWR | 43525 | LA | 4 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| CEDAR ISLAND NWR | 42531 | NC | 4 | 27 | 3 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | |
| CEDAR KEYS NWR | 41511 | FL | 4 | 0 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| CEDAR POINT NWR | 31541 | OH | 3 | 22 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| CHARLES M. RUSSELL NWR | 61520 | MT | 6 | 17 | 4 | 5 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CHASE LAKE NWR | 62514 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CHASSAHOWITZKA NWR | 41510 | FL | 4 | 0 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | |
| CHAUTAUQUA NWR | 33650 | IL | 3 | 22 | 3 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| CHICKASAW NWR | 42526 | TN | 4 | 26 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| CHINCOTEAGUE NWR | 51570 | VA | 5 | 30 | 4 | | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| CHOCTAW NWR | 43535 | AL | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | |
| CIBOLA NWR | 22540 | AZ | 2 | 33 | 1 | | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | |
| CLARENCE CANNON NWR | 33643 | MO | 3 | 22 | 3 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| CLARKS RIVER NWR | 42622 | KY | 4 | 24 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| CLEAR LAKE NWR | 11661 | CA | 1 | 9 | 5 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| COACHELLA VALLEY NWR | 11632 | CA | 1 | 33 | 1 | | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | |
| COKEVILLE MEADOWS NWR | 65581 | WY | 6 | 10 | 5 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| COLD SPRINGS NWR | 13581 | WA | 1 | 9 | 3 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| COLDWATER RIVER NWR | 43676 | MS | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| COLUMBIA NWR | 13510 | WA | 1 | 9 | 3 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| COLUSA NWR | 11621 | CA | 1 | 32 | 2 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| CONBOY LAKE NWR | 13522 | WA | 1 | 9 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CONSCIENCE POINT NWR | 52564 | NY | 5 | 30 | 5 | | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| COPALIS NWR | 13536 | WA | 1 | 0 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| COTTONWOOD LAKE NWR | 62623 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CRAB ORCHARD NWR | 33610 | IL | 3 | 24 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| CRANE MEADOWS NWR | 32555 | MN | 3 | 23 | 4 | | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| CREEDMAN COULEE NWR | 61582 | MT | 6 | 11 | 4 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CRESCENT LAKE NWR | 64510 | NE | 6 | 19 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| CROCODILE LAKE NWR | 41581 | FL | 4 | 31 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | |
| CROSS CREEKS NWR | 42515 | TN | 4 | 24 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| CROSS ISLAND NWR | 53535 | ME | 5 | 14 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| CRYSTAL RIVER NWR | 41516 | FL | 4 | 0 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | |
| CURRITUCK NWR | 41631 | NC | 4 | 0 | 3 | | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| CYPRESS CREEK NWR | 32630 | IL | 3 | 24 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| DAHOMEY NWR | 43635 | MS | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| DAKOTA LAKE NWR | 62633 | ND | 6 | 11 | 4 | | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| D'ARBONNE NWR | 43545 | LA | 4 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| DEEP FORK NWR | 21592 | OK | 2 | 25 | 3 | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| DEER FLAT NWR | 14560 | ID | 1 | 9 | 4 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| DELEVAN NWR | 11622 | CA | 1 | 32 | 2 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| DELTA NWR | 43555 | LA | 4 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| DES LACS NWR | 62570 | ND | 6 | 11 | 5 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| DESERT NATIONAL WILDLIFE RANGE | 14555 | NV | 1 | 33 | 3 | 1;2;4;5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| DESOTO NWR | 33510 | IA | 3 | 22 | 3 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| DETROIT RIVER INTNTL. WR | 31521 | MI | 3 | 0 | 4 | 5 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| DON EDWARDS SAN FRANCISCO BAY NWR | 11648 | CA | 1 | 32 | 4 | | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | |
| DRIFTLESS AREA NWR | 32596 | IA | 3 | 23 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| DUNGENESS NWR | 13539 | WA | 1 | 5 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| EASTERN NECK NWR | 51590 | MD | 5 | 30 | 3 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| EASTERN SHORE OF VIRGINIA NWR | 51650 | VA | 5 | 30 | 3 | | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| EDWIN B. FORSYTHE NWR | 52510 | NJ | 5 | 30 | 4 | | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| EGMONT KEY NWR | 41562 | FL | 4 | 0 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ELIZABETH ALEXANDRA MORTON NWR | 52566 | NY | 5 | 30 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| ELLICOTT SLOUGH NWR | 11643 | CA | 1 | 32 | 4 | | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| EMIQUON NWR | 33654 | IL | 3 | 22 | 3 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| ERIE NWR | 52520 | PA | 5 | 13 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| EUFAULA NWR | 43560 | AL | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | |
| FALLON NWR | 14592 | NV | 1 | 9 | 3 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| FARALLON NWR | 11641 | CA | 1 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| FEATHERSTONE NWR | 51612 | VA | 5 | 29 | 3 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| FELSENTHAL NWR | 43579 | AR | 4 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| FERN CAVE NWR | 43662 | AL | 4 | 24 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| FISH SPRINGS NWR | 65540 | UT | 6 | 9 | 3 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| FISHERMAN ISLAND NWR | 51651 | VA | 5 | 0 | 3 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| FLATTERY ROCKS NWR | 13537 | WA | 1 | 0 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| FLINT HILLS NWR | 64580 | KS | 6 | 22 | 3 | | 0 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| FLORENCE LAKE NWR | 62516 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| FLORIDA PANTHER NWR | 41545 | FL | 4 | 31 | 1 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | |
| FORT NIOBRARA NWR | 64520 | NE | 6 | 17 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| FOX RIVER NWR | 32524 | WI | 3 | 23 | 4 | | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| FRANKLIN ISLAND NWR | 53533 | ME | 5 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| FRANZ LAKE NWR | 13558 | WA | 1 | 5 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| GLACIAL RIDGE NWR | 32580 | MN | 3 | 11 | 4 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| GRAND BAY NWR | 43617 | MS | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| GRAND COTE NWR | 43696 | LA | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| GRASSLANDS WMA | 81653 | CA | 6 | 32 | 2 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| GRAVEL ISLAND NWR | 32521 | WI | 3 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| GRAYS HARBOR NWR | 13534 | WA | 1 | 0 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| GRAYS LAKE NWR | 14612 | ID | 1 | 10 | 5 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| GREAT BAY NWR | 53570 | NH | 5 | 30 | 4 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | |
| GREAT DISMAL SWAMP NWR | 51580 | VA | 5 | 27 | 3 | | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| GREAT MEADOWS NWR | 53511 | MA | 5 | 30 | 4 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| GREAT RIVER NWR | 33640 | MO | 3 | 22 | 3 | 3 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| GREAT SWAMP NWR | 52530 | NJ | 5 | 29 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| GREAT WHITE HERON NWR | 41582 | FL | 4 | 0 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| GREEN BAY NWR | 32522 | WI | 3 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| GRULLA NWR | 21591 | TX | 2 | 18 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| GUADALUPE-NIPOMO DUNES NWR | 11673 | CA | 1 | 32 | 5 | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| HAGERMAN NWR | 21580 | TX | 2 | 21 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| HAILSTONE NWR | 61521 | MT | 6 | 17 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HALFBREED LAKE NWR | 61522 | MT | 6 | 17 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HALF-WAY LAKE NWR | 62517 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HAMDEN SLOUGH NWR | 32600 | MN | 3 | 23 | 4 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HANDY BRAKE NWR | 43567 | LA | 4 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| HARBOR ISLAND NWR | 31512 | MI | 3 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| HARRIS NECK NWR | 41627 | GA | 4 | 27 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| HART MOUNTAIN NATL ANTELOPE REFUGE | 14622 | OR | 1 | 9 | 5 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HATCHIE NWR | 42525 | TN | 4 | 27 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| HAVASU NWR | 22550 | CA | 2 | 33 | 1 | | 1 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | |
| HEWITT LAKE NWR | 61583 | MT | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HIDDENWOOD NWR | 62544 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HILLSIDE NWR | 43580 | MS | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| HOBART LAKE NWR | 62518 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HOBE SOUND NWR | 41561 | FL | 4 | 31 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | |
| HOLLA BEND NWR | 43590 | AR | 4 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| HOLT COLLIER NWR | 43684 | MS | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| HOPPER MOUNTAIN NWR | 11674 | CA | 1 | 32 | 3 | 4 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| HORICON NWR | 32520 | WI | 3 | 23 | 4 | | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| HUMBOLDT BAY NWR | 11590 | CA | 1 | 0 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| HURON NWR | 31511 | MI | 3 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| HUTCHINSON LAKE NWR | 62519 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| HUTTON LAKE NWR | 65522 | CO | 6 | 10 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| IMPERIAL NWR | 22560 | AZ | 2 | 33 | 1 | | 1 | 1 | 0 | 0 | **1** | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | C. Conway |
| IROQUOIS NWR | 52540 | NY | 5 | 13 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | S. Lor |
| ISLAND BAY NWR | 41547 | FL | 4 | 0 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | |
| J.CLARK SALYER NWR | 62620 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| J.N. 'DING' DARLING NWR | 41540 | FL | 4 | 31 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| JAMES RIVER NWR | 51621 | VA | 5 | 27 | 3 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| JOHN H. CHAFEE NWR | 53547 | RI | 5 | 30 | 5 | | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| JOHN HAY NWR | 53571 | NH | 5 | 14 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | |
| JOHN HEINZ NWR AT TINICUM | 52570 | PA | 5 | 30 | 3 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| JOHN W. AND LOUISE SEIER NWR | 64522 | NE | 6 | 19 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| JOHNSON LAKE NWR | 62520 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| JULIA BUTLER HANSEN REFUGE | 13554 | WA | 1 | 5 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| KARL E. MUNDT NWR | 64552 | SD | 6 | 11 | 4 | | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| KARNER BLUE BUTTERFLY PROJECT | 99999 | | 6 | 30 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | |
| KELLYS SLOUGH NWR | 62583 | ND | 6 | 11 | 4 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| KERN NWR | 11610 | CA | 1 | 32 | 2 | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| KEY CAVE NWR | 43664 | AL | 4 | 24 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| KIRTLANDS WARBLER NWR | 31513 | MI | 3 | 12 | 4 | 5 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| KIRWIN NWR | 64610 | KS | 6 | 19 | 3 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| KLAMATH MARSH NWR | 11662 | OR | 1 | 9 | 5 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| KOFA NWR | 22570 | AZ | 2 | 33 | 1 | 2, 3 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| KOOTENAI NWR | 14580 | ID | 1 | 10 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LACASSINE NWR | 43610 | LA | 4 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| LACREEK NWR | 64540 | SD | 6 | 17 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LAGUNA ATASCOSA NWR | 21553 | TX | 2 | 37 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| LAKE ALICE NWR | 62584 | ND | 6 | 11 | 4 | 5 | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LAKE ANDES NWR | 64550 | SD | 6 | 11 | 4 | 3 | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LAKE GEORGE NWR | 62521 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LAKE ILO NWR | 62571 | ND | 6 | 17 | 4 | | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LAKE ISOM NWR | 42576 | TN | 4 | 26 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| LAKE MASON NWR | 61523 | MT | 6 | 17 | 5 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LAKE NETTIE NWR | 62546 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| LAKE OPHELIA NWR | 43695 | LA | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| LAKE OTIS NWR | 62547 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LAKE PATRICIA NWR | 62111 | ND | 6 | 17 | 4 | | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LAKE THIBADEAU NWR | 61584 | MT | 6 | 11 | 4 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LAKE UMBAGOG NWR | 53580 | NH | 5 | 14 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | |
| LAKE WALES RIDGE NWR | 41577 | FL | 4 | 31 | 1 | | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | |
| LAKE WOODRUFF NWR | 41550 | FL | 4 | 31 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | |
| LAKE ZAHL NWR | 62561 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LAMBS LAKE NWR | 62586 | ND | 6 | 11 | 4 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LAMESTEER NWR | 61531 | MT | 6 | 17 | 4 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LAS VEGAS NWR | 22580 | NM | 2 | 16 | 4 | 3 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| LEE METCALF NWR | 61560 | MT | 6 | 10 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LESLIE CANYON NWR | 22524 | AZ | 2 | 34 | 2 | 3 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| LEWIS AND CLARK NWR | 13555 | WA | 1 | 0 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LIDO BEACH WMA | 52567 | NY | 5 | 30 | 4 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| LITTLE GOOSE NWR | 62587 | ND | 6 | 11 | 4 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LITTLE PEND OREILLE NWR | 13561 | WA | 1 | 10 | 5 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LITTLE RIVER NWR | 21680 | OK | 2 | 25 | 2 | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| LITTLE SANDY NWR | 21685 | OK | 2 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| LOGAN CAVE NWR | 43591 | AR | 4 | 24 | 3 | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| LORDS LAKE NWR | 62624 | ND | 6 | 11 | 5 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LOST LAKE NWR | 62548 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LOST TRAIL NWR | 61545 | MT | 6 | 10 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LOSTWOOD NWR | 62572 | ND | 6 | 11 | 5 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LOWER HATCHIE NWR | 42527 | TN | 4 | 27 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| LOWER KLAMATH NWR | 11663 | CA | 1 | 9 | 5 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| LOWER RIO GRANDE VALLEY NWR | 21552 | TX | 2 | 36 | 1 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| LOWER SUWANNEE NWR | 41515 | FL | 4 | 27 | 2 | 1 | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | |
| MACKAY ISLAND NWR | 41660 | NC | 4 | 27 | 3 | | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| MALHEUR NWR | 13570 | OR | 1 | 9 | 4 | 5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| MANDALAY NWR | 43626 | LA | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | |
| MAPLE RIVER NWR | 62634 | ND | 6 | 11 | 4 | | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| MARAIS DES CYGNES NWR | 64630 | KS | 6 | 22 | 3 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MARIN ISLANDS NWR | 11645 | CA | 1 | 0 | 4 | | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | |
| MARTIN NWR | 51540 | MD | 5 | 30 | 3 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| MASHPEE NWR | 53518 | MA | 5 | 30 | 5 | | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | |
| MASON NECK NWR | 51610 | VA | 5 | 30 | 3 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| MASSASOIT NWR | 53517 | MA | 5 | 30 | 5 | | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | |
| MATHEWS BRAKE NWR | 43681 | MS | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| MATLACHA PASS NWR | 41548 | FL | 4 | 0 | 2 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | |
| MATTAMUSKEET NWR | 42530 | NC | 4 | 27 | 3 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | |
| MAXWELL NWR | 22581 | NM | 2 | 18 | 3 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| MCFADDIN NWR | 21525 | TX | 2 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| MCKAY CREEK NWR | 13582 | WA | 1 | 9 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| MCLEAN NWR | 62549 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| MCNARY NWR | 13520 | WA | 1 | 9 | 3 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| MEDICINE LAKE NWR | 61530 | MT | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| MERCED NWR | 11652 | CA | 1 | 32 | 2 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| MEREDOSIA NWR | 33652 | IL | 3 | 22 | 3 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| MERRITT ISLAND NWR | 41570 | FL | 4 | 31 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | |
| MIDDLE MISSISSIPPI RIVER NWR | 33660 | IL | 3 | 22 | 3 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| MILLE LACS NWR | 32541 | MN | 3 | 12 | 4 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| MINGO NWR | 33540 | MO | 3 | 26 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| MINIDOKA NWR | 14614 | ID | 1 | 9 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| MINNESOTA VALLEY NWR | 32590 | MN | 3 | 23 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| MISSISQUOI NWR | 53520 | VT | 5 | 13 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| MISSISSIPPI SANDHILL CRANE NWR | 43615 | MS | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| MOAPA VALLEY NWR | 14553 | NV | 1 | 9 | 1 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| MODOC NWR | 11690 | CA | 1 | 9 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| MONOMOY NWR | 53514 | MA | 5 | 30 | 5 | | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | |
| MONTE VISTA NWR | 65511 | CO | 6 | 16 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| MONTEZUMA NWR | 52550 | NY | 5 | 13 | 4 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| MOODY NWR | 21522 | TX | 2 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| MOOSEHORN NWR | 53530 | ME | 5 | 14 | 5 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | |
| MORGAN BRAKE NWR | 43582 | MS | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | |
| MORTENSON LAKE NWR | 65524 | CO | 6 | 10 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| MOUNTAIN LONGLEAF NWR | 43666 | GA | 4 | 28 | 3 | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| MULESHOE NWR | 21590 | TX | 2 | 18 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| MUSCATATUCK NWR | 31530 | IN | 3 | 24 | 3 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| NANSEMOND NWR | 51581 | VA | 5 | 27 | 3 | | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| NANTUCKET NWR | 53515 | MA | 5 | 30 | 5 | | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | |
| NATIONAL BISON RANGE | 61540 | MT | 6 | 10 | 5 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| NATIONAL ELK REFUGE | 61550 | WY | 6 | 10 | 5 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| NATIONAL KEY DEER REFUGE | 41580 | FL | 4 | 0 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| NEAL SMITH NWR | 33670 | IA | 3 | 22 | 4 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| NECEDAH NWR | 32530 | WI | 3 | 23 | 4 | | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| NESTUCCA BAY NWR | 13597 | OR | 1 | 5 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| NINE-PIPE NWR | 61541 | MT | 6 | 10 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| NINIGRET NWR | 53542 | RI | 5 | 30 | 5 | | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| NISQUALLY NWR | 13529 | WA | 1 | 5 | 5 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| NOMANS LAND ISLAND NWR | 53516 | MA | 5 | 30 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| NORTH CENTRAL VALLEY WMA | 81628 | CA | 6 | 32 | 2 | 3 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| NORTH PLATTE NWR | 64511 | NE | 6 | 18 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| NOXUBEE NWR | 43620 | MS | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| OCCOQUAN BAY NWR | 51611 | VA | 5 | 29 | 3 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| OHIO RIVER ISLANDS NWR | 51660 | WV | 5 | 28 | 3 | 4 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| OKEFENOKEE NWR | 0 | GA | 4 | 27 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | |
| OPTIMA NWR | 21661 | OK | 2 | 19 | 3 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| OREGON ISLANDS NWR | 13599 | OR | 1 | 0 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| OTTAWA NWR | 31540 | OH | 3 | 22 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| OURAY NWR | 65570 | UT | 6 | 16 | 3 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| OVERFLOW NWR | 43571 | AR | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| OXBOW NWR | 53512 | MA | 5 | 30 | 4 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| OXFORD SLOUGH WPA | 14615 | ID | 1 | 9 | 4 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| OYSTER BAY NWR | 52563 | NY | 5 | 0 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| OZARK CAVEFISH NWR | 33541 | MO | 3 | 24 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| OZARK PLATEAU NWR | 21645 | OK | 2 | 24 | 3 | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| PABLO NWR | 61542 | MT | 6 | 10 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| PAHRANAGAT NWR | 14551 | NV | 1 | 9 | 2 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| PANTHER SWAMP NWR | 43581 | MS | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| PARKER RIVER NWR | 53550 | MA | 5 | 30 | 5 | 4 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| PASSAGE KEY NWR | 41563 | FL | 4 | 0 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| PATHFINDER NWR | 65523 | CO | 6 | 10 | 5 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| PATOKA RIVER NWR | 31560 | IN | 3 | 24 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| PATUXENT RESEARCH REFUGE | 51640 | MD | 5 | 30 | 3 | | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| PEA ISLAND NWR | 42540 | NC | 4 | 0 | 3 | | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | |
| PEE DEE NWR | 42550 | NC | 4 | 29 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| PELICAN ISLAND NWR | 41572 | FL | 4 | 0 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | |
| PETIT MANAN NWR | 53533 | ME | 5 | 14 | 5 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | |
| PIEDMONT NWR | 41680 | GA | 4 | 29 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| PIERCE NWR | 13557 | WA | 1 | 5 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| PILOT KNOB NWR | 33542 | MO | 3 | 24 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| PINCKNEY ISLAND NWR | 41629 | GA | 4 | 27 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| PINE ISLAND NWR | 41549 | FL | 4 | 0 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| PINELLAS NWR | 41564 | FL | 4 | 0 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| PIXLEY NWR | 11612 | CA | 1 | 32 | 2 | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| PLEASANT LAKE NWR | 62588 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| PLUM TREE ISLAND NWR | 51512 | VA | 5 | 30 | 3 | | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| POCOSIN LAKES NWR | 42535 | NC | 4 | 27 | 3 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | |
| POND CREEK NWR | 43575 | AR | 4 | 25 | 2 | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| POND ISLAND NWR | 53537 | ME | 5 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| PORT LOUISA NWR | 33630 | IA | 3 | 22 | 4 | 4 | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| PRESQUILE NWR | 51623 | VA | 5 | 27 | 3 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| PRETTY ROCK NWR | 62575 | ND | 6 | 17 | 4 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| PRIME HOOK NWR | 51560 | DE | 5 | 30 | 4 | 3 | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| PROTECTION ISLAND NWR | 13533 | WA | 1 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| QUILLAYUTE NEEDLES NWR | 13538 | WA | 1 | 0 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| QUIVIRA NWR | 64620 | KS | 6 | 19 | 3 | | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| RABB LAKE NWR | 62625 | ND | 6 | 11 | 5 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| RACHEL CARSON NWR | 53553 | ME | 5 | 30 | 5 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | |
| RAPPAHANNOCK RIVER VALLEY NWR | 51622 | VA | 5 | 27 | 3 | | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| RED RIVER NWR | 42653 | LA | 4 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| REELFOOT NWR | 42577 | TN | 4 | 26 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| RICE LAKE NWR | 32540 | MN | 3 | 12 | 4 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| RICE LAKE NWR-SANDSTONE UNIT | 32542 | MN | 3 | 12 | 4 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| RIDGEFIELD NWR | 13551 | WA | 1 | 5 | 4 | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| ROANOKE RIVER NWR | 42630 | NC | 4 | 27 | 3 | | 1 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| ROCK LAKE NWR | 62589 | ND | 6 | 11 | 5 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| ROCKY MOUNTAIN ARSENAL NWR | 61170 | CO | 6 | 18 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| ROSE LAKE NWR | 62590 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| RUBY LAKE NWR | 14570 | NV | 1 | 9 | 4 | 5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| RYDELL NWR | 32583 | MN | 3 | 11 | 4 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SABINE NWR | 43640 | LA | 4 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| SACHUEST POINT NWR | 53543 | RI | 5 | 30 | 5 | | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| SACRAMENTO NWR | 11619 | CA | 1 | 32 | 2 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| SACRAMENTO RIVER NWR | 11627 | CA | 1 | 32 | 2 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| SADDLE MOUNTAIN NWR | 13701 | WA | 1 | 9 | 3 | 4, 5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SALINAS RIVER NWR | 11642 | CA | 1 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| SALT PLAINS NWR | 21630 | OK | 2 | 19 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| SAN ANDRES NWR | 22521 | NM | 2 | 35 | 2 | 3, 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| SAN BERNARD NWR | 21541 | TX | 2 | 37 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| SAN BERNARDINO NWR | 22523 | AZ | 2 | 34 | 2 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| SAN DIEGO NWR | 11720 | CA | 1 | 32 | 3 | 4 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | |
| SAN JOAQUIN RIVER NWR | 11654 | CA | 1 | 32 | 2 | 3 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| SAN JUAN ISLANDS NWR | 13532 | WA | 1 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| SAN LUIS NWR | 11655 | CA | 1 | 32 | 2 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| SAN PABLO BAY NWR | 11644 | CA | 1 | 32 | 4 | | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | |
| SAND LAKE NWR | 64570 | SD | 6 | 11 | 4 | | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SANTA ANA NWR | 21551 | TX | 2 | 36 | 1 | | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| SANTEE NWR | 42570 | SC | 4 | 27 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| SAUTA CAVE NWR | 43661 | AL | 4 | 28 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| SAVANNAH-PINCKNEY NWRs | 41625 | GA | 4 | 27 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | |
| SCHOOL SECTION LAKE NWR | 62626 | ND | 6 | 11 | 5 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SEAL BEACH NWR | 11683 | CA | 1 | 32 | 4 | | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| SEAL ISLAND NWR | 53534 | ME | 5 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SEATUCK NWR | 52565 | NY | 5 | 0 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| SEEDSKADEE NWR | 65580 | WY | 6 | 10 | 5 | 4 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SENEY NWR | 31510 | MI | 3 | 12 | 5 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SEQUOYAH NWR | 21640 | OK | 2 | 25 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| SEVILLETA NWR | 22522 | NM | 2 | 16 | 2 | 3, 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| SHAWANGUNK GRASSLANDS NWR | 52611 | NJ | 5 | 28 | 4 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| SHELDON NWR | 14621 | OR | 1 | 9 | 5 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SHELL LAKE NWR | 62574 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SHERBURNE NWR | 32550 | MN | 3 | 23 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| SHEYENNE LAKE NWR | 62551 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SHIAWASSEE NWR | 31520 | MI | 3 | 12 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| SIBLEY LAKE NWR | 62523 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SILETZ BAY NWR | 13598 | OR | 1 | 5 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SILVER LAKE NWR | 62591 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SILVIO O. CONTE NF&WR | 53590 | MA | 5 | 14 | 5 | 4 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| SLADE NWR | 62524 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SNYDER LAKE NWR | 62592 | ND | 6 | 11 | 5 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SONNY BONO SALTON SEA NWR | 11631 | CA | 1 | 33 | 1 | | 0 | 1 | 0 | 0 | 1 | 0 | **1** | 0 | 1 | 0 | 1 | 1 | 0 | C. Conway |
| SPRINGWATER NWR | 62526 | ND | 6 | 17 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SQUAW CREEK NWR | 33560 | MO | 3 | 22 | 3 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| ST. CATHERINE CREEK NWR | 42640 | MS | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| ST. JOHNS NWR | 41573 | FL | 4 | 31 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | |
| ST. MARKS NWR | 41640 | FL | 4 | 27 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | |
| ST. VINCENT NWR | 41650 | FL | 4 | 27 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | |
| STEIGERWALD LAKE NWR | 13556 | WA | 1 | 5 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| STEWART B. MCKINNEY NWR | 53546 | CT | 5 | 30 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| STEWART LAKE NWR | 62576 | ND | 6 | 17 | 4 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| STILLWATER NWR | 14590 | NV | 1 | 9 | 3 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| STONE LAKES NWR | 11710 | CA | 1 | 32 | 3 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| STONEY SLOUGH NWR | 62527 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| STORM LAKE NWR | 62662 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| STUMP LAKE NWR | 62593 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SULLYS HILL NATIONAL GAME PRESERVE | 62594 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| SUNBURST LAKE NWR | 62528 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SUNKHAZE MEADOWS NWR | 53560 | ME | 5 | 14 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | |
| SUPAWNA MEADOWS NWR | 52571 | NJ | 5 | 30 | 4 | 3 | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| SUSQUEHANNA NWR | 51532 | MD | 5 | 30 | 3 | | 1 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| SUTTER NWR | 11623 | CA | 1 | 32 | 2 | 3 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| SWAN LAKE NWR | 33570 | MO | 3 | 22 | 3 | | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| SWAN RIVER NWR | 61543 | MT | 6 | 10 | 5 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| SWANQUARTER NWR | 42532 | NC | 4 | 0 | 3 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 0 | |
| SWEETWATER MARSH NWR | 11682 | CA | 1 | 32 | 4 | | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | |
| TALLAHATCHIE NWR | 43645 | MS | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| TAMARAC NWR | 32560 | MN | 3 | 12 | 5 | 4 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| TARGET ROCK NWR | 52568 | NY | 5 | 30 | 4 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| TEN THOUSAND ISLANDS NWR | 41555 | FL | 4 | 31 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | |
| TENNESSEE NWR | 46260 | TN | 4 | 24 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| TENSAS RIVER NWR | 43690 | LA | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| TEWAUKON NWR | 62660 | ND | 6 | 11 | 4 | | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| TEXAS POINT NWR | 21526 | TX | 2 | 37 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| THACHER ISLAND NWR | 53554 | MA | 5 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| THREE ARCH ROCKS NWR | 13595 | OR | 1 | 0 | 5 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| TIJUANA SLOUGH NWR | 11681 | CA | 1 | 32 | 4 | | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | |
| TISHOMINGO NWR | 21650 | OK | 2 | 21 | 2 | | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| TOMAHAWK NWR | 62529 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| TOPPENISH NWR | 13521 | WA | 1 | 9 | 3 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| TREMPEALEAU NWR | 32578 | WI | 3 | 23 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| TRINITY RIVER NWR | 21593 | TX | 2 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | |
| TRUSTOM POND NWR | 53545 | RI | 5 | 30 | 5 | | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| TUALATIN RIVER NWR | 13600 | OR | 1 | 5 | 4 | | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| TULE LAKE NWR | 11664 | CA | 1 | 9 | 4 | 5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| TURNBULL NWR | 13560 | WA | 1 | 9 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| TWO PONDS NWR | 61171 | CO | 6 | 18 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| TWO RIVERS NWR | 33622 | IL | 3 | 22 | 3 | 3 | 0 | 1 | 0 | 1 | 0 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| TYBEE NWR | 41624 | GA | 4 | 27 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | |
| UL BEND NWR | 61529 | MT | 6 | 11 | 4 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |

| NWR | org code | State | USFWS Region | BCR | Survey Window | Other Survey Window | BLRA | LEBI | YERA | SORA | VIRA | KIRA | CLRA | AMBI | COMO | PUGA | AMCO | PBGR | LIMP | Verified By |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| UMATILLA NWR | 13583 | WA | 1 | 9 | 3 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| UNION SLOUGH NWR | 33580 | IA | 3 | 11 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| UPPER KLAMATH NWR | 11665 | CA | 1 | 9 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| UPPER MISSISSIPPI RIVER NW&FR | 32579 | MN | 3 | 23 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | |
| UPPER OUACHITA NWR | 43546 | LA | 4 | 25 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| UPPER SOURIS NWR | 62680 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| VALENTINE NWR | 64521 | NE | 6 | 19 | 4 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| WACCAMAW NWR | 42512 | SC | 4 | 27 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| WALLKILL RIVER NWR | 52610 | NJ | 5 | 28 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 0 | |
| WALLOPS ISLAND NWR | 51571 | VA | 5 | 30 | 4 | | 1 | 1 | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 0 | 0 | |
| WAPACK NWR | 53572 | NH | 5 | 14 | 5 | 4 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | |
| WAPANOCCA NWR | 43650 | AR | 4 | 26 | 3 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| WAR HORSE NWR | 61524 | MT | 6 | 17 | 4 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| WASHITA NWR | 21660 | OK | 2 | 19 | 2 | | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| WASSAW NWR | 41628 | GA | 4 | 27 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | 1 | 0 | |
| WATERCRESS DARTER NWR | 43663 | AL | 4 | 28 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| WAUBAY NWR | 64590 | SD | 6 | 11 | 4 | | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| WERTHEIM NWR | 52561 | NY | 5 | 30 | 4 | | 0 | 1 | 0 | 1 | 1 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | |
| WHEELER NWR | 43660 | AL | 4 | 24 | 3 | 2 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 0 | |
| WHITE LAKE NWR | 62553 | ND | 6 | 17 | 4 | | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| WHITE RIVER NWR | 43670 | AR | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |
| WHITTLESEY CREEK NWR | 32620 | WI | 3 | 12 | 5 | | 0 | 1 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| WICHITA MOUNTAINS WILDLIFE REFUGE | 21670 | OK | 2 | 19 | 3 | 2 | 0 | 0 | 0 | 0 | 0 | 1 | 0 | 0 | 0 | 0 | 1 | 1 | 0 | |
| WILD RICE LAKE NWR | 62663 | ND | 6 | 11 | 4 | | 0 | 0 | 0 | 1 | 1 | 1 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| WILLAPA NWR | 13552 | WA | 1 | 5 | 5 | | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| WILLIAM L. FINLEY NWR | 13589 | OR | 1 | 5 | 4 | 5 | 0 | 0 | 0 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| WILLOW CREEK-LURLINE WMA | 81625 | CA | 6 | 32 | 2 | | 0 | 1 | 0 | 1 | 1 | 0 | 0 | 0 | 1 | 0 | 1 | 1 | 0 | |
| WILLOW LAKE NWR | 62627 | ND | 6 | 11 | 5 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| WINTERING RIVER NWR | 62628 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| WOLF ISLAND NWR | 41623 | GA | 4 | 27 | 2 | | 1 | 1 | 0 | 0 | 0 | 1 | 1 | 0 | 1 | 1 | 0 | 1 | 0 | |
| WOOD LAKE NWR | 62595 | ND | 6 | 11 | 4 | | 0 | 0 | 1 | 1 | 1 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 0 | |
| YAZOO NWR | 43682 | MS | 4 | 26 | 2 | | 0 | 1 | 0 | 0 | 0 | 1 | 0 | 0 | 1 | 1 | 1 | 1 | 0 | |